

EAST BROTHER LIGHT STATION



By Frank Perry, as edited by Wayne Wheeler

East Brother Lighthouse circa 1900.
U. S. Lighthouse Society Archives.

Introduction

If one were to describe the “typical” lighthouse, it would probably be a tall, white, circular tower, made of brick or stone, with black trim and a few slender windows. It would be located on the open coast, warning ships of treacherous surf or dangerous rocks. Indeed, some of America’s best known beacons fit this description: Cape Hatteras in North Carolina, Portland Head in Maine, and Pigeon Point on the central coast of California. Based on these criteria, East Brother Light Station would not be considered typical. Its lighthouse is a rectangular, wooden building, painted buff color with white trim. It is not especially tall, and it overlooks a bay instead of an ocean.

In reality, though, East Brother was not at all an unusual lighthouse during its heyday in the late nineteenth and early twentieth centuries. Several other lighthouses were built on the West Coast in the late 1800s using similar plans. It was also one of about a dozen lighthouses built on greater San Francisco Bay. Like other United States lighthouses, it was constructed and operated by the federal government, primarily as a nighttime aid to navigation.

Today, East Brother is unusual in that much of it has been restored to its early-day appearance and function. A giant cistern still stores rainwater for use on the island. Victorian-style trim decorates the outside of the dwelling and tower. And the mighty diaphone fog signal, installed in 1934, roars back to life to the thrill of visitors. Guests can even stay overnight, dining and sleeping where the dif-

ferent lightkeepers lived for nearly one hundred years. Today, as a living museum, East Brother Light Station preserves an almost forgotten, yet important, part of America’s maritime history.

East Brother Island is one of two tiny islands on the east side of San Pablo Strait, a two-mile-wide waterway connecting San Francisco Bay with San Pablo Bay. The island covers just three-quarters of an acre. Neighboring West Brother, only a stone’s throw away, is even smaller. The only inhabitants on West Brother are the flocks of gulls, cormorants, and pelicans that perch on its rounded, rocky crest. East Brother had similar inhabitants and a similar shape until 1873 when the federal government hired contractors to blast off the top of the island and begin constructing a light station.

The captains who guided ships through San Pablo Strait badly needed a lighthouse. The strait connects the Golden Gate, San Francisco, and other San Francisco Bay ports with inland ports such as Stockton and Sacramento. Ships traveling to and from the Mare Island Navy Yard must also pass through these waters. Vessels that stray off course at night or in fog could easily collide with the numerous rocky islands and nearby shoals.

The lighthouse was originally a six-room dwelling with an attached tower for the lens. The government's workers also constructed a fog signal building, workshop, wharf, boathouse, water tanks, cistern, and rain catchment basin. Since the station was only accessible by boat, it was equipped so that the keepers could meet most any sudden demand, be it high winds, storm waves, or unexpected equipment failures.

About three dozen different men served at East Brother through the years as keepers and assistants. They faithfully kept the light burning each night, guiding ships across the bay waters. Many of the keepers lived there with their fami-

lies, who in later years recalled with nostalgia their days on the island. It was a peaceful life, away from the mainland rush, yet a life with a special sense of duty and fulfillment.

Though the station was in many ways isolated from the mainland, the world did not pass it by. As technology and the lighthouse administration changed, so did the operation of East Brother. In 1934 electricity replaced kerosene as energy for the lens. That same year compressed air replaced steam as power for the fog signal. In later years rotating crews of Coast Guardsmen replaced the keepers of the old U.S. Lighthouse Service.

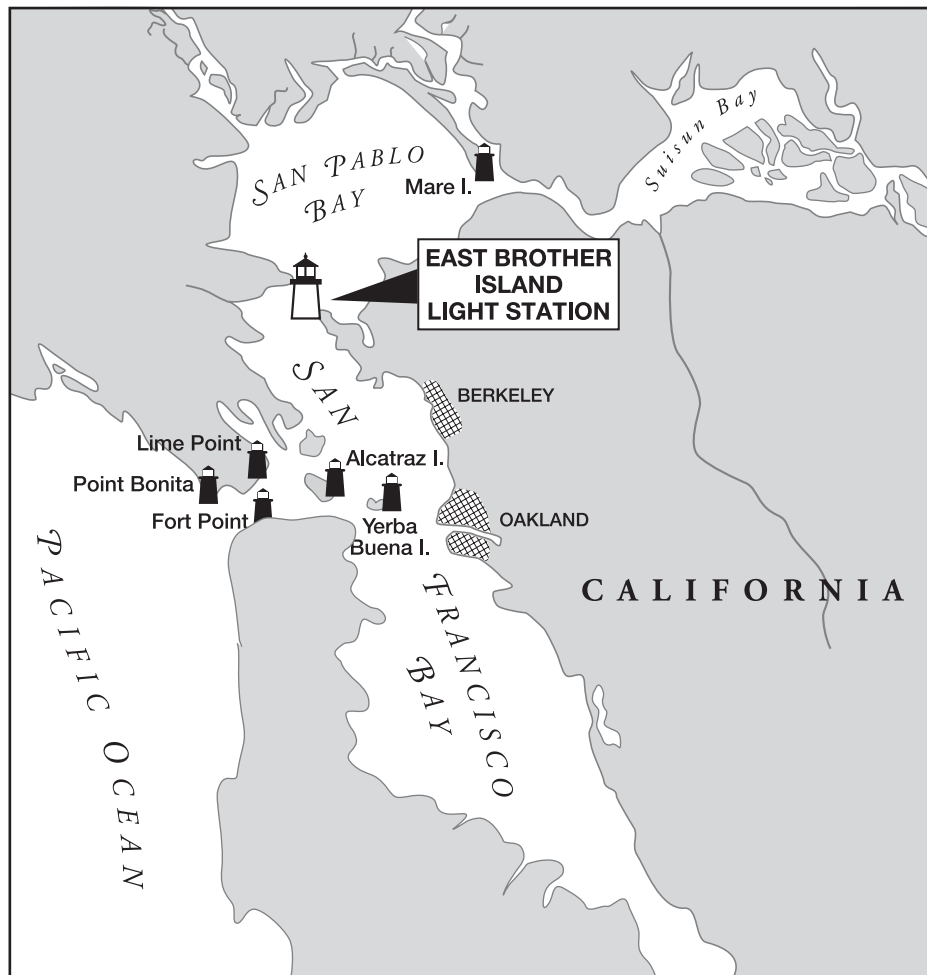
In the late 1960s, technology brought what was nearly the final chapter in the station's history. The Coast Guard decided to automate East Brother. To save on salaries and maintenance costs, an automatic rotating beacon was installed on the dome of the lantern room, and the last resident personnel said goodbye to their island home. Coast Guard officials had announced that the old buildings would eventually be demolished and a lens placed on a steel tower. This, they said, would be easier to

maintain and less prone to vandalism. The announcement angered many local citizens; they dearly loved the quaint old landmark and vowed to save it.

In 1971 primarily through the efforts of the Contra Costa Shoreline Parks Committee, the station was placed on the National Register of Historic Places. This protected it from being razed, but neither the Coast Guard nor other public agencies had funds for maintaining or restoring the buildings. For ten years the birds and natural elements reclaimed the island. The only people who regularly visited it were Coast Guard service crews who periodically checked the lens and electronic fog signal. In the meantime the paint peeled, the iron rusted, and the wood rotted.

In 1979 East Brother Light Station, Inc., a nonprofit citizens' group, was formed with the goal of restoring the landmark and making it available for public use. The organization successfully applied for a Maritime Preservation Matching Grant from the U.S. Department of the Interior. The Coast Guard enthusiastically supported the project and gave the organization a license to occupy the island. With the help of private donations and hundreds of volunteers, the lighthouse and other island structures were restored and rehabilitated. The equivalent of \$300,000 was put into the project, which was completed in 1980. Today, day use fees, operation as a bed and breakfast inn, and continued volunteer help make upkeep and further restoration possible.

Unfortunately, many of California's lighthouses have not been so lucky. Of the nearly fifty lighthouses that were built to watch over California's seacoast and bays, fully a third either no longer exist or have been so altered as to spoil much of their aesthetic and historical value. This gives added importance to East Brother, where not only the lighthouse but the entire station is preserved. Several relatives and descendants of early keepers have shared their remembrances of life on the island. The station journals have also survived, giving virtually a daily record of events at the station from first lighting in 1874 through 1945. All this makes the story of East Brother Light Station an unusually rich, well-documented and personal history.



A Light Station for East Brother

San Francisco Bay ranks among the world's great natural harbors. Though the Golden Gate at its narrowest point is but a mile wide, it opens into a bay covering nearly 450 square miles. The bay has not one harbor but dozens along its one hundred miles of meandering shoreline.

San Francisco Bay stretches from Alviso near San Jose in the south to points San Pablo and San Pedro in the north. Between these two points lies San Pablo Strait. The two islands called The Brothers mark the east side of the strait, a quarter-mile off point San Pablo. On the west side are two similar islands named The Sisters. It is not known who named these two sets of islands or when they were named. It has long been a tradition, however, to name two or more similarly shaped islands or mountains in this way. Two islands also called The Brothers lie just south of Cape Mendocino in Humboldt County. The names for the San Francisco Bay islands became official in 1851 when the U.S. Coast Survey used them in preparing the first accurate map of the bay.

Besides providing shelter for boats, San Francisco and San Pablo bays also link the vast Sacramento and San Joaquin river systems to the Pacific Ocean. Much of the river water comes from melted snow in the Sierra Nevada, and some of it flows as much as four hundred miles before reaching the ocean. During the Gold Rush, the Sacramento and San Joaquin rivers were important transportation routes, helping link San Francisco with the Sierra. In the 1850s and 1860s dozens of boats regularly ferried mail, passengers, and freight between San Francisco and inland ports as far north as Red Bluff and nearly as far south as Fresno. By the 1870s, railroads started taking much of the business away from the riverboats, but even today freighters unload and pick up cargo at Sacramento and Stockton—a hundred miles inland from the sea.

In 1854, when the federal government established a Navy shipyard at Mare Island near Vallejo, ship traffic through San Pablo Strait further increased. By 1866, the Mare Island fleet numbered nearly 700 ships.

In response to the continued growth of the San Francisco Bay area, three sites overlooking the bay waters were recognized in the early 1870s as needing lighthouses and fog signals. These were Yerba Buena Island between San Francisco and Oakland, the east side of

San Pablo Strait, and the southern tip of Mare Island.

