THE KEEPER'S LOG

VOLUME XXVII NUMBER TWO, 2011



- Gull Rock Lighthouse, Part I
- Lighthouse Depots of Lake Michigan, Part II
- Los Angeles Harbor/Angels Gate Lighthouse
- Bell Rock Lighthouse, Part V
- Cape Henlopen Lighthouse
- Lighthouses of the Baltic Gibraltar

Reprinted from the U.S. Lighthouse Society's The Keeper's Log – Winter 2011 <www.USLHS.org>

Gull Rock:

A Little Lighthouse with a Big History

Part I of II

By Debbie Roark and Peter Annin

Gull Rock is a small island roughly the size of a football field consisting of conglomerate bedrock covered with a sprinkling of glacial till [*the sediment deposited by a glacier*]. The island sits in the open waters of Lake Superior and rises roughly 12 feet above the surface of the lake. As the name implies, Gull Rock is a well-established nesting area for gulls. Other than lichen and a few hardy crevice-borne bushes and plants, the rock is devoid of vegetation or even much topsoil. (There is one regenerating mountain ash tree.) The rock itself is bordered by 100 miles of open water to the north, a 1,000-acre island (Manitou) to the east, 50 miles of open water to the south, and the picturesque forested hills of Michigan's remote Keweenaw Peninsula 2 and 1/2 miles to the west.



The Gull Rock Lighthouse in winter. Photo by Neil Harri.

The climate on Gull Rock is cool, windy, and wet. The region receives more than 30 inches of precipitation per year, including heavy snowfalls. Lake Superior's average annual temperature is just 40 degrees, and out in the open lake the water temperature rarely climbs out of the 50s during the heat of summer. Because these cold waters provide a natural chilling effect on air temperatures, Gull Rock is unusually cool in the spring and early summer, but very comfortable during the hot months of July and August.

With nothing but 100 miles of open water separating Gull Rock from the shores of Ontario to the north and northwest, the prevailing northwesterly winds have ample time to ramp up speed by the time they reach Gull Rock's shores. Waves in this part of the lake can reach impressive heights, with high seas occasionally washing over the rock itself. A rapid current, well known to local mariners, spills off the tip of the Keweenaw Peninsula and broadsides the prevailing wave action from the north and northwest. This may help explain why the seas separating Gull Rock from the Keweenaw Peninsula are often marked by unpredictable "cross-hatch" wave actions, which have traditionally posed serious challenges to regional mariners, particularly during stormy weather.

Lake Superior is the largest body of freshwater (by surface area) in the world, and it has a longstanding reputation as one of the most unpredictable and dangerous maritime destinations in North America. The lake is large enough to create its own weather year-round—or add fuel to an approaching front—and the autumn months are particularly notorious. During autumn, because of its enormous size, the lake takes months to cool back down. The combination of frigid late-fall cold fronts and the relatively warm autumn waters of Lake Superior create regular violent storms on the lake during October, November, and December—months that have logged more shipwrecks than any other months of the year— November being in a category all unto itself. The *Edmund Fitzgerald* sank on November 10, 1975, in a storm with 25-foot waves and hurricane force winds, killing all 29 crewmen on board. Of the six confirmed shipwrecks that have taken place on or near Gull Rock since 1892, half occurred in November.

Identifying safe harbors and ensuring their accessibility is an extremely important matter on such a dangerous and unpredictable body of water. Mariners on the Great Lakes had already made note of such safe harbors by the mid-1800s, and one such anchorage had been noted on the south, or leeward, shore of Michigan's Keweenaw Peninsula, around the corner from Copper Harbor. Shortly after the Civil War ended, the Lake Superior maritime industry, as well as the economic and societal forces that depended upon Great Lakes shipping, began putting significant political pressure on federal officials to build a light station on Gull Rock. Such a light sta-

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tion could mark the gateway to the narrow channel that leads to the safe harbor that lies off the Keweenaw's south shore, greatly assisting mariners seeking shelter in a storm. Copper Harbor's rocky, narrow entrance was often seen as too dangerous an approach during violent weather.

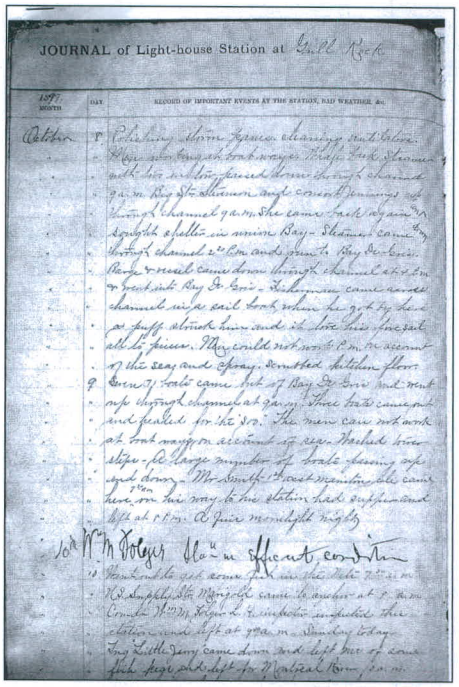
A light station had been constructed nearby on Manitou Island in 1849, which was replaced by a more substantial structure in 1862. But during violent weather, struggling mariners wanted the option of cutting through the narrow strait separating Manitou Island from the Keweenaw Peninsula. The problem, however, was that seas in the channel were notorious, and finding passage through the channel could be a challenge during a storm, especially at night. This was particularly true during rough seas, when the high waves made it virtually impossible to discern Gull Rock and surrounding shoals.

Finally, in the mid-1860s the citizens of Michigan petitioned for a lighthouse on Gull Rock, an action that resulted in Congress appropriating $15,000 for the lighthouse on July 29, 1866. The following year construction began on the project, but before it was completed, the effort was beset by tragedy when the construction foreman, William Tunbridge, drowned on the job—yet another reminder of the dangerous seas that exist near the rock. The project was delayed until a new foreman could be hired, and the lighthouse eventually was completed late that fall and was entered into service several weeks behind schedule on Nov. 1, 1867. The characteristic was a fixed red light.