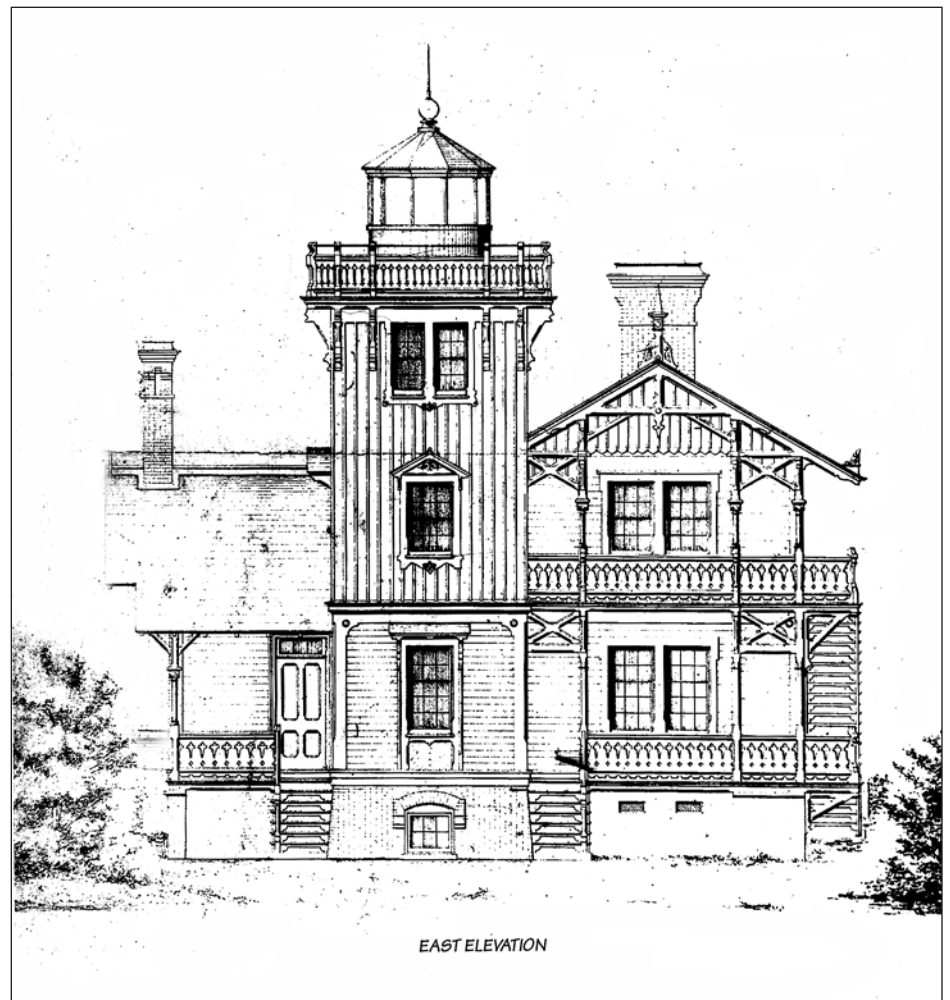
Previously, in 1851, the Coast Survey had anchored a marker buoy over Invincible Rock, a submerged hazard about one-half mile southwest of The Brothers. By the early 1870s other buoys marked hazards bordering the strait but ship captains who regularly navigated these waters needed a better guide at night and during fog. On March 3, 1871, Congress appropriated \$20,000 for construction of a lighthouse and fog signal for this purpose.

After passage of the bill, lighthouse engineers examined land at Point San Pablo and tried to negotiate with the landowners for purchase of a suitable site on the mainland. The owners, however, refused to sell. This left the government with no choice other than to file suit against them for condemnation of the land. In July, 1871, at a special proceeding of the state's Fifteenth District Court, the jury awarded the land owners \$4,000 for the 12.8 acres wanted by the government. The Lighthouse Board thought that this judgment of

the land's value was excessive, but being anxious to begin lighthouse construction, accepted the ruling. The owners of the land apparently thought this was not enough, so they appealed the case to the California Supreme Court.

In March of 1872 Paul J. Pelz, chief draftsman for the Lighthouse Board, went ahead and executed drawings for the proposed Point San Pablo lighthouse. He prepared them under the direction of Major George Elliot, engineering secretary of the board. In the meantime, litigation dragged on over the Point San Pablo site. The final hearing in the case was scheduled for October, but the defendants succeeded in delaying matters still further.

Soon two years had passed since plans were first made for a lighthouse along San Pablo Strait, and mariners who regularly traveled this route were growing impatient with the delays. In January, 1873, a number of captains from steamers and other vessels presented a petition to the lighthouse inspector in San Francisco urging that the lighthouse be built instead on nearby East Brother Island since the federal



government already owned this property. The inspector agreed and on January 28 forwarded the petition to the Lighthouse Board for consideration.

The Lighthouse Board responded enthusiastically to the new site proposal. Besides avoiding the legal problems, having the light on the island would increase its arc of useful visibility and place it closer to shipping lanes. The primary disadvantages of the site would be the lack of fresh water for household use and operation of a steam-powered fog signal, the necessity of providing boat transportation, and the lack of adequate space for a keepers' garden.

The Brothers and nearby Sisters Islands had been reserved for military purposes by President Andrew Johnson in 1867. At that time the islands were still unclaimed. Johnson had been advised that it might someday be necessary to erect batteries on these islands in the event enemy ships tried to reach Mare Island Navy Yard during a war.

The Treasury Secretary wrote to the Secretary of War requesting permission to build a light and fog signal station on East Brother. The Secretary of War granted a fifty-year lease under the condition that the station "... shall give way to fortifications whenever it shall be required for that purpose." He added, however, that it was not likely that these islands would be needed as sites for batteries for many years, if at all. [After fifty years—in 1924, title was transferred to the Commerce Department – Bureau of Lighthouses, and later to the Coast Guard.]

In January 1873, Twelfth District Assistant Lighthouse Engineer E. J. Molera landed on East Brother to draw a detailed map of the island to forward to the board. Molera confirmed that there would be a problem getting enough fresh water to operate a steam engine for a fog whistle. Water would have to be shipped in or rainwater captured. This inspired Molera to propose to the Lighthouse Board his own design of a fog signal powered by compressed air instead of steam.

His plan called for excavating a 50-by-100-foot seawater reservoir in the middle of the island. A brass trumpet would then be fastened on top of a wooden platform above the reservoir. Seawater would be pumped into the reservoir by means of a "wave ram," a "tide mill," and an ordinary windmill. Exactly how all this would work is not clear, but the basic principle was that rising water level in the reservoir would compress air in a chamber to blow the trumpet.

Actually, the idea was not so far-fetched. In the 1860s Major Hartman Bache, then inspector for the same district, devised a fog whistle powered by compressed air from a natural blowhole above a sea cave. The signal ran for a number of years on Southeast Farallon Island and brought widespread acclaim to its inventor.

By 1873 steam whistles similar to those on locomotives and steamboats had come into common use as fog signals. Molera, however, compiled an impressive list of advantages his signal would have over steam whistles in addition to not requiring fresh water. It would not use any fuel and consequently there would also be less danger of fire—particularly hazardous on such a small island. It would require fewer people to operate and could be started instantaneously, unlike steam whistles, which required time for the boiler to build up pressure. Also, the trumpet sound would less likely be confused with the whistles used on passing steamers. Molera planned to fix a sounding board and reflector to the device to help give it an intensity "superior to any yet produced." The lighthouse would be located above the trumpet to help focus the sound horizontally. Apparently the impact of this on the keepers was not considered.

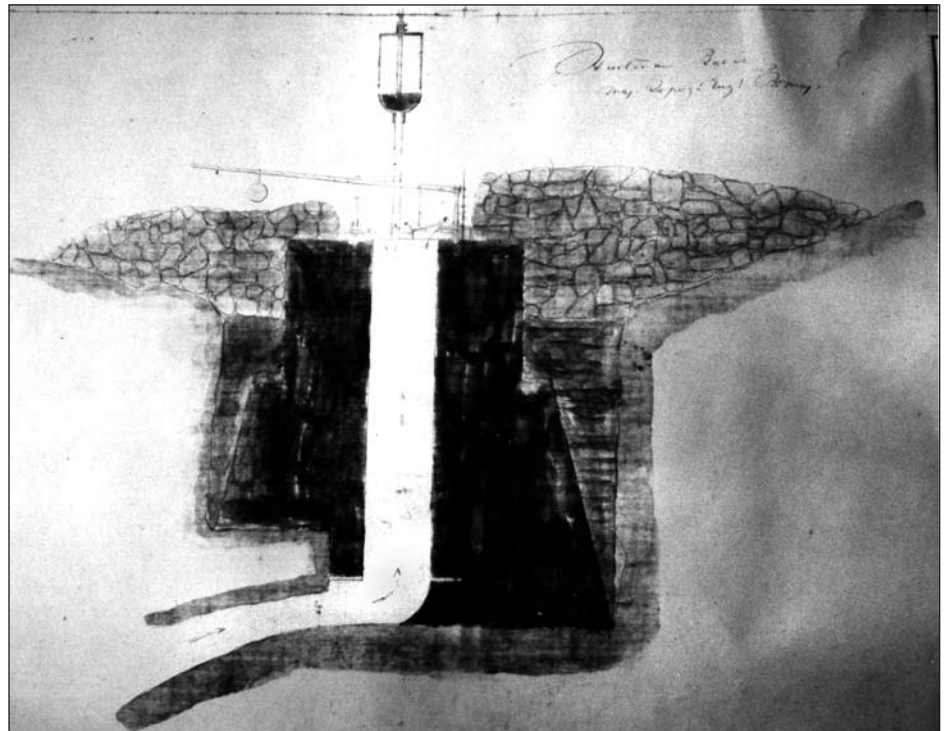
Molera waited anxiously for a response to his

proposal. In the meantime, on March 3, 1873, Congress appropriated an additional \$30,000 for construction of a lighthouse and fog signal for San Pablo Strait. In April the government withdrew its condemnation suit and proceeded with plans to erect the station on East Brother Island. Despite Molera's list of advantages, the Lighthouse Board did not implement his plan. It was untested and the delays in securing the site now left little time for such experimentation. Instead they decided to use the lighthouse plan already drafted (originally intended for Point San Pablo) and construct a steam-powered fog whistle on the island.

In May 1873, requests were sent out for bids to grade the site and build the lighthouse and fog signal building. On July 24 the firm of Monroe and Burns of San Francisco was hired for the sum of \$17,637.65.

The contractors immediately began blasting sandstone from the top of the island. Some of the sandstone was used to build a wall around the island's perimeter. More of the center of the island was then leveled and used to fill in behind the wall, thus creating about one-half acre of level ground for the station.

Several changes in the lighthouse plans were made to accommodate the new site. The front of the lighthouse was originally to face west towards the bay. It was made to face east



The wave-powered air whistle designed by Hartman Bache for the Farallon Islands and considered for the East Brother Station. U. S. Lighthouse Society photo.



The lighthouse was built of wood, but with an unusual feature. The spaces between the studs on the outside walls were filled with bricks mortared in place. This may have been to help insulate the building from the natural elements, or reduce the noise level inside from the fog signal. The brick may also have been used to increase the mass of the building—to make it more stable in high winds.