Service on the rock was lonely and isolated, even by lighthouse standards. Today, Copper Harbor is a small remote village with a winter population of 80 and a summer population of 300. A century ago, Copper Harbor was an extremely isolated outpost with a tiny population, and Gull Rock was a day's hard row beyond that into the Lake Superior wilderness. In many cases keepers seem to have paid their dues at Gull Rock before landing favorable assignments at more comfortable stations on the mainland. Keepers who managed to have their wives hired as assistants seem to have stayed at Gull Rock the longest.

Keepers' log entries over the years give a good sense of the harsh conditions that existed at the station. In 1872 the lighthouse was not yet five years old and it was already damaged by a "gale," according to a repair request filed on Dec. 11, 1872. On May 13, 1873, keeper Stephen Cocking opened up the station for the year and noted, for example, that ice was stacked six feet high on Gull Rock. Four months later on Sept. 19, Cocking reported "the meanest sea I've ever seen. It came up to the door steps." Two years later, Cocking reported being even more rattled by the ravages of the lake on Oct. 26, 1875. "The huge waves are striking the lighthouse, some tremendous blows today. The doors of the boathouse are being smashed by their pounding." Five days later, Cocking said, "I can't stay here much longer now. My fuel is just about exhausted and the spray is freezing all about the rock and the house." Two days later he left the station for the winter.

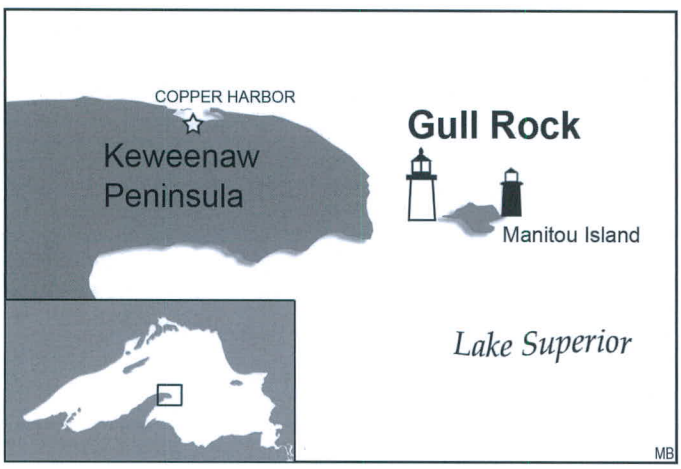
On May 20, 1882, tragedy again struck at Gull Rock when Keeper James Corgan noticed a signal fire that had been lit on Manitou Island by his colleagues at the Manitou Island Light Station. Corgan made his way to Manitou only to discover that Rueben Hart, the Mantiou station's keeper, had capsized his sailboat the day before in rough seas just 500 feet from his light station and that Hart's two fearful, inexperienced assistants were too frightened to launch a rowboat to rescue him. Hart was last seen floating toward Canada on his capsized vessel gesturing for help, no doubt incredulous that his assistants were remaining on shore. By the time Corgan arrived the next day, there was no chance that Hart could have survived that long in water temperatures that hovered in the 30s. The rattled assistant keepers begged Corgan to relieve them of their duties immediately. Corgan ended up replacing Hart as Manitou's keeper. Hart's boat was found three months later, but not his body.


JOURNAL of Light-house Station at Gull Rock

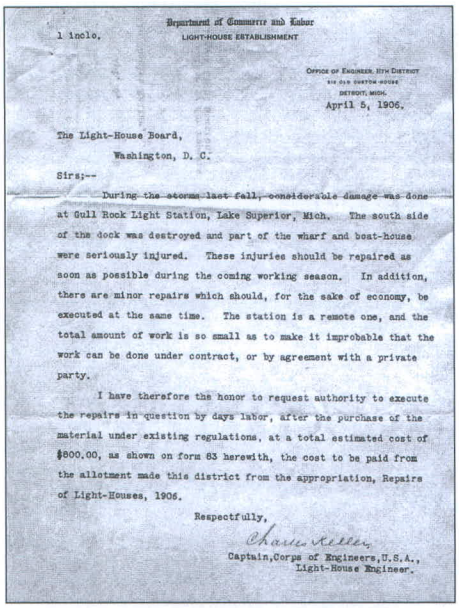
Excerpt from October 1897 keeper's log. National Archives document.

In 1892 tumult arrived on Gull Rock again when on Nov. 7 the Canadian three-masted schooner *G. M. Neelon* broke free from a towline during rough weather and became stranded on Gull Rock. At first abandoned, the *Neelon* was eventually salvaged and returned to service.

In log entries from 1897, Keeper John Nolen reported on Oct. 8 that a fisherman crossing the channel from the Keweenaw Peninsula experienced a gust of wind that "tore his foresail all to pieces." That same day, Nolen had a crew of men working on Gull Rock. They were there to repair the damaged marine railways. According to log entries, by the afternoon of Oct. 8, the men could no longer work on the boat-ways because of the raging seas—a condition that continued throughout the following day. The men were able to work on Oct. 10 and 11, but again weather prevented them from working on Oct. 12. "The sea was coming up to the boathouse door and spray flying clear across the rock," Nolen reported. The following day, on Oct. 13, the men finally were able to finish their work on the marine railways, but weather prevented them from



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Department of Commerce and Labor
1 inclo. LIGHT-HOUSE ESTABLISHMENT

Office of Engineer, 8th District
Old Custom House
Detroit, Mich.
April 5, 1906.

The Light-House Board,
Washington, D. C.

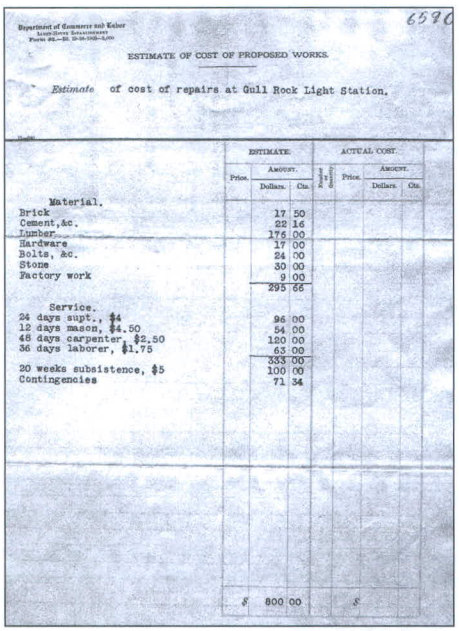
Sirs:--

During the storms last fall, considerable damage was done at Gull Rock Light Station, Lake Superior, Mich. The south side of the dock was destroyed and part of the wharf and boat-house were seriously injured. These injuries should be repaired as soon as possible during the coming working season. In addition, there are minor repairs which should, for the sake of economy, be executed at the same time. The station is a remote one, and the total amount of work is so small as to make it improbable that the work can be done under contract, or by agreement with a private party.

I have therefore the honor to request authority to execute the repairs in question by days labor, after the purchase of the material under existing regulations, at a total estimated cost of $800.00, as shown on form 63 herewith, the cost to be paid from the allotment made this district from the appropriation, Repairs of Light-Houses, 1906.

Respectfully,

Charles Keller,
Captain, Corps of Engineers, U.S.A.,
Light-House Engineer.



6596

Department of Commerce and Labor
Light-House Establishment
Form 63.—M. 10-30-1905—1,000

ESTIMATE OF COST OF PROPOSED WORKS.

Estimate of cost of repairs at Gull Rock Light Station,

	ESTIMATE. Price.	ESTIMATE. Amount. Dollars.	ESTIMATE. Amount. Cts.	ACTUAL COST. Price.	ACTUAL COST. Amount. Dollars.	ACTUAL COST. Amount. Cts.
Material.						
Brick		17	50			
Cement, &c.		22	16			
Lumber		176	00			
Hardware		17	00			
Bolts, &c.		24	00			
Stone		30	00			
Factory work		9	00			
		295	66			
Service.						
24 days supt., $4		96	00			
12 days mason, $4.50		54	00			
48 days carpenter, $2.50		120	00			
36 days laborer, $1.75		63	00			
		333	00			
20 weeks subsistence, $5		100	00			
Contingencies		71	34			
		$ 800	00		$	

Above: Storm damage report from 1906. Below: Estimate for storm damage report. National Archives documents.

getting off the rock. Then the impatient workmen were faced with five more days of idleness until Lake Superior's waters calmed to a point where they were able to leave Gull Rock and return to the mainland on Oct. 18, 1897.

On April 5, 1906, a letter sent to the Light-house Board reported that storms during the prior fall caused "considerable damage" to the Gull Rock Light. The south side dock was completely destroyed and part of the boathouse was "seriously injured." A request for $800 to conduct repairs was made and accepted.

In 1908 the steamer *Spokane*, carrying a load of coal bound for Duluth, ran aground on a rock ledge near Gull Rock on Oct. 28. The steamer was dislodged from the rocks and towed to Baraga, Michigan, with an estimated $50,000 in damage.

An inspection report form filled out for Gull Rock in 1910 declares the station to be in "excellent healthfulness." The only issue of concern cited in the inspection form involved the deteriorating condition of the lens. The report form, which contains a series of predetermined questions followed by typewritten answers, stated that there was no garden at Gull Rock nor a cistern or well, and that the keeper obtained all his water from Lake Superior (the line that inquired as to whether there was ample supply of water was left blank). The report described the lighthouse and privy as being "buff" in color ("natural color of brick") and said the boathouse was painted white and that the lighthouse storerooms were "dry and suitable." The report said that the lighthouse cellar was used as a storeroom, but that one end of it was reserved as an oil house. The small cupboard on the "third landing" in the tower was used "to keep cleaning rags, etc." A lightning conductor consisting of a 1/2-inch copper rod was fastened to the balcony floor and ran down the outside of the tower where it was buried in the rock below. The report said that one wooden door leads into the tower from the ground level.

Regarding the station's location, the report notes that the nearest public road is 15 miles away in Copper Harbor, the nearest Post Office is 27 miles away in Eagle Harbor, and the nearest "village or town" was 40 miles away in Calumet. It was 23 miles to the nearest railroad stop. The report noted that the area of the "entire site" was a mere half acre. Interestingly, the question on the form that read, "Distance of tower from nearest high-water mark" was left blank.

On March 29, 1913, an inspector with the Bureau of Lighthouses recommended that an acetylene flasher be installed at the Gull Rock Lighthouse at a cost of $175. It was also recommended that the light's characteristic be changed from a fixed red to a flashing red, flashing for 0.3 seconds, and then eclipsed for 2.7 seconds, and that the candlepower be increased from 130 to 180.

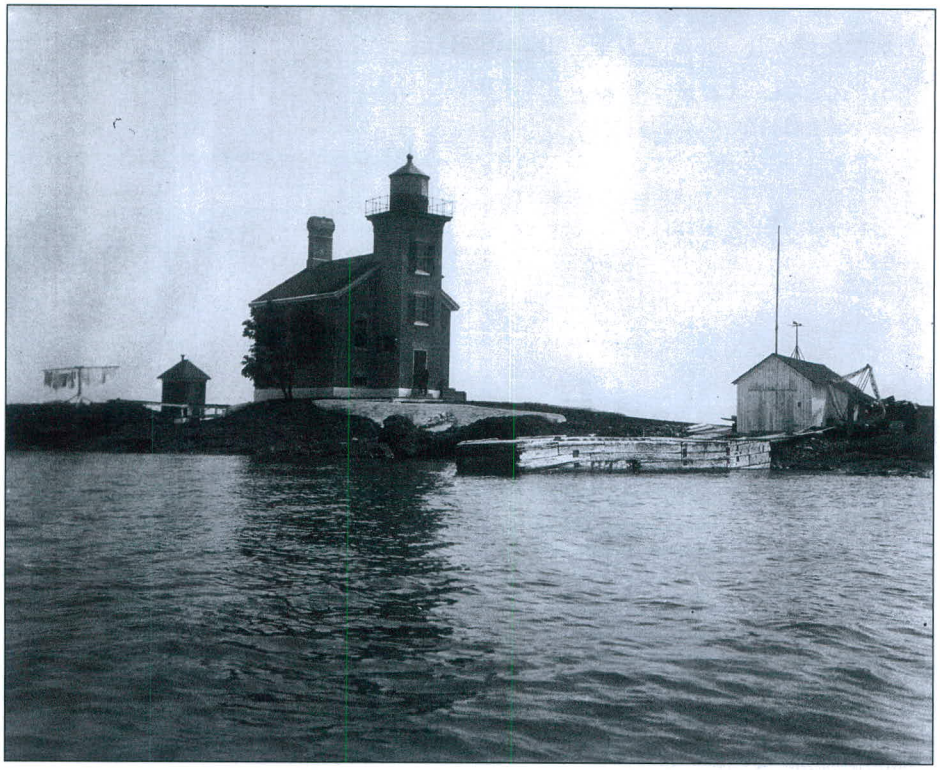
At the same time it was also proposed that the lighthouse become "non-attended" and that a steel door be installed at the outside entrance and that the opening from the tower to the keepers' dwelling be "bricked up for fire protection." The form went on to say that the "dwelling is to be leased if possible . . . steel door is in stock." The recommendation was accepted and subsequent correspondence made it clear that the move would save the government $624 in annual salary for the keeper and $480 in salary for his assistant.