An additional contractor, E. M. Benjamin, was hired to build a cistern, rain catchment basin, wharf, tramway, boathouse, and out-houses. The lantern room, lens, and oil lamps were furnished and installed by the government. By February the lighthouse was nearly ready to send forth its first flashes. Keepers were hired, and a printed “Notice to Mariners” was distributed announcing that the light would go into operation the evening of March 1, 1874.

As the time of first lighting approached, one of the Lighthouse Service’s lampists, T. L. Winship, came to the island to instruct the keepers on the fine points of lamp care and operation. The apparatus was delicate and the lighthouse authorities wanted to make sure the new keepers knew how to make the many fine adjustments that assured the flame would burn steadily and at maximum brightness throughout each night. On March 1, as sunset approached, Mr. Winship, the keeper, and the two assistant keepers climbed the staircase to the top of the tower. The lampist then lighted the lamp for

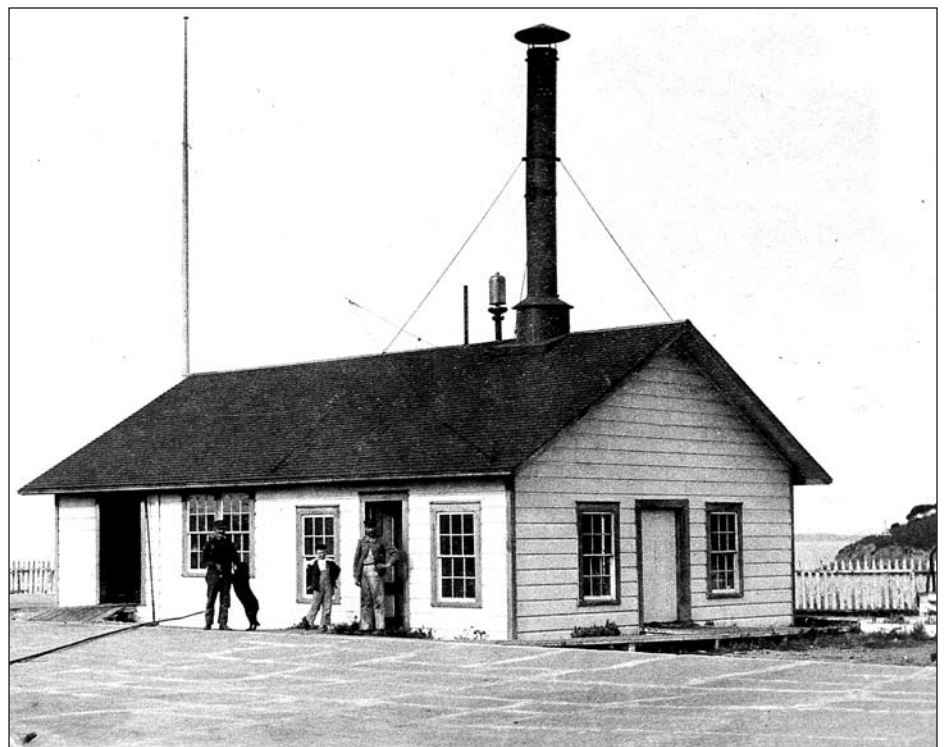
instead, towards the rest of the island. A two-room cellar originally planned was omitted.

The design for the lighthouse, rich in gingerbread and scrollwork, was typical of the 1860s and 1870s. The porches, wide overhangs, and sawn banisters were characteristic of the “seaside cottages” illustrated in architectural pattern books widely distributed at that time. The Lighthouse Board’s policy was to build simple and substantial dwellings that would be appropriate to the purpose yet in harmony with the prevailing local architecture. As with the first set of lighthouses built on the West Coast, the plans used at East Brother were also used, with modifications, at several other locations. In the early 1870s lighthouses similar in design to East Brother were built at Point Fermin, Point Hue-neme, and Mare Island in California, and at Point Adams in Oregon. Of these, only Point Fermin near Los Angeles stands today.

By the fall of 1873 the lighthouse foundation was in place and the walls were going up. It was basically a six-room dwelling, yet was intended as quarters for three keepers—two with families. It was definitely the kind of arrangement that encouraged one to try to get along with the neighbors. A bedroom and living room for the principal keeper were downstairs. Upstairs were another bedroom and living room. A third keeper lived in the garret, above the communal kitchen and dining room. Stairs inside and outside connected the two levels, and both levels had closets and storerooms.

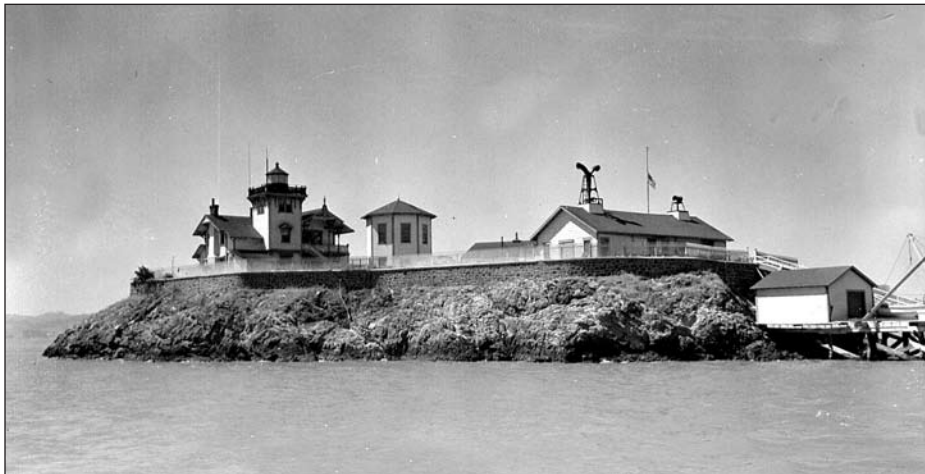
Above – East Brother Lighthouse circa 1900. The center of the islet is a concrete rain catchment basin. Water is drained into the cistern at left and then pumped into redwood storage tanks such as the one at right. Note the Victorian bird house by the water tank.

Below – The fog signal building as it originally appeared. The 10-inch 1st class steam whistle fog signal can be seen just left of the smoke stack. Both photos courtesy of the U. S. Coast Guard.



the first time, and the long-awaited beacon at last flashed its signal to passing ships.

The fog signal was also ready to operate, but there had not been enough rain to provide water for the boiler. This left the Twelfth District engineer, Lt. Col. R. S. Williamson, with a dilemma: should he postpone operation of the fog signal until the start of the next rainy season, or should fresh water be purchased and delivered to the island? Soon, however, the fog drifted in, giving him no choice but the latter. Perhaps he now had second thoughts about Molera's compressed-air trumpet! By April 9 enough water had been delivered to fire up the boiler and give the whistle a test blast. On May 1 it went into regular operation whenever there was fog.



The East Brother Station showing from right: second landing pier and boat house, fog signal building, cistern (note the false windows) and dwelling/tower. U. S. Coast Guard photo 1945.

Early Years at the Lighthouse

The first keeper appointed to East Brother Light Station was Samuel A. Farran. He served during the early years of the station with First Assistant John Cawley and Second Assistant P. Moran. Altogether eleven men served as principal keepers and twenty-five as assistant keepers (not counting substitutes) between 1874 and 1945. Some stayed only a few months, others for nearly twenty years. Not much is known of East Brother's early keepers, but surviving lighthouse records, instruction manuals, and journals paint a detailed picture of the routine of lighthouse life.

To be qualified for the job, keepers had to be able to read, write, and keep accurate records. They had to have enough physical strength and mechanical ability to maintain the buildings and equipment and make minor repairs. In the case of East Brother Island, they also had to

be able to row or sail a boat to and from shore. Their foremost duties were making sure that the light operated each night between sunset and sunrise, and that the fog signal operated in times of fog.

The nightly routine began at sunset when one of the keepers filled the lamp reservoir with special high-grade lard oil. He then used a small hand lamp to light the circular wick. The flame was positioned low at first so that the glass chimney would not crack from a quick change of temperature. It took half an hour to bring the flame up to its full height of 1-13/16 inches. On clear nights, the tiny flame could be seen a distance of 13-1/2 nautical miles. This distance was achieved due to the powerful lens that surrounded the lamp and focused the light

rays. The lens was actually made up of over fifty different lenses and prisms set in a brass framework. Although the flame burned continuously, the light appeared to flash because the lens focused the light into several separate beams, radiating outward horizontally like the spokes of a wheel. The lens rotated slowly on a vertical axis, powered by a clockwork mechanism. Mariners would see a flash every thirty seconds when a beam was cast in their direction.

The light was watched continuously each night, with the work divided equally among keepers. The keepers kept an eye on the light from the small room immediately below the lantern, appropriately called the watch room. Periodically, the keeper on duty cranked up the weight that powered the clockwork. He also had to wipe the glass panes of the lantern room regularly with dry towels to keep the glass free from moisture when the lens was in operation—a demanding chore in misty weather. At

sunrise the wick was turned down to extinguish the light and the apparatus readied for the next night.

Keepers took special care of the delicate lens. Early each morning the lens was cleaned with a feather brush to remove dust. It was then wiped with a soft linen cloth. Finally, it was polished with a buff-skin. If oil or grease was spilled on any part of the lens it was wiped off with a linen cloth moistened with "spirits of wine" [vinegar]. While working around the lamp and lens, keepers wore linen aprons to reduce dust and to prevent the lens from being scratched by wearing apparel and buttons. During the daytime, curtains were drawn in the lantern room to prevent discoloration of the lens by sunlight.

The type of lens then used at East Brother was called a Fresnel lens (pronounced fray-nell), named after the French physicist Augustin Jean Fresnel. He perfected the lens design in 1822 after being commissioned by the French government to devise a method of improving the lighting apparatus in lighthouses. Up to that time, parabolic reflectors, made of silvered metal, were placed behind lamps to focus the light—but with inadequate results. France quickly capitalized on Fresnel's marvelous invention and had virtually a worldwide monopoly on lighthouse lens manufacture through most of the 1800s.

Fresnel lenses were eventually constructed in nine sizes, the largest being a hyper-radial (8 1/2 feet in diameter), the smallest is a sixth-order. East Brother originally had a revolving fourth-order lens, which measured about thirty-three inches high and twenty-four inches in diameter. Lenses of the fourth-order and smaller were typically used in bays and harbors where a range of ten-to-fourteen miles visibility on clear nights was sufficient. First-order lenses, about 19 feet high, including the under carriage, were placed in coastal lighthouses where more powerful lights were needed. Some of these seacoast lights were designed to have ranges of twenty-five miles or more.

Fresnel's invention makes efficient use of the light by capturing up to eighty-five percent of the light rays that radiate downward or upward from the lamp and focusing them horizontally along a single plane. The lenses are so effective that they remained in use at many lighthouses through the end of the 20th century. In central California, Fresnel lenses have been in use continuously at the Point Pinos, Point Bonita, and Yerba Buena Island lighthouses since they began operation in the 1800s.