The target date for automation was June 30, 1913. On July 5, a memo from the lighthouse inspector's office in Detroit, Michigan, to the commissioner of lighthouses reported that "the non-attended equipment was placed in service June 25th and the keepers boxed the Government property and left the station in proper condition on June 30th, on which the services of keeper, Arthur DeChamplain and Assistant Keeper, Henry T. Hoffenbecker ceased under their appointments as such." A July 10 addendum to the memo reports that DeChamplain and Hoffenbecker were both issued new appointments "and will be retained in the service."

Thus, after just 46 colorful years of manned service, the Gull Rock Lighthouse was automated, a trend that would visit other light stations throughout the next century. The neighboring Manitou Island Light Station would be manned for several more decades, and the light keeper there was now put in charge of monitoring conditions at Gull Rock. As one of the earliest stations to be automated in Lake Superior, the Gull Rock station was never blessed with the likes of electricity, phone service, or indoor plumbing. It stands as a testament to the old way of doing things in the U.S. Lighthouse Service.

It is somewhat ironic that just five months after the Gull Rock Lighthouse was automated and the keepers pulled out for good, the station would witness the most important event in its history. On Nov. 8, 1913, the steamer *L. C. Waldo*, laden with iron ore, was struggling in rough seas that had been whipped up by one of the worst storms ever to hit the Great Lakes. Shortly after midnight, hurricane-force winds sent a series of large waves over the *Waldo*'s aft deck, tearing away her pilothouse, damaging her steering gear, and knocking the electric plant out of commission. According to the Annual Report of the United States Life-Saving Service from 1914, the ship's compass went over-

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The undated photo above, from the archives at MichiganTechnological University, shows the Gull Rock Lighthouse in a handsome condition, with an unidentified lightkeeper standing in the open doorway. The lighthouse and oil house appear unpainted, and the lighthouse windows are bordered by handsome dark-colored open shutters. A two-story (mountain ash) tree is visible immediately adjacent to the north side of the keepers' dwelling. A large dock juts out from the north side of the white boathouse, and a commercial fisherman's net-drying wheel is visible on the west side of the boathouse. There also seems to be an elevated walkway leading from the back of the keepers' dwelling to a raised portion of the rock that is adorned with a laundry-drying rack. Courtesy of the Michigan Technological University archives and Copper Country Historical Collections.

board with the wreckage. A second compass was secured from a lifeboat, and the captain and support crew moved to the forward pilothouse. But navigation with a small compass in violent seas, with disabled steering and no lights, proved to be too much, and the *Waldo* ran aground on Gull Rock at approximately 4 a.m. on Nov. 8.

After a brief period on the rock, the steamer twisted and cracked open, cutting off the forward crew from their food, supplies, and warm clothing in the rear of the vessel. As the waves crashed and the wind howled, ice continued to build on the outside of the stranded ship. Inside, the ship's engineer used an overturned bathtub and some pails to construct a makeshift stove and chimney, and anything that could burn was used to keep people warm. For more than three days, with little food, the group of 24 people huddled in their stranded ship waiting for what is arguably the most heroic rescue ever to take place on Lake Superior.

In the end, rescuers from two life saving stations ended up receiving word about the *Waldo* wreck. The first was the station in Eagle Harbor, Michigan, located 14 miles southwest of Copper Harbor. The second rescue crew was located at the "Portage" station more than 60 water miles away in Houghton, Michigan. After much trial and tribulation, rescuers from both stations ended up converging on the wreck of the *Waldo* at roughly the same time.

Here is an excerpt from the official description of the *Waldo* rescue from the U.S. Coast Guard website:

> "On 8 November 1913 the steamer *Waldo*, nearly 5,000 tons, was driven onto Gull Rock ...The wind was about 70 miles an hour and the sea very rough. The vessel broke in two and the imperiled people took shelter in the cabin, where they remained for 90 hours without food. News of the wreck reached the Eagle Harbor Life-Saving Station on 9 November and the crew made a brave effort on that day to reach the vessel in a power surfboat. After having proceeded 8 miles, the great amount of ice on the small boat made it impossible to go farther. The boat, therefore, returned to the station. The larger and more powerful lifeboat was undergoing repairs when word concerning the wreck was received. When it was found impracticable to effect a rescue with the surfboat, the crew returned to their task and made the [power lifeboat] ready to go to sea. The power lifeboat was launched at 3 AM on 11 November. After four hours of making way in rough seas and being exposed to the snow and freezing wind, the crew reached the *Waldo*, 32 miles from the station. Information concerning the disaster was not received at the Portage Life-Saving Station [Houghton, Michigan] until noon on 10 November . . . The distance to the *Waldo* was 80 miles. [A] tug towed the [Portage] lifeboat to the scene of the wreck. They arrived on scene at 3 AM on the 11th. While the Portage crewmen chopped the thick ice encasing the *Waldo*'s cabin, the Eagle Harbor crew arrived. Both lifeboats were ice-logged. This made maneuvering the boats more difficult and increased the hazard of the rescue. Despite these difficulties, the lifesavers, in the face of great danger, landed the 22 men and 2 women, all hands, and the ship's dog safely at Houghton, MI. In awarding the keepers and surfmen a Gold Lifesaving Medal, the department recognized the good judgment, skill, and undaunted heroism which stands with the most praiseworthy instances of bravery in the annals of the service."

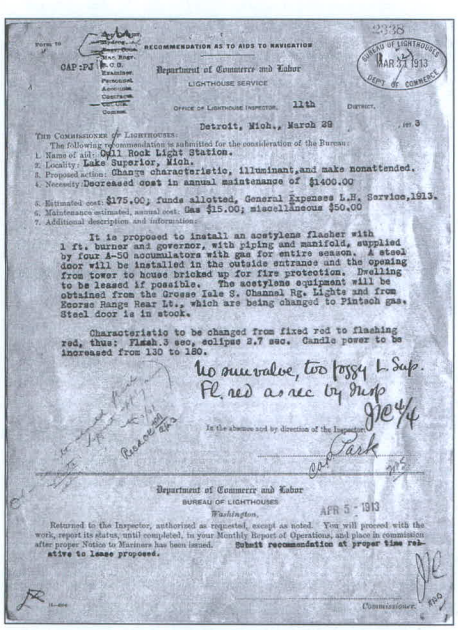
The 1913 storm that claimed the *Waldo* is one of the most infamous ever to visit the Great Lakes region. From Minnesota to New York, a total of 10 ships disappeared entirely in that storm (two in Lake Superior) with all hands lost on each vessel. The four-day maelstrom, which was marked by highly unusual hurricane-force winds, also wrecked 26 other ships throughout the Great Lakes, and stands as one of the most violent tempests ever recorded in Great Lakes maritime history. And for the first time in 46 years, a Gull Rock lightkeeper was not there to witness it. One of the *Waldo*'s rescuers would later call it "perhaps the most furious storm, with heavy snow, that has ever visited the lake."

The next decade would see two more wrecks on Gull Rock. Though they were much less dramatic than the *Waldo*, foul weather played a role in both of them. On

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Nov. 27, 1918, the *Taurus*, fleeing a storm, was seeking shelter on the south side of Keweenaw Point when she ran aground on the reef due south of Gull Rock. Not unlike the *Waldo*, the day before the *Taurus*' grounding, severe seas had "carried away considerable equipment from around the bridge, which caused an unknown error of the compass." The grounding was determined to have been caused by the combination of the compass malfunction and hazy weather conditions.

Then on Oct. 19, 1923, the 6,751-ton *Samuel Mather* ran aground on the tip of the Keweenaw Point while proceeding "up lake" to Duluth, Minnesota, without cargo during a stiff and snowy northwest gale. The captain later reported that he had miscalculated his distance in the storm, became disoriented, and thought he had already passed Manitou Island when land suddenly appeared ahead in the darkness. The ship was immediately thrown into full-speed reverse, but she ran aground on Keweenaw Point. The *Samuel Mather* was freed from the grounding and towed to Duluth for repairs totaling $60,000.



RECOMMENDATION AS TO AIDS TO NAVIGATION

Department of Commerce and Labor
LIGHTHOUSE SERVICE

Detroit, Mich., March 29

The Commissioner of Lighthouses:

The following recommendation is submitted for the consideration of the Bureau:

1. Name of aid: Gull Rock Light Station.
2. Locality: Lake Superior, Mich.
3. Proposed action: Change characteristic, illuminant, and make nonattended.
4. Necessity: Decreased cost in annual maintenance of $1400.00
5. Estimated cost: $175.00; funds allotted, General Expenses L.H. Service, 1913.
6. Maintenance estimated, annual cost: Gas $15.00; miscellaneous $50.00
7. Additional description and information:

It is proposed to install an acetylene flasher with 1 ft. burner and governor, with piping and manifold, supplied by four A-50 accumulators with gas for entire season. A steel door will be installed in the outside entrance and the opening from tower to house bricked up for fire protection. Dwelling to be leased if possible. The acetylene equipment will be obtained from the Grosse Isle S. Channel Rg. Lights and from Keweenaw Range Rear Lt., which are being changed to Pintsch gas. Steel door is in stock.

Characteristic to be changed from fixed red to flashing red, thus: Flash.3 sec, eclipse 2.7 sec. Candle power to be increased from 130 to 180.

No sunvalve, too foggy L. Sup. Fl. red as rec by Insp 9/24/14

Department of Commerce and Labor
BUREAU OF LIGHTHOUSES
Washington.
APR 5 - 1913

Returned to the Inspector, authorized as requested, except as noted. You will proceed with the work, report its status, until completed, in your Monthly Report of Operations, and place in commission after proper Notice to Mariners has been issued. Submit recommendation at proper time relative to lease proposed.

Commissioner.

Request from 1913 to automate the Gull Rock Lighthouse. National Archives document.

On Sept. 17, 1926, the *Charles C. West* was proceeding "up lake" through "Gull Rock Passage" bound for Ontonagon, Michigan, when it ran aground on Gull Rock reef at 11 a.m. and suffered "considerable damage," according to a report filed by the Steamboat Inspection Service later that year. The cause of the accident was determined to be "prevailing atmospheric conditions, which made it difficult to judge distance and to locate objects low on the water." Damage was estimated at $40,000.



Another undated photo from the Michigan Technological University archives shows the south side of the station, with another dock visible on that end of the island. The south side seawall appears to be painted white or whitewashed. A dormer, near the southeast corner of the roof, is clearly visible. Another photo from the archives dated 1915 also shows the lighthouse in its natural brick color. Courtesy of the Michigan Technological University archives and Copper Country Historical Collections.

For the next several decades the history of the Gull Rock Lighthouse seems to have gone dormant. It is a time when deterioration and neglect began to set in at the station. Files from the U.S. Coast Guard station in Portage, Michigan, (outside Houghton) do not shed light on this period. In photographs published in the *The Daily Mining Gazette* in Houghton on June 4, 1982, a Boy Scout troop on a tour of the light station took a number of photos that captured the privy without its door, as well as a significant amount of spalled brick. Most notably, however, the troop also photographed a very large hole in the lighthouse roof that appears to have been there for quite some time. Another photo taken by Michigan lighthouse researcher Donald Nelson during the 1980s shows even more roof deterioration on the Gull Rock keepers' dwelling, though the south side dormer remains intact. Then in 1988 the Coast Guard replaced the roof on the lighthouse, and photographs taken since that time do not show the dormer present.