Another remarkable feature of these lenses is that they can be used to produce many different characteristics. In 1880, for example, the Lighthouse Board decided to change East Brother's light from flashing to fixed. Workmen replaced the rotating lens with a fixed fourth-order lens which produced a continuous beam of light in all directions. The board said only that "the change was desirable."

At the time the lens was changed, a new lamp was installed which burned kerosene. In the late 1870s and early 1880s nearly all United States lighthouses were converted from lard oil to kerosene, then termed "mineral oil." Kerosene not only cost less than lard oil, but the kerosene lamps burned longer on a given quantity of fuel. There was considerable expense in making the change, however, since new lamps had to be supplied to each station, and new containers had to be made for storing and transporting the more volatile fuel.

Besides tending the illuminating apparatus, the keepers also maintained the fog signal, located in the building at the east end of the island. The device was a simple steam plant, similar to that of a steamboat or locomotive. It consisted of a boiler with a firebox below where coal was burned. A small pipe supplied water to the boiler from one of the station's freshwater storage tanks. Steam was used to sound the

whistle, located on top of the building, and also to power a small piston engine beside the boiler. This engine regulated the timing of the whistle blasts and pumped more water into the boiler. Every twenty-four seconds a rotating cam in the engine alternately triggered blasts of four and eight seconds. Mariners could check the latest issue of *The Light List* to identify the station from the characteristic of either the light or the fog signal. [The *Light List*, published annually by the government since the mid 1800s, lists lighthouses and other navigational aids and their characteristics.]

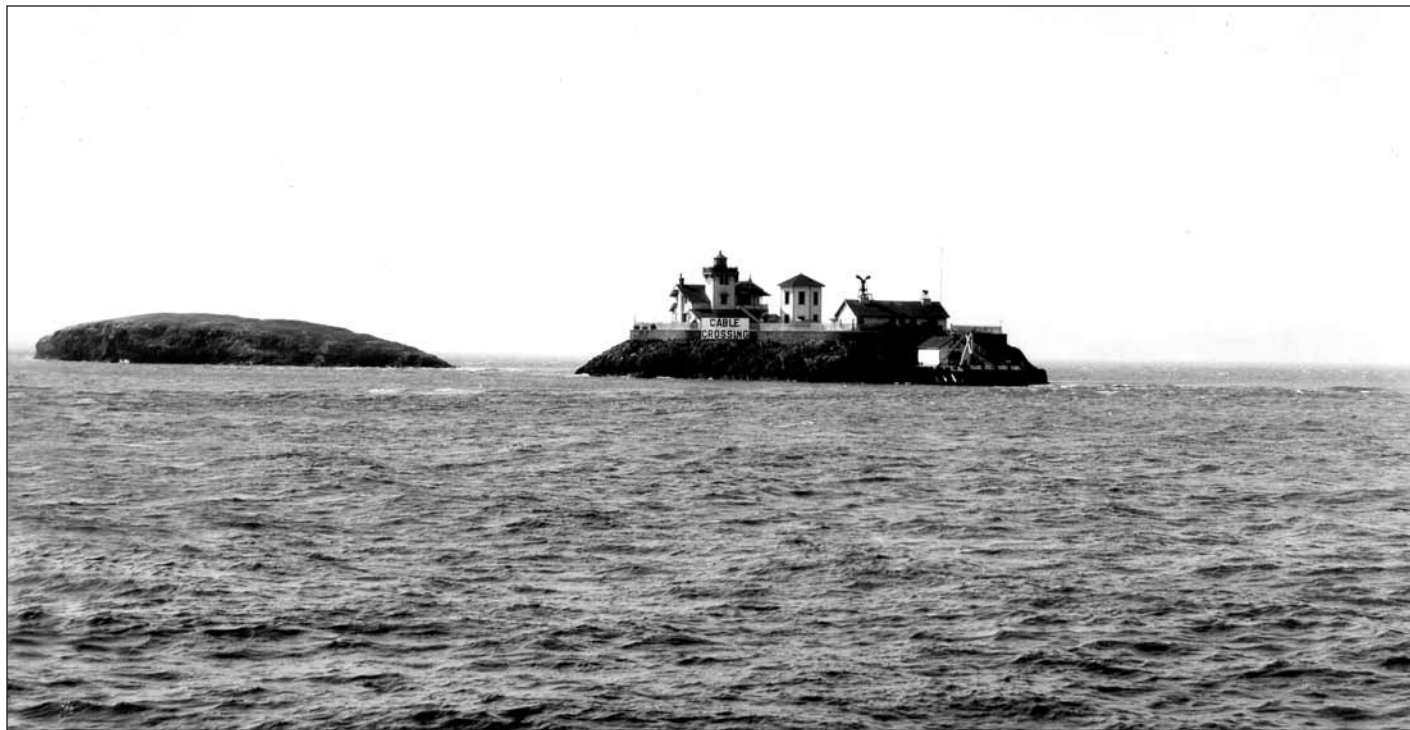
The whistle was sometimes more important in aiding mariners than the light. In dense fog or heavy rain East Brother's powerful light was virtually useless. The ten-inch whistle, on the other hand, could often be heard from ten or twelve miles away. Through the years many a ship captain groped his way across the misty bay waters guided only by the regular blasts of East Brother's fog signal. It took many years experience to learn to navigate in this way. Echoes off the surrounding hills could easily deceive the inexperienced ear as to the true direction of the signal.

Steam whistles were used at many United States fog signal stations in the late nineteenth and early twentieth centuries. However, they had some significant disadvantages. The engine needed constant oiling and tinkering, and, fre-

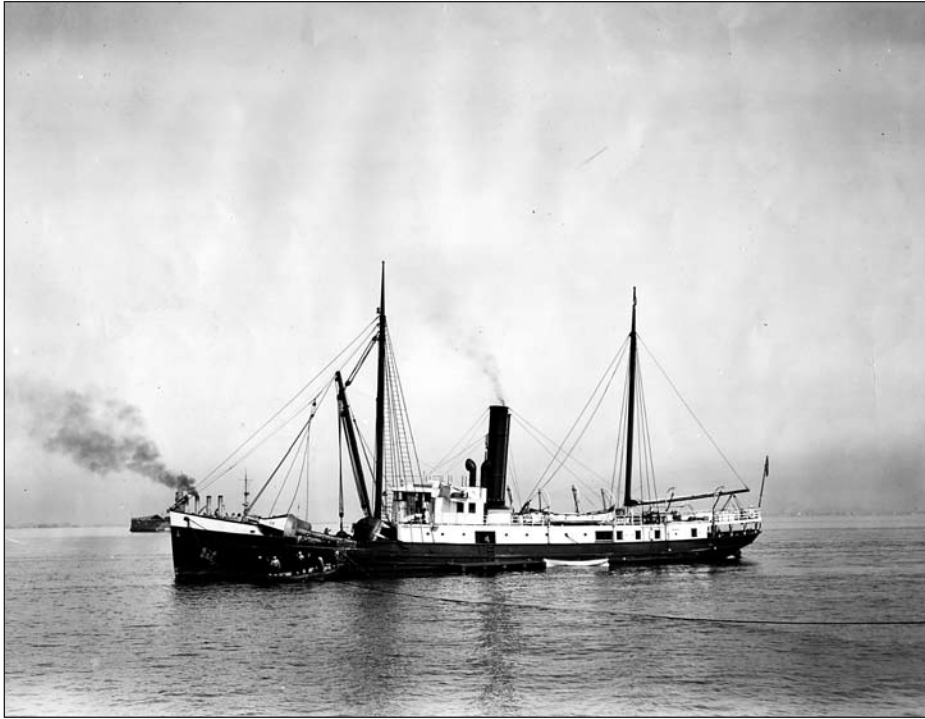
quent part replacement. Since the whistle might be put in operation night or day, off-duty keepers had to learn to sleep in spite of the noise. Some keepers apparently got quite good at this. The instruction manual supplied to keepers in 1881 stated explicitly: "Whenever the apparatus is in operation, a keeper must be in the engine-house, in charge, and awake."

It took about forty-five minutes to build up enough steam in the boiler to put the signal in operation. To compensate for this delay, a large bell was installed on East Brother in April 1878. If the fog came in suddenly, one of the keepers or a family member would strike the bell at fifteen-second intervals until the whistle could be sounded. When the signal was not in use, the firebox was kept loaded with coal, ready for lighting at a moment's notice. Deciding when to start the fog signal required much more judgment on the part of the keeper than when to light the lamp. Sometimes when fog started to come in, the boilers would be fired up, only to have the fog go out again. In general, when Red Rock, Point San Quentin, or The Sisters became obscured by bad weather, it was time to fire up the boiler.

Coal was used both as fuel for the fog signal boiler and for domestic use. In the latter case wood was also used. Several times each year one of the lighthouse tenders such as the *Shubrick*, *Madrono*, or *Manzanita* would deliver a



East Brother Light Station, looking north, with the West Brother islet at left. Across San Bablo Bay are two more islets; East and West Sister. U. S. Lighthouse Society photo, date unknown.



Lighthouse Service Tender *Madrono* in San Francisco Bay with a Navy cruiser just over the bow. U. S. Lighthouse Society photo, date unknown.

supply of coal to the station wharf. The keepers had to haul the ninety-pound sacks of coal up a tramway on a rail car then place them in the coal shed. The tenders often unloaded eight or ten tons, and sometimes even thirty or forty tons of coal at one time. Not surprisingly, keepers spent a good deal of time hauling coal. During fiscal 1900-1901 the signal alone consumed about forty tons—enough to operate some 252 hours that year. Actually, that was modest compared to other central California fog signals. Those at Point Montara, Point Bonita, and Point Reyes, often blasted away for over 1,000 hours per year.

The wharf at East Brother, originally located on the north side of the island, became a regular source of frustration. In the spring of 1875, only a year after the station began functioning, the wharf and tramway were badly damaged by heavy waves during a gale. According to keeper Farran, the “sea broke over the island.” Temporary repairs were made, and the following September more piles were driven. These were bound together with twelve-inch-square timbers. The wharf was also raised three feet, prompting the Lighthouse Board to boast that it was now “so strengthened as to withstand any ordinary storm.”

Apparently a subsequent storm in early 1880 was not ordinary. The wharf suffered major damage. Again it was repaired and lasted

another five years until February 10, 1885. That morning the crew of the lighthouse tender *Manzanita* planned to unload fifteen tons of coal for the station. They unloaded ten tons when suddenly the section of wharf supporting the coal gave way, dumping the coal into the bay. The soggy sacks of coal had to be retrieved at low tide. Later in the month a crew of carpenters repaired the damage.