During the latter half of the 20th century, modern navigational technologies like radar and depth sounders greatly lessened the number of shipping accidents throughout the Great Lakes, and the waters around the Gull Rock Lighthouse were no exception. But even the most talented seamen and the most technically capable vessels can run into problems on Lake Superior. And so it was with the *Mesquite*, a 180-foot Coast Guard cutter. At 2 a.m. on Dec. 4, 1989, the *Mesquite* was removing aids to navigation across the channel from Gull Rock when it ran aground in 12 feet of water off the tip of Keweenaw Point. With a crew of 53 aboard, the *Mesquite* suffered severe damage, which sent water rushing into the engine room, and the ship began to list to port. The commanding officer gave the order to abandon ship. Though no lives were lost, severe weather badly damaged the *Mesquite* before it could be salvaged, and the Coast Guard declared it a "constructive total loss." It now rests in 110 feet of water off the Keweenaw Peninsula and is a local scuba diving destination.

Thanks to Terry Pepper for sharing his research which contributed to the compilation of this history.

Reprinted from the U.S. Lighthouse Society's The Keeper's Log – Spring 2011 <www.USLHS.org>

Gull Rock:

A Little Lighthouse with a Big History

Part II of II

By Debbie Roark and Peter Annin

During the last 137 years, the waters on or in the general vicinity of Gull Rock have claimed the lives of one lighthouse construction foreman and one lighthouse keeper. They have also been the scene of at least five shipwrecks involving private vessels and one wreck of a Coast Guard cutter, giving Gull Rock one of the more checkered pasts in the annals of Lake Superior maritime history. Ironically, many of the more celebrated historical events occurred after the light station was automated in 1913.

But the significance of Gull Rock's place in Great Lakes maritime history should not be measured in mishaps alone. Gull Rock, along with the Manitou Island Light Station one mile to the east, remains an extremely important navigational landmark today. Together Gull Rock and Manitou are frequently referred to as the dividing line that separates Lake Superior into its eastern and western halves. One of the most strategically important industries in the United States is the iron ore mining that occurs in northeastern Minnesota. Today, lake-locked, 1,000-foot freighters—too large to pass through the Welland Canal Locks at Niagara Falls—ply the upper lakes non-stop 24 hours a day during the shipping season to deliver iron ore taconite pellets to the steel mills in the lower Great Lakes. The steel mills, in turn, feed the automotive industry and other economically important businesses in cities like Detroit, Pittsburgh, and Chicago. Before iron ore in Minnesota, it was copper in Michigan's Upper Peninsula, where some of the richest copper deposits ever discovered were mined until the ore played out a half century ago. Today coal from Wyoming and grain from the upper Midwest, along with ore on the iron range of Minnesota, help make Duluth the largest port on the Great Lakes.

Today when those 1,000-footers are heading "down lake" from Duluth, they know that when they pass the Gull Rock and Manitou lights, they have reached the half-way point in Lake Superior, and it is time to turn to the southeast and head for the locks at Sault Saint Marie. And every once in a while those giant boats, perhaps to save time or fuel costs, or because they are headed for the ore docks at Marquette, Michigan, will take a short cut, and 'shoot the gap' between Keweenaw Point and the Gull Rock Lighthouse. It is a dramatic sight. And even though those giant boats are graced with the latest on-board navigational equipment, any captain will tell you that it is always a comfort, particularly after the sun goes down, to have an old lighthouse out there as a terrestrial reminder that your enormous freighter remains on course.

Gull Rock Lighthouse was constructed in 1867 as a rectangular, brick, two-story, "schoolhouse"-style light station with a basement and attached 46-foot tower and a gabled roof. The 2,400-square-foot building rests on a brick and stone masonry foundation, and its walls are made of yellow "cream city" brick manufactured in Milwaukee, Wisconsin. While the building is currently white, it was natural brick yellow for much of its history. The main frame of the building contains a dozen windows, plus four basement windows. The second floor of the building once had a south-facing dormer window protruding from the roof, but that feature is no longer present. The entire roof was replaced by the U.S. Coast Guard in 1988. The "basement" of the structure is predominantly elevated above ground level and at one time could be directly accessed by an east-side rear door that has been bricked shut, records suggest, since the light was automated in 1913. All the basement windows are bricked shut as well. The attached 46-foot tower was capped with a prefabricated octagonal cast-iron lantern room originally graced with a fixed, red, fourth-order Fresnel lens with a focal plane of 50 feet and a maximum visibility of just over 13 miles. The tower's interior iron spiral staircase provides access to the lantern



The Gull Rock Lighthouse as it looks today. Author photo.

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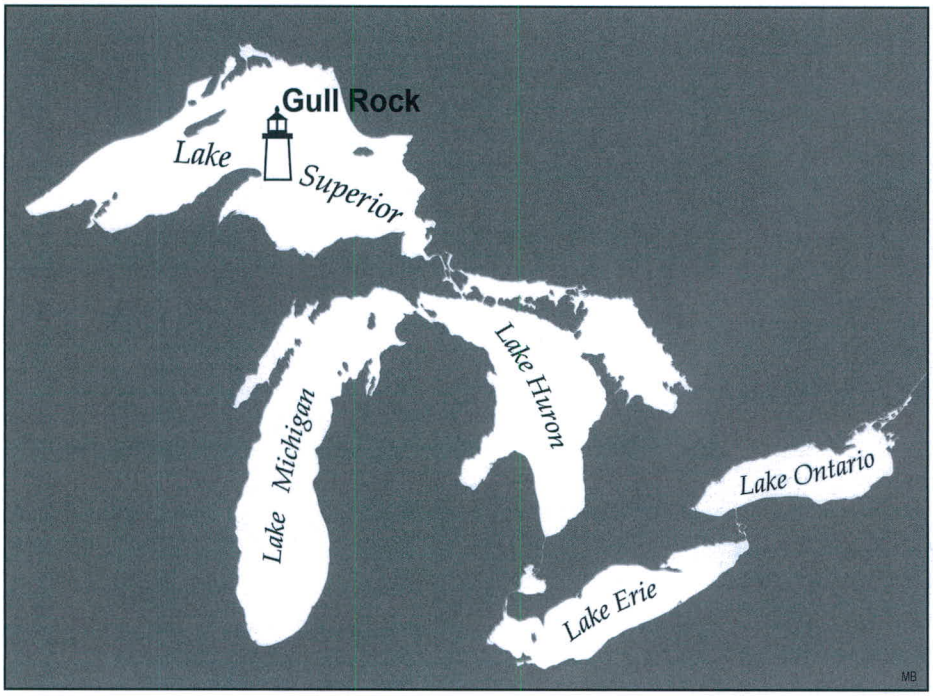


Chart shows the location of Gull Rock relative to the Great Lakes. Courtesy Mary Borkowski.

room as well as the second floor of the keepers' quarters. Two vertical windows provide the staircase with ample natural light. The front door of the lighthouse accesses the base of the tower only. One chimney protrudes from the red asphalt shingle roof.