In 1894 the wharf was declared unsafe—this time before it had a chance to collapse. The culprits were teredos—worm-like marine mollusks that bore into wood. A new wharf was built, sixty feet long and twenty feet wide, this time supported by paraffin-coated, steel-shod piles driven ten feet into the rock bottom.

Despite the romantic portrayal of lighthouse keeping in novels, poems, and art, the job was monotonous and the Lighthouse Board knew it. Pay was modest and much of the work boring. Nevertheless, the board did its best within budget to provide adequate accommodations and conveniences for keepers. It hoped to attract men of high caliber into the Service and encourage them to stay.

In 1874 the keeper at East Brother earned \$800 per year, paid quarterly. The first assistant earned \$600, the second assistant \$550. Actually this was reasonable pay at the time, especially considering that the job came with a place to live. However, salaries were not increased for nearly forty years.

For the intellectual benefit of keepers, in the 1880s the Lighthouse Board assembled portable lending libraries that circulated from station to station. Each came in its own combination bookcase and shipping crate and contained about fifty books. Included were novels, poetry, books on history and science, a Bible, and a prayer book. After several months, the library could be exchanged for another when the lighthouse tender came.



Visitors landing at the original East Brother north landing sometime prior to 1895. Official U. S. Coast Guard photo.

During the 1870s the keepers and their families at East Brother were provided with rations. These were delivered periodically by the tender—as was standard practice at many remote stations. In 1880 the Lighthouse Board decided East Brother was not sufficiently remote to warrant continuing this service. The keepers then had to row or sail to Point San Quentin or Point San Pedro to do marketing. This may have been for the best. The annual allowance per man for 1881, where rations were provided, was:

Pork	200 pounds
Beef	100 pounds
Flour	2 barrels
Rice	50 pounds
Brown sugar	50 pounds
Coffee (green grain)	24 pounds
Beans or peas	10 gallons
Vinegar	4 gallons
Potatoes	2 barrels

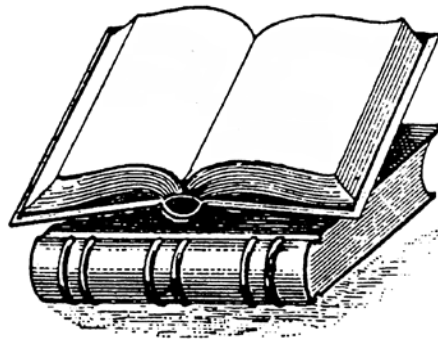
Not exactly the makings of a gourmet dinner! Keepers were instructed that the quantities could be changed, so long as the total cost of the rations was not thereby made greater. In the 1890s and early 1900s rations were again supplied to the island residents by the government, mostly as a supplement comprised of potatoes and onions.

Keepers had to be jacks-of-all-trades. Besides tending the light and steam whistle, they also cleaned the cistern and rainshed; repaired fences, windows and minor storm damage; built cupboards and tables as needed; and kept the boats in good repair. There was also painting—always painting—whether it was painting the tower, lantern room, fog signal building, boat, boathouse, their living quarters, or whatever. Many of the keepers liked to paint. Things always looked so much better with a fresh coat of paint, and applying it required neither great physical strain nor too much thought. In fact, by 1894 keepers at East Brother and other Twelfth District stations were apparently doing too much painting. Inspector Henry Nichols, annoyed by the “. . . excessive unnecessary use of paint at some stations,” ordered that henceforth no painting of any kind be done without his prior approval. At least for a while after that, keepers had to make written requests for paint including a statement of the work to be done, the amount of paint on hand, the estimated quantity of paint needed, and when the job was last done.

Such thrift was typical of the Lighthouse Service. Nothing was wasted. The coal sacks,

once emptied, were rolled up and returned to the tender for reuse. Oil cans and other containers were likewise used over and over. Before a new tool or container would be issued to a keeper, the old one had to be turned in, otherwise its cost would be deducted from his salary.

The keepers at East Brother were given a manual of instructions, which told in great detail everything they needed to know to run the station. It included diagrams of the lamp and fog signal with all the parts labeled. It covered instructions for mixing paint, cleaning brushes, and a recipe for whitewash. Lest they have any doubt when the lamp was to be lighted or extinguished, they were provided with a booklet of tables showing the exact times of sunset and sunrise for each day of the year for a particular location.



The principal keeper had the added chore of keeping records. Each month he submitted a report on the condition of the station to both the inspector and engineer; he also had to turn in a fog signal report and an absence report. Quarterly, he accounted for expenditures of oil and submitted vouchers for salaries. When necessary, the keeper filed returns for receipt of supplies delivered, any damage to the station, any unusual occurrence, and a shipwreck report. The keeper also maintained a daily expenditure book, a general accounting book, and a daily journal of events at the station.

The keepers' workload increased even more in the 1890s when several other government agencies requested assistance from the Lighthouse Service. The Census Bureau asked that keepers send in reports on fish and fishing observed in the area of their station. Soon keepers were also asked to file reports on earthquakes and to record rainfall.

Besides the routine jobs, the men also had to be prepared for the unexpected. They kept a close watch for vessels in distress and several

times rescued people from boats that capsized. When storms hit, East Brother's residents often had problems of their own. On a number of occasions one of the station's two boats was torn from its mooring and damaged or destroyed. Indeed there were times when nobody could get on or off the island because of rough water. On April 1, 1892, Keeper P. J. Quinlan left on what was intended to be a one-day trip to San Francisco. However, high winds and rough waters prevented his return for three days. On another occasion the same keeper returned to the island at 11:30 at night only to find the light out. The assistant, Martin Haave, had left the station in the other boat and capsized. He managed to stay afloat, but could not return to the lighthouse in time to light the lamp. This excuse must have satisfied the inspector, for the assistant stayed on for three more years.

Throughout East Brother's early history there were no major shipwrecks in the area—a tribute both to the men who designed and built the station's equipment and to the keepers who so carefully maintained it.

Pages from the Past

The bound journals kept by the successive keepers at East Brother Light Station chronicle over seventy years of daily life on the island. For the most part, keepers confined each day's entry to a single line, usually describing the weather and the day's work, but on some occasions elaborating. In reading the handwritten entries across the yellowing pages, one develops a sense of what it was like to live and work at this light station. A surprising amount of information lies in these pages: the accounts of ships in distress; the reports of the endless cleaning, repairing, and painting; the inspections; the arrival of coal and supplies; and the regular trips across the bay for mail and food. One wonders if the keepers ever considered that someone might read all this a hundred years later. We will never know.

In 1882 Charles F. Winsor was keeper; Joseph Page was first assistant. There are many clues in Winsor's writings about him and his assistant and how they lived. Some of the entries answer questions, others raise them. Many are redundant, but others unusual. Imagine it is July 1883, and that you are the inspector for the Twelfth Lighthouse District. Examine the journal entries for the past fiscal year and see what you can learn about East Brother Light Station and the men on duty there:

1882

- July 1 Wind S.W., strong. Cleaned up the engine and about the house.
- July 2 Wind S.W., strong. Sunday.
- July 5 Wind S.W., light. Mr. Page took quarterly, monthly and annual returns to San Quentin. Laid platform on tank.
- July 8 Wind S., light, smoky and hazy. General cleaning and washing, etc., etc.
- July 10 Wind S., strong, smoky and hazy. But little done.
- July 14 Wind S.W., strong. Mr. Page left for San Quentin A.M., capsized off the buoy near the West Brother at 12:15 P.M. Capt. Winsor hailed the Steamer *Reform* passing up at the time and sent her to his relief. The *Reform* picked him up 1/4 of a mile N.N.E. of the Light House and landed him and the boat at the dock at 1:15 P.M. Oars, rudder, mail and all the marketing – consisting of mutton, cabbages, peas, etc., etc., lost, also milk and can.
- July 15 Wind S.W., strong. Fitted rudder temporarily to boat.
- Aug. 9 Wind S.W., strong and hazy. Manzanita came at 10:45 A.M. Comd. Coffin and Capt. Payson landed then proceeded to Mare Island to attend the funeral of Rear Admiral McDougal. [David McDougal, former commandant at Mare Island.]
- Aug. 14 Wind S.W., strong, cloudy and hazy. Mr. Page repairing sail to boat. L.H. Depot boat 76 landed yearly supplies and 6 sacks coal/soft.
- Aug. 16 Wind S.W., strong, cloudy and hazy. Mr. Page to Pt. Pablo for drift[wood] on the beach.
- Aug. 21 Wind S.W., strong, hazy. Painted rail around top of tower.
- Aug. 22 Wind S.W., strong, hazy. Cleaned engine and oiled same, also pump.
- Aug. 23 Wind S.W., strong, hazy. Mr. Page went for vegetables and butter to Point Pedro.
- Aug. 24 Wind S.W., strong, hazy. Building tables and bunks. Repaired drill.
- Sept. 4 Wind S.S.W., smoky and hazy. Waiting for Engineers—Mr. Shaw and 3 men at 2 P.M.
- Sept. 5 Wind S.S.W., light, smoky and hazy. At work on watershed. [A concrete rainshed was built to replace the original asphalt shed.] Mr. Page gone to San Quentin for a week.
- Sept. 6 Wind S.S.W., smoky and hazy. Sch. *Cecilia Maria* arrived with 40 tons gravel at 2 P.M.
- Sept. 12 Wind S.S.W., foggy at 4 A.M. 'till 10A.M. Men at work on shed. Mr. Page picked up a shift.
- Sept. 28 Wind S.W., light, smoky and hazy. Finished watershed and commenced on dome of tank. *Manzanita* anchored [off] W. Brother.
- Oct. 4 Wind N.E., clear. Mr. Page went to San Quentin for Mr. Smith to serve as assistant during his absence.
- Oct. 9 Wind N.E., cloudy. Mr. Smith went for boatload of soil Pt. Pablo. Finished steps and repaired fence.
- Oct. 11 Wind N.W., clear. Repairing fence and railway track.
- Oct. 15 Wind N.W., clear. Sunday. Beautiful day.
- Oct. 31 Wind N.W., light, later part strong. *Manzanita* passed at

9 A.M. and anchored off the sisters to buoy a sunken wreck.

- Dec. 14 Wind N. E. Foggy from 4 A.M. to 10 A.M. Mr. Page went to San Quentin for mail, returned as usual, drunk.
- Dec. 16 Wind N.E., light. Foggy from 5:50 A.M. to 12 noon. Fog very dense 'till 11 A.M. Cleaned boiler at noon. A large four masted ship ashore about 1/3 dist. from Point Pedro to Marin Islands. Two tugs took her off at 4 o'clock P.M. and proceeded towards S. Francisco.
- Dec. 20 Wind N.E., clear. Painted over water spouts around the house. Comd. Coffin and Captain Payson, L.H. Engineer, landed at 10 o'clock P.M. and made an inspection.

1883

- Jan. 2 Wind S., light, hazy. Mr. Page took the mail over to San Quentin, returned drunk.
- Jan. 11 Wind N.E., cold, light, foggy. Mr. Page went for the mail, returned at 2:30 P.M., drunk, mail wet.
- Jan. 19 Wind N.N.E., commenced blowing at 2 o'clock A.M. Noon, blowing a gale and a heavy sea running over the wharf at 3 P.M.; washed away the lower portion of steps.
- Jan. 22 Wind N.N.E., fresh, very smoky all day. Cold, 40 [degrees].
- Feb. 7 Wind N.E., light, foggy. *Manzanita* landed at noon 6 tons H, 4 tons S coal.
- Feb. 8 Wind N.E., light, clear. Mr. Page went for mail and stores, drunk, no mail.
- Feb. 9 Wind N.E., light, clear. Hauled up the hard coal and stored it away, also the wood, 1 cord.
- Feb. 10 Wind N.E., light, clear. Mr. Albert Tippet entered on his duties as assistant (1st) at this station.
- Feb. 14 Wind S.W., squally, strong. Employed all day cleaning engine room and lens in lantern.
- Feb. 21 Wind N. E. light, clear. Painted lantern and floor, front-hall stairs, back porch and front porch.
- Mar. 10 Wind S., light, foggy. Kept fires banked 'till 12:30.
- April 8 Wind N.W., strong, clear. Sunday. Cleaning and washing lens in tower, badly smoked.
- April 12 Wind N.W., strong, squally. Mr. Tippet started for San Quentin and put back, too rough.
- April 13 Wind N.E., clear. Between 8 and 9 o'clock P.M. a steamer passed by and sounded three whistles. As no answer was sounded from the bell, I call to Mr. Tippet to reply. But he was not satisfied that the whistle was for the station and the boat was so far away by the time I could satisfy him by explaining, she was beyond hearing.
- May 29 Wind S.W., strong, hazy. Mr. Tippet went to S. Quentin to consult the doctor.
- June 2 Wind S.W., strong. *Manzanita* landed supplies for year coming July, 1883. Inspector on board. Delivered Library No. 35.
- June 6 Wind N.E., light, clear. Thermometer 95 [degrees] in the shade.

The Stenmark Era

e register of keepers at East Brother kept during the late 1800s reveals that well over half were European immigrants. There were natives of Denmark, Sweden, Norway, England, and several from Ireland.

John O. Stenmark, who was appointed keeper in 1894, was a native of Sweden and was assisted at the station until 1901 by Another Swedish immigrant, James Anderson. Thanks to old newspaper clippings, photos, and other records kept by Stenmark children and grandchildren, more is known about him than about most of the East Brother keepers.

Stenmark was born in 1865 and emigrated to the United States at age twenty. In 1858 he joined the U.S. Lighthouse Service. His first appointment was working as a crewman aboard the lighthouse tender Madrono. At that time equipment and supplies for most lighthouses were delivered by ship. The 180-foot-long Madrono had a crew of nineteen and steamed about 10,000 miles each year servicing lighthouses and buoys throughout California. The lighthouse inspector was usually on board to deliver the keepers' pay and to inspect the station. It was while Stenmark was helping unload supplies for the Point Conception Lighthouse that he saved the life of Inspector Thomas Perry

Point Conception stands out as the most pronounced point along the California coast. Consequently, seas there can be particularly rough. Stenmark and some of his fellow crewmembers were trying to get a small boatload of supplies to shore from the tender. Suddenly, a rough wave capsized the boat, dumping the men and supplies into the water. Perry was carried helplessly away by the heavy seas and was soon in serious trouble. The other crewmembers clung fearfully to the capsized boat as young Stenmark, bleeding from a cut on his head caused by a breaking oar, swam towards the inspector. Just as the inspector was about to go under, Stenmark reached him and struggled unsuccessfully to swim to shore, holding the officer's head above water. Both men nearly drowned before finally being rescued by the tender.

John Stenmark was highly commended for his bravery. As a reward, on August 1, 1890, he was appointed assistant keeper at A o Nuevo Island Fog Signal Station. Located forty-five miles south of San Francisco, the island supported a twelve-inch steam fog whistle and a small lens-lantern for a light. Although an

improvement over life on the lighthouse tender, conditions on the tiny island were far from ideal. Stenmark and his wife, Breta, shared with the principal keeper a tiny cottage that had been partitioned into two living areas. The island residents could only get to and from the island by rowboat. Navigating through the surf, while trying to avoid the rocks around A o Nuevo Point, always made crossing the half-mile channel dangerous. In 1883 four men, including the keeper and assistant, drowned while trying to make the crossing.

Stenmark must have been an able assistant, for in 1892, when keeper Henry Hall was transferred, Stenmark was appointed keeper at A o Nuevo. He continued helping others, several times rescuing fishermen whose boats capsized near the island. In 1894 the Stenmarks' first daughter, Annie, was born at A o Nuevo. Three months later John Stenmark was transferred to East Brother and the young family set up housekeeping on San Francisco Bay. The island was smaller, but the house was bigger, and bay waters usually calmer. The Stenmarks quickly grew to like their new home and stayed almost twenty years.

Mr. and Mrs. Stenmark made the most of the small piece of land. They brought soil from the mainland and grew vegetables in a tiny garden in front of the lighthouse. They raised goats, pigs, rabbits, and chickens in pens.

During his first few years as keeper, Stenmark, like his predecessors, rowed the 2-1/2 miles to Point San Quentin to do shopping and get mail. Prior to the birth of each of his two sons he rowed all the way to San Quentin and back – to fetch the doctor.

The Stenmarks had four children: Annie, Ruby, Phillip, and Folke. For several years when the children were young the government paid for a teacher to live at East Brother part of each year and tutor the children. Later, when a road was built from Point San Pablo to the town of Point Richmond, the children attended school there. By that time, mail and provisions were picked up at Point Richmond instead of Point San Quentin.

Daughter Annie lived for the first twenty years of her life on the island until she met and married Charles Morissette. Morissette worked a short distance from the lighthouse at the Standard Oil refinery. "My hubby, Charlie, used to come courting to the island," she recalled fondly in later years. "He couldn't row very good at first, but we soon taught him." When the couple got married in June 1914, the newspaper announced:



It's party time at East Brother, or perhaps this is Annie and Charles Morissette's wedding of June 1914. U. S. Coast Guard photo, date unknown.



An East Brother Lighthouse keeper in the station rowboat. U. S. Coast Guard photo, date unknown.

Cupid Ends Lighthouse Romance

A romance that had its beginning beneath the tall, gray tower of the Brothers Lighthouse, located [off] Point Orient, culminated in a happy marriage at Oakland yesterday when Charles Morisette, a foreman at the Standard Oil wharf, claimed Miss Annie E. Stenmark as his bride.

Miss Stenmark is the daughter of John O. Stenmark, lighthouse keeper [off] that point, and it was while assisting her father about his duties of caring for the great white light that flashes across the treacherous waters of the upper San Pablo Bay that she became acquainted with Morisette.

Despite living on an island, the Stenmarks had many friends in the surrounding bay area. They sometimes entertained as many as fifty friends and relatives at the lighthouse. On the occasion of their nineteenth wedding anniversary, the local newspaper described the gathering: The guests were carried across to the light house from Bailey's wharf in row boats, and as the bay was calm everyone enjoyed the trip immensely.

The rooms were very prettily decorated for the occasion and the evening was spent with music and dancing. Dainty refreshments were served at the proper time, after which hearty congratulations and best wishes were extended to the host and hostess.

John Stenmark retired as keeper of East Brother in July 1914. The family moved to Richmond, where they owned and operated the Stenmark Hotel on Fifteenth Street. Stenmark died only a year later in 1915 while on board the steamer, City of Topeka, traveling up the coast from San Francisco.

East Brother Light Station benefited from numerous improvements during the two decades Stenmark served as keeper. The lighthouse and fog signal gained renewed importance following construction of the Standard Oil refinery in Richmond in 1901. Docks for tankers were built along the San Pablo shoreline only a few hundred yards from the station. In 1909 the California Wine Association also established its huge aging and bottling plant just south of Point San Pablo. The plant had a storage capacity of 12 million gallons and an 1,800-foot wharf where grapes were unloaded and barrels of wine shipped out. With these and other developments, the town of Richmond ballooned in population from 200 in 1901 to 23,000 by 1917.

One of the first improvements to East Brother during this era was the erection of a 25,000-gallon freshwater storage tank in April 1896. Later, two more tanks were built: a 20,000-gallon tank in 1903 and an 8,000-gallon tank in 1910. Using the steam engine from the fog signal, and an array of pipes, Stenmark could pump water from the cistern up into the tanks or vice versa. This was particularly

helpful in September when he had to drain the cistern for annual cleaning.

Rainwater was not only collected from the concrete rainshed in the middle of the island, but also from the roofs of all the buildings. The system was (and is) extremely effective, capturing 5,000 gallons from a single inch of rain. Coming from the sky, the water should have been pure and clean. At that time, however, the roofs of the buildings at East Brother and other light stations were painted with red lead paint. This prompted the Lighthouse Board to include the following caution in its Instructions to Light-Keepers:

Water contaminated with chloride of lead . . . does not lose its poisonous qualities either by boiling or by exposure to the air.

To purify this water, and render it perfectly fit for all culinary and domestic purposes, it will only be necessary to put some powdered chalk or whiting into each cistern in which such rain water is collected, and to stir it up well, occasionally, after rain has fallen.

In July of 1903 a new wharf was built since the existing wharf had again become unstable. Instead of tearing down the wharf on the island's north side, it was simply abandoned and a new wharf was built on the east side of the island where the landing is located today. The new wharf included a derrick, boathouse, two staircases down to the water, and a tramway up to the island. This location enabled use of a steam-powered winch in the fog signal building to haul up shipments of coal and other supplies from the dock.

The new winch was soon put to good use. In February and March 1906, workmen built a new concrete rainshed to replace the one laid in 1882. It was a huge task. Tons and tons of sand, gravel, and cement had to be hauled to the island by ship, unloaded onto the wharf, and winched up the tramway on a small railcar. The rainshed took a month to complete, but when it was finished Stenmark concluded it was the "best cement job ever laid."

Less than a month later the new concrete work and all the island structures were tested by the most infamous earthquake in California history. On April 18 John Stenmark wrote in the journal: "A heavy earthquake this morning at 5:15 A.M. Lenses of the light broken and glassware broke and everything of glass broke. Doors open of themselves and the whole island rocking. All the lenses broke." There were no reports of significant structural damage to the station but extensive repairs had to be made to

the Fresnel lens. Over the next two days the Stenmarks gazed across the bay as fire consumed San Francisco. During the day billows of black smoke rose from the southern sky. At night the sky turned orange as the flames devoured block after block. "S.F. burning fearfully at 9 PM.," Stenmark wrote on the evening of April 19. The following night he and the others on the island could see the fire move toward Black Point.