According to floor plans obtained from the National Archives by archivist Candace Clifford, the basement of the keepers' dwelling, which has been inaccessible for nearly a century, included a kitchen, workshop, oil room, and pantry. The basement was originally accessible from the outside by a small back door, which led to the privy. The basement could also be accessed from the first floor via an interior stairway. The first floor of the keepers' dwelling contained a kitchen, pantry closet, lamp room, keeper's room, hallway, and sitting room. (It is not clear why the floor plan included a kitchen on the basement level as well as the first floor.) The second floor, when it was intact, contained the assistant keeper's room, storeroom, closet, hallway, and large bedroom. The second floor was also accessed via the tower stairway.

Today spalling brick is visible on virtually every external wall of the lighthouse. In some areas the spalling is limited to just a few bricks; in other areas, such as the entire eastern wall, as many as 50 percent of the bricks have experienced spalling. Historical records suggest that the original wooden front door of the lighthouse was replaced with a steel door in 1913, and that has since been replaced by a standard, modern, aluminum, six-panel door. The 1867 date-stone above the front door appears to be in good condition and the date stamp remains clearly visible. Inside the front door of the tower, the iron circular staircase appears to be in good condition.

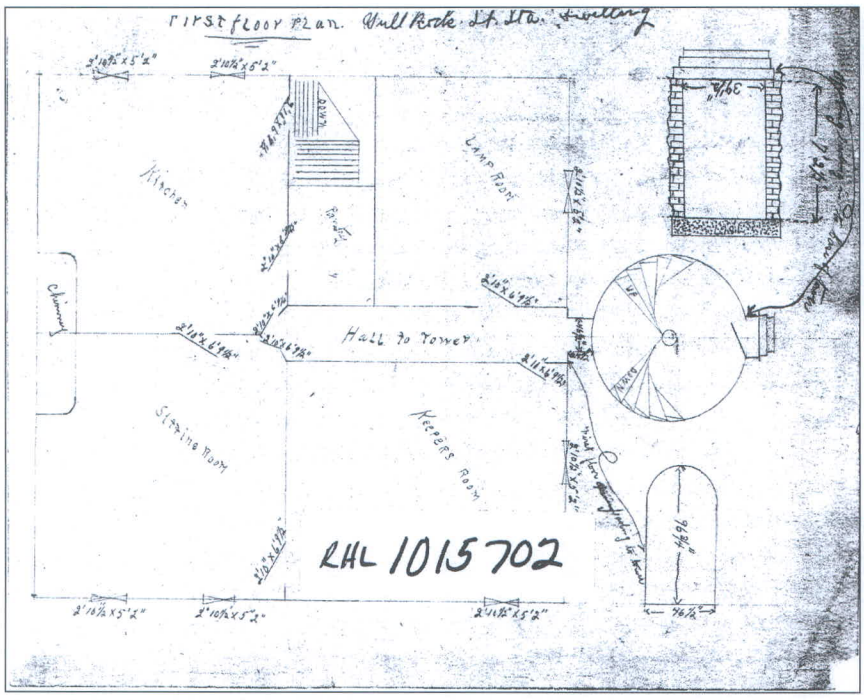
It is on the second level that the extent of the interior damage becomes visible. Two thirds of the second floor has completely rotted away and has collapsed down onto the first floor below. Several interior walls remain standing, however. Prior to work completed in 2008, looking down through the large holes that remain uncovered on the second floor, one could see the rotting remains of the second floor superstructure along with the remains of the original roof—all of which used to lie in a thick heap on the first floor. Because much of the interior plaster on the second floor is gone, the studs and rafters are visible. Relatively new plywood was clearly visible on the interior of the northeast side of the roof, which was replaced in 1988. On the northwest side of the roof, wet rot was clearly visible, as were some small holes in the roof itself. It is our understanding that a large piano-sized hole existed in the roof of Gull Rock for many years—possibly decades—until it was finally repaired in 1988. Though repair records are not on file at the Coast Guard station in Houghton, Michigan, a brief article in the *The Daily Mining Gazette* in Houghton published on July 11, 1988, quotes Coast Guard personnel about to embark on a Gull Rock roof repair detail. Sections of the interior walls on the second floor are intact but in poor condition.

The tower is in good shape compared to the rest of the building. The iron staircase is sound and in good condition. In some areas of the tower, the plaster has peeled away, leaving the brick exposed. But most of the interior plaster in the tower remains intact. At the top of the tower, the lantern room and surrounding iron gallery also appear to be in fair condition. The original fourth-order Fresnel lens has been replaced by a solar-powered, 12-volt DC, 250 mm, acrylic, white optic with a maximum visibility range of just over 10 miles. At this point Gull Rock Lightkeepers is uncertain as to the exact whereabouts of Gull Rock's original Fresnel lens, although a 1910 Lighthouse Bureau Inspection Report for Gull Rock obtained by archivist Candace Clifford at the National Archives reported that the lens was not in good condition a century ago; "one panel of the lens which forms the door is in bad shape," the 1910 inspection report states. "The prisms that go to form this panel are all loose. The cementing material that fastens them in place has loosened and allows the prisms to slide back and forth. When the door is opened the weight causes the prisms to draw out from the frames and leaves the whole panel loose."

Outhouse/Privy: Standing behind the lighthouse approximately 10 yards to the east is a small, detached outhouse also constructed in 1867. The outhouse sits on a stone masonry foundation and is made of red brick that is covered with yellow lichen. A series of masonry sidewalks was laid around the lighthouse, and one elevated walkway led from the back door of the keeper's dwelling down to the outhouse.