A little over a year later the station was again shaken, this time by a ship. At half past two o'clock on the morning of June 13, 1907, the steamer A. C. Freese approached the quarter-mile-wide channel east of the lighthouse. It came from the north, towing another steamer, the Leader, and two barges. As the A. C. Freese steamed through the channel the Leader was caught by the currents, drifted toward the island, and struck the wharf. The steamer knocked the entire wharf askew, snapping piles, and knocking the boathouse off its foundation. On impact the two five-inch towropes snapped like pieces of string. Stenmark, hearing the collision, raced down to the wharf and boarded the vessel. The only crewman on board admitted that he and the man on one of the barges had been asleep when the boat struck. The frustrated keeper was unable to find out the man's name, but recorded the names of the boats. They were owned by the California Navigation and Improvement Company of San Francisco, which was eventually held responsible. In July the Thompson Bridge Company was hired to build a new wharf at a cost of \$1,600.

At the time of the Leader collision several more improvements were being made on the island. To reduce the danger of fire, a small oil house was built to store kerosene. It was constructed of concrete and located just east of the storage building. A new walkway was also constructed to the signal building.

Late the following year the lighthouse was extensively remodeled. A crew of workmen spent three months painting, plastering, fixing gutters, replacing part of the foundation, and raising the roof of the room over the kitchen. The inside stairway was removed to create an additional room for the assistant keeper, and the outside stairway was relocated to the front of the lighthouse.

Ever since the lighthouse first cast its rays upon San Francisco and San Pablo bays, the light had come from oil wick lamps, first burning lard oil and then kerosene. In June 1912, the wick lamp at East Brother was replaced by an

incandescent oil vapor lamp (I.O.V.). This lamp was also fueled by kerosene, but the kerosene was forced under pressure into a vapor chamber. There it vaporized and passed upward to the mantle where it was ignited, burning as a brilliant ball of glowing gas. It worked much like the Coleman lamps used today by campers.

An I.O.V. lamp was first introduced at a lighthouse in France in 1898. The first installation at a U.S. lighthouse was in New Jersey in 1904. Proving to be much more powerful than wick lamps, this type of lamp was soon installed at most of the important United States lighthouses. By 1912 East Brother was one of twenty-seven lighthouses in California utilizing the new device.

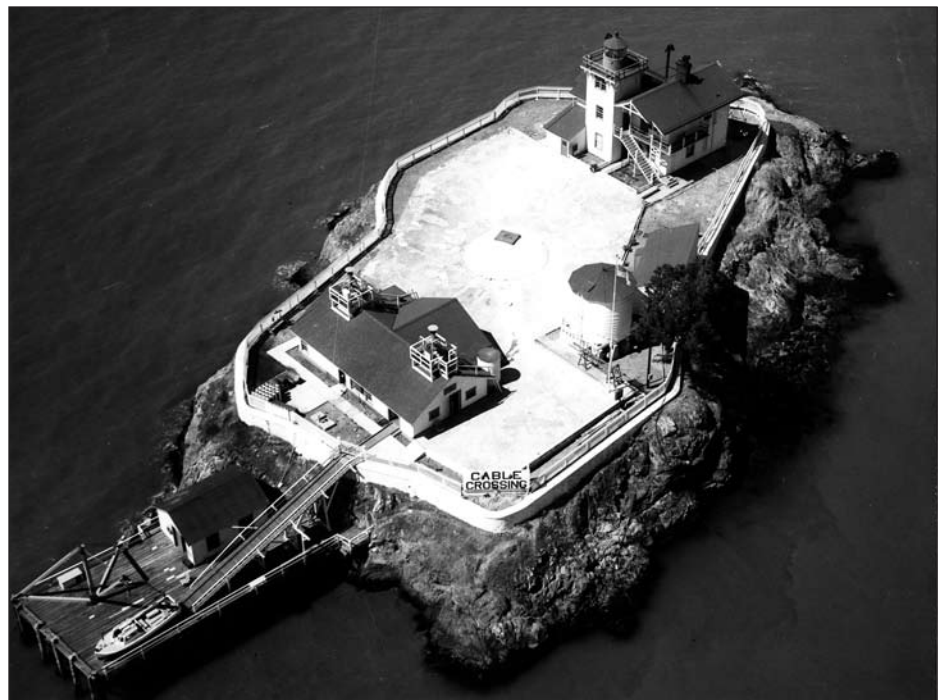
When the new lamp was installed the characteristic of the light was changed from fixed to occulting so that it would less likely be confused with lights on shore. The light was termed occulting rather than flashing because the period of light was longer than the period of dark—in this case, light, 7-1/2 seconds; dark, 2-1/2 seconds. To produce the new characteristic yet avoid the high cost of a new lens, lighthouse engineers cleverly modified the old lens by replacing one of its four lens panels with an opaque screen and remounting the lens so that it would rotate on its axis. A clockwork mechanism similar to that used earlier in the station's history powered the lens, rotating it once every

ten seconds. The screen blocked out the light for a quarter of the ten-second rotation.

The new lamp and lens combination produced a light rated at 2,900 candlepower as compared to only 520 candlepower before. Another benefit of the I.O.V. lamp was that it used less fuel. The only disadvantage was that it was often temperamental. After the lamp was installed, it took Keeper Stenmark several days to get it to function properly. After that it still seemed that some part of the apparatus had to be fixed nearly once a week.

Later Years at East Brother

In 1910, the Lighthouse Board was replaced by the Bureau of Lighthouses, which was under the U.S. Commerce Department. Back in 1852, at the time the Lighthouse Board was created, America's lighthouse system was of a size that allowed improvement and management by a committee of men of diverse backgrounds. By 1910, however, the agency had grown so large that the committee approach was abandoned in favor of an administration headed by a single individual. For most of its twenty-nine-year existence the Bureau was headed by George Putnam, Commissioner of Lighthouses. Putnam was a civilian, had worked for the Coast Survey, and was a skilled administrator.



East Brother Island in 1959. The landing pier is now on the east side, the fog signal building has been expanded on the south and west sides and supports the two mushroom trumpets of the diaphone. Official U. S. Coast Guard photo.

The Bureau of Lighthouses was entirely a civilian agency and operated that way until 1939, when its duties were transferred to the U.S. Coast Guard. When the Bureau was formed, some of the men who had risen through the ranks as assistants and keepers were promoted to inspectors. They replaced the naval officers who had supervised each lighthouse district under the Lighthouse Board. Civilian engineers, draftsmen, and mechanics were also employed. The Lighthouse Service now relied more than ever on men who had decided to make the Service a career. One such man was John P. Kofod.



Standing, left to right: Anna Kofod, the assistant keeper's daughter and Mrs. Luft, the keeper's wife. Sitting, left to right: Keeper Herbert Luft, Metha Kofod, the assistant keeper's wife, and Assistant Keeper John Kofod, at Yerba Buena Island Light Station, about 1906. Photo courtesy of grandson Walter Fanning.

John Kofod became keeper at East Brother July 25, 1914. He had joined the Lighthouse Service in 1899 as third assistant keeper at Point Sur. He then served at Point Reyes and later moved to Yerba Buena Island. With the transfer to East Brother came a promotion to keeper. Kofod and his wife made the move to East Brother with their furniture and belongings on board the lighthouse tender *Madrono*.

Kofod was born in Copenhagen, Denmark, in the early 1860s and came to the United States as a young man. After arriving in New York, he took a ship to Panama, traveled across the isthmus by railroad, and then sailed up the West Coast to San Francisco. There he met Metha Jorgensen, also a Danish immigrant, whom he married in 1886. Kofod worked as

a glazier, specializing in stained-glass windows for churches. It was during a slump in this trade that he decided to join the Lighthouse Service.

Walter Fanning, grandson of John and Metha Kofod, remembers well his visits to the island as a child during and just after World War I. He recalls that, during the war, victory gardens were promoted just as in World War II. "My grandfather hauled soil in five-gallon kerosene tins from the mainland to the island, forming beds between the watershed and the outer fence. He couldn't use the scarce fresh water so he carried bath and wash water to his

vegetables." The Kofods also raised chickens that they kept in pens outside the main fence at the island's west end.

The keeper liked to go fishing and, of course, did not have far to go. "Striped bass were caught on lures drifted from the wharf on the incoming tide and by trolling from boats," recalls his grandson. The excess bass caught each fall were salted down in wooden casks, providing almost a year-round supply. From the station wharf young Fanning liked to catch rock cod and perch. These his grandmother would cook for dinner.

Fanning also recalls the heavy ship traffic at that time:

The Monticello line between Vallejo and San Francisco passed each way just about

hourly. The *Delta Queen* and the *Delta King* made a trip a day, and there were many stern-wheeled freight carriers.

Dozens of scow-schooners carried hay and grain from the central valley to the bay cities. The collision between the *Monticello* steamers *Sehome* and *General Frisbie* just north of the island in December, 1918, was a memorable event. The *Sehome* sank, and a deck house drifted down to the island and was made fast in the little cove on the west side. It broke away before anything could be done with it.

As children, Walter Fanning and his sister liked to go into the fog signal building, particularly on cold days. "It was warm from the two boiler furnaces and smelled pleasantly of steam and hot oil." Their grandfather or the assistant kept close watch over the gauges, shoveling in coal when the pressure dropped, raking out coal if the pressure grew too high. The coal was piled in the north room of the signal building beside the winch and tram car. There was also a well-equipped tool room in the building with tools neatly mounted on wall brackets. "They were beautifully maintained and never used," says Fanning. "My grandfather had tools of his own."

John Kofod moonlighted for a short time during the war, working in the Standard Oil Refinery a few days each week. The government permitted keepers to have a spare-time job so long as it did not interfere with their lighthouse work. Kofod was transferred to Yerba Buena Island as keeper in 1921. He retired from the Lighthouse Service in 1929.

In 1922 Willard Miller was appointed keeper at East Brother. He served on the island for over nineteen years—nearly as long as John Stenmark. He was a quiet, modest man whose calm demeanor belied the daring experiences of his younger years.

The story of Miller's background comes mostly from Jack Lewis, nephew of Earl Snodgrass (Assistant Keeper, 1936-1943). Mr. Lewis helped his uncle and the keeper with chores around the light station as a young man and knew both men well.

Willard Miller was born in Nova Scotia in 1877 and was the son of a shipbuilder. When he was only fourteen, he stowed away on one of his father's ships. He was at sea for quite some time, was shipwrecked, and had to survive on an island for several weeks until rescued.

Miller joined the U.S. Navy in 1898 and was sent to Cuba to fight in the Spanish-American War. He was placed in command of a crew

aboard a small steam launch dispatched from the U.S.S. Nashville. Their assignment was to cut a marine telegraph cable at the port of Cienfuegos, Cuba. He displayed extraordinary bravery and coolness throughout the mission, despite heavy fire from shore batteries. The following year he was awarded the Congressional Medal of Honor for his bravery. The keeper was not one to brag, as revealed by Jack Lewis's recollections many years later. "I stumbled onto the fact that he held the medal and the deed behind it by accident, and I had to wring the story out of him."

Miller left the Navy in December 1908 and joined the Lighthouse Service the following year. Before coming to East Brother he served at the Los Angeles Harbor Lighthouse located at the end of the San Pedro breakwater, and later at Roe Island in Suisun Bay.

For the first dozen years that Keeper Willard Miller was in charge of East Brother, the station operated much as before. The keeper and his assistant kept the oil vapor lamp burning each night from sunset to sunrise and fired up the steam whistle when the fog came in. As an economy measure, use of the steam whistle was discontinued annually from April 1 to September 30 beginning in 1925 (there being little fog during those months). When fog did occur during this period, the bell was rung, automatically every fifteen seconds with a hammer powered by clockwork.

The most significant changes at East Brother while Willard Miller was keeper came in 1934 with electrification. In March of that year electricians arrived to wire the lighthouse for both domestic and navigational lighting. Over the next four months crews of workmen installed a new light and lens, replaced the steam fog signal with a diaphone, laid a concrete floor in the fog signal building, and installed an underwater electric cable between the island and Point San Pablo.

During the 1920s and 1930s all but the most remote of this nation's lighthouses were converted to electricity. At East Brother the rotating fourth-order lens and I.O.V. lamp were replaced by a fifth-order fixed lens with a 500-watt light bulb. The new outfit was rated at 13,000 candlepower. An electric timer turned the light on and off, producing two flashes of two-second duration every ten seconds. The device substantially reduced the keepers' nightly chore. Though few people realized it at the time, this was a major turning point in the station's history and one that would someday lead to complete automation.

The diaphone fog signal was put into commission June 20, 1934. A Canadian invention, the diaphone was first introduced in the United States in 1915 and by the 1930s had come into widespread use here. The two-tone sound was produced by compressed air operating a reciprocating piston. It was superior to the steam whistle in that it was less likely to be mistaken for a ship's whistle. Another advantage was that it only took a few minutes to build up sufficient air pressure to operate. Keepers, of course, liked it because they did not have to shovel coal.

John S. Conway, in his 1923 book *The United States Lighthouse Service*, described the diaphone sound as ending "with an abrupt roar." Lighthouse Commissioner George Putnam described it as ending with a "distinctive grunt." Visitors to East Brother today can make up their own mind how best to describe it. Everyone agrees on one thing, however: it is loud! Large diaphones have reportedly been heard a distance of twenty-five miles, though their normal range is four or five.

The diaphone at East Brother was originally installed with an electric motor to power the air compressor. A timing device triggered three-second blasts every twenty seconds. In case of a power failure, the compressor could be operated with a backup gasoline engine. If the diaphone itself malfunctioned, an electric oscillator was sounded. Both the light and the oscillator could be run by a gasoline-powered electrical generator in the fog signal building. In later years the oscillator was replaced by a duplicate diaphone to be used in the event of breakdown.

The backup systems usually had to be put to use several times each year. Ships sometimes dragged their anchors through the east channel, damaging or severing the power cable. When Miller spotted a ship doing this, he would shout warnings from the station wharf. On several occasions the cable was disconnected while the channel was dredged. One night while the cable was disconnected, the backup generator failed. Miller had to quickly place an emergency gasoline lamp in the lens.

During the last six years Willard Miller was keeper, he was assisted by Earl Snodgrass. Earl and his wife, Lillian, moved to East Brother in November 1936. Like the keeper, the new assistant came to the job with many years' seafaring experience. He served in the Navy during World War I and afterwards worked on a tug hauling logs in Tillamook Bay, Oregon.

He eventually saved up enough money to buy his own boat, the *Rustler*. He made his living with the *Rustler* by towing, ferrying passengers, and picking up crabs from commercial fishermen and delivering them to Tillamook markets.

Earl Snodgrass first entered the Lighthouse Service in 1927. As was typical, his first assignment was to a remote station—Southeast Farallon Island. He and his wife stayed there about three years until he was transferred to the lighthouse at Table Bluff, overlooking Humboldt Bay. Snodgrass then quit the Lighthouse Service to accept a more lucrative job piloting boats for the Cogshaw Launch and Towboat Company. He stayed with them at Humboldt Bay for several years, finally returning to the Lighthouse Service and accepting the assignment to East Brother Island.

The assistant keeper applied his extensive experience with boats to build the first inboard motorboat used at East Brother. With its powerful Briggs and Stratton engine, it could easily buck the swift currents around the islands. Docking, which was done on the north side of the wharf, was often tricky. In his eight years on the island, Snodgrass erred just once in this regard. The rowboat he was operating hit the pilings and was caught by the strong tidal current. The boat capsized, dumping Snodgrass, his dog McGregor and the groceries into the drink. McGregor jumped quickly onto the dock and waited patiently for his master, who had to shinny up one of the pilings. The groceries were a total loss but, fortunately, the upside-down boat was held against the wharf by the currents and did not sink.

In 1973 Jack Lewis wrote down some of his reminiscences and anecdotes of life at East Brother light station while manned by Willard Miller and his uncle:

Every March was painting time. The entire station was painted inside and out, buff and white. You had no choice of décor, but the paint was free, and you used it profusely. Willard liked to paint the tower. He would rig a line from the tower, and when he wanted to come down he would slide down the rope and swing onto the second floor porch.

Each fall before the fog season they would "fire up" the horn [diaphone] and give it a couple of blasts. Invariably there would be two or three, dead, sea gulls in the horns. [During the summer] they would fly in and die. Out they would come when the horn was ready for service.

With the installation of the diaphone, fresh water was no longer needed for steam boilers. Although there was now less difficulty getting enough fresh water for the station, according to Jack Lewis there was the problem of water quality:

Their main supply was from the watershed around the cistern, the concrete slab that covers most of the island. Sea gulls were always a problem. All summer they would fly over, eat, scream, and defecate. Come the rainy season the watershed would have to be thoroughly scrubbed and the cistern cleaned. As long as I was around that was my job. Willard would lower me in a bosun's chair, and I would clean out the debris. They did not treat the water in any way. It was rain water, and if you found a crawly thing in your glass, you just didn't drink all the way to the bottom.

There was a frog in the cistern, should have brought him out. He was an albino, snow white and had no eyes. He lived there for at least five years, used to keep tabs on him. Not Calaveras caliber, but a good-sized frog.

Though Richmond and the area around Point San Pablo were growing up, the stretch of water separating East Brother from the mainland still made the island isolated.

Their only communication with the beach was an old hand-cranked phone [Installed in 1936]. Sometimes the phone worked. If it didn't, you stood out on the wharf and relied on lung power and hoped someone was listening. There was no radio, it was not considered necessary. You took the job and you understood the risks. If there was an emergency, you met it.

Before Willard Miller and Earl and Lillian Snodgrass left East Brother, they faced the most frightening event in the station's annals. The accident involved what every keeper there through the years had feared most: fire.

The morning of March 4, 1940, was one the three island residents would not soon forget. The underwater cable that usually supplied the station with power and a telephone had been disconnected for repairs. The light in the lighthouse was running off the gasoline-powered generator in the signal building. Willard Miller was on duty, keeping an eye on the generator and the light. At 2:50 A.M. the keeper grabbed his kerosene lantern and walked down to the dock to get more gasoline from one of several fifty-gallon drums stored in the boathouse. As he was filling his small container with gasoline, he stepped back and knocked over the lamp with his foot. A pool of flaming kerosene spread

over the wooden floor of the boathouse. Miller tried unsuccessfully to turn off the spigot on the gasoline drum, and in so doing burned his hand and arm. He discharged the fire extinguisher, but it was too late. Almost immediately the boathouse had become a raging furnace. The keeper scrambled across the wharf and up the tramway to the island. Just as he reached the top, the first of the gasoline drums exploded, sending flames 100 feet into the air.

The explosion awakened Earl and Lillian Snodgrass who, peering from their upstairs window, saw the flames reaching skyward from behind the fog signal building. They threw on some clothes and raced downstairs. By then the fire had ignited the picket fence and was soon licking at the east side of the signal building. More explosions shook the island as the fire reached the other gasoline drums. The two men sprayed the roof and side of the signal building with the garden hose but were hampered by low water pressure. With the boats destroyed, the telephone line out, and a wall of flames between them and Point San Pablo, all the three could do was hope that they could keep the flames from spreading across the island.

Fortunately, a night watchman on the pier at Point San Pablo spotted the blaze. He notified the Richmond Fire Department, but they had no boats to reach the island. A fireman called the Coast Guard headquarters in San Francisco, which immediately dispatched a boat with five men. The cutter roared across the bay at full throttle, taking thirty-five minutes to reach East Brother. By the time help arrived, the three island residents had battled the fire for an hour. Even with the aid of the cutter's water pump, another hour passed before the fire was finally out.

With the light of dawn, the full extent of the damage became apparent. The wharf, tramway, boathouse, and four boats lay in charred ruins. Luckily, the fog signal building, though badly scorched, survived. Had that building caught fire, the lighthouse and other structures might soon have followed. As it was, cost estimates for the damage ranged from \$15,000 to \$20,000, and rebuilding was not finished until June.

During World War II East Brother Light Station continued to perform an important role guiding ships through San Pablo Strait, particularly with the increased ship traffic to and from Mare Island Navy Yard. To the south, the Richmond shipyards cranked out Liberty Ships in record time to help win the war.

Willard Miller stayed on as keeper until the end of June 1942, when he retired at age sixty-five. When the Coast Guard took charge of lighthouses in 1939, he and other keepers were given the option of joining the Coast Guard and being assigned a military rank or remaining as a civilian keeper. Miller chose the latter, as did about half of the keepers around the nation. Indeed, as late as the 1970s there were still a few civilian keepers working for the Coast Guard, mostly on the East Coast.

Earl Snodgrass remained as assistant until 1943 when a bronchial condition forced him to move to a drier climate. Earl and Lillian Snodgrass planted the eucalyptus trees that still stand on the island, swaying in the bay breeze, quiet reminders of lighthouse life in the 1930s and early 1940s.

Much of the material of this article was gleaned from the book *East Brother - History of an Island Light Station* by Frank Perry, with permission of East Brother Light Station, Inc. There are several lighthouses around the country that offer lodging. Accommodations range from bare bones hostels to sumptuous all inclusive venues. East Brother is the premier lighthouse experience, offering transportation to the station, a tour, gourmet dinner (with appropriate libations) and breakfast. There are four antique-decorated rooms and a modest accommodation in the fog signal building. The station is available Thursday through Sunday nights. All inclusive accommodations range in price from \$290 - \$410 a night. You may learn more about East Brother Light Station, or book a romantic night, by logging onto www.EBLS.org. This interactive program will tell you about availability and allow you to make reservations online. If you do not have access to a computer you may call (510) 233-2385.