Prior to work done in 2009, the masonry on the outhouse was cracking and, in some areas near the base, had completely broken away, leaving sizable holes in the foundation. Sunlight shines in from the side of the privy pit. The door to the outhouse is missing and a large portion of the roof was missing, as is most of the interior ceiling. The lower half of the ventilation pipe is also gone. While the window frame remains, the glass in the window is missing and the frame itself is badly deteriorated. Today the walkway that used to lead to the outhouse is also missing.

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Floor plan for first floor of the Gull Rock lighthouse. Courtesy National Archives.

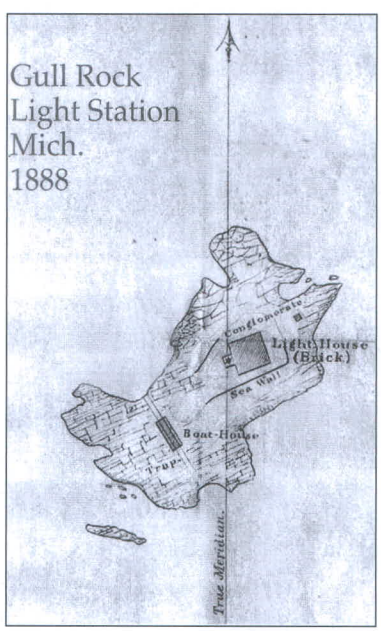
Boathouse/Boatways/Docks/Cribs: *Annual Reports of the Lighthouse Board* refer to boatways that existed at one point on both the north and south sides of Gull Rock. "Boatways" seem to refer to a ramp system that was used to pull the keepers' small rowboat up out of the water and into the boathouse for safekeeping. The tracks for this ramp system are clearly visible (along with the boathouse) in site plans from 1888 and 1904 obtained from the National Archives. The exact year these boatways were constructed could not be determined, though new ones were constructed in 1882, according to an *Annual Report of the Lighthouse Board*. The date that the boathouse was constructed could not be determined, but a keeper's log refers to it in 1875. It is assumed that the boathouse was built in 1867, the same year the lighthouse was constructed. The first visible evidence of the boathouse comes in the 1888 site plan, where it is clearly shown along with the boatways. Photographs of the Gull Rock Lighthouse obtained from the archives at Michigan Technical University clearly show a white clapboard boathouse in the same position that it is featured on the 1888 and 1904 site plans. One photo is dated 1915, while the other two are undated. The 1904 site plan, which contained elevation estimates for Gull Rock, suggests that the boathouse was situated in a much lower and more vulnerable section of the island, with an elevation of just four or five feet above the lake's surface. (Elevation around the keepers' dwelling was closer to 10 feet.) Today, there is no sign left of the boatways or the boathouse, and *Annual Reports of the Lighthouse Board* refer to numerous instances when the boatways had to be repaired or replaced because of damage from the elements. Because of their proximity to the water's edge, they are likely to have suffered regular ice damage.

It is the working assumption of Gull Rock Lightkeepers that boat docks were not built at Gull Rock until after 1888. The site plan from 1888 shows the boathouse, boatways, lighthouse, outhouse, seawalls, and walkways. But it does not show any docks. There is no mention of docks in lighthouse logbook entries sampled for dates prior to 1888, although the boathouse and boatways are mentioned prior to that date. Then, in 1889, in the *Annual Report of the Lighthouse Board*, a notation mentions that a "landing dock" 8 feet wide and 29 feet long was constructed on the south side of the island and a sidewalk was laid to connect it to the boathouse. Eight years later, in 1897, the landing dock had to be rebuilt. In 1898 there are references to a boat landing dock on the north side of the island receiving significant repairs and augmentation. Then, a site plan dated 1904, is nearly identical to the site plan of 1888, except for one key difference: three docks are visible on the property. Judging from this circumstantial evidence, we believe that it is highly likely that no docks existed at the Gull Rock Lighthouse until the year 1889, when a south side dock was built. Once the first reference to docks appears in the historical documentation in 1889, the record is subsequently marked by several references to dock repairs, rebuilding, augmentation, and the like. In some cases protective cribs were even constructed as a means of sheltering the labor-intensive docks. Today, no sign of the docks or cribs remains on Gull Rock. It is assumed that the docks were removed by the Coast Guard or, more likely, they were swept away in storms or during Lake Superior's often violent ice-outs or both.

Walkways: The series of sidewalks around the lighthouse are also in a severely degraded condition. In some areas, like the front of the lighthouse, it is difficult to tell exactly where the sidewalk eventually led and how extensive it might have been. *Annual Reports of the Lighthouse Board* refer to several instances when the walkways around the station were repaired, including an instance in 1906 when 64 feet of cement walks were laid.

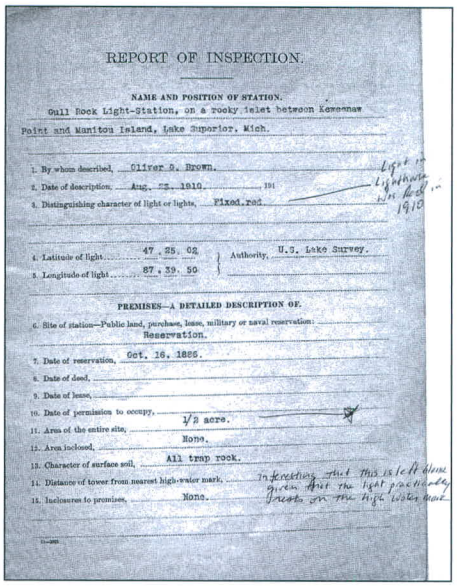
Retaining Walls: Outside the building, a stone masonry retaining wall was built on the northwest and south sides of the keepers' dwelling to fend off high waves. (It is not clear when the retaining walls were built, although they are clearly visible in the 1888 site plan.) This wall has since deteriorated in certain areas. In 1898 a retaining wall of rubble masonry was also added to the northeast corner of the lighthouse according to an *Annual Report of the Lighthouse Board.*

On July 19, 1984, the Gull Rock Lighthouse's contribution to Great Lakes maritime history was recognized with a listing on the National Register of Historic Places. This was done



1888 site plan for "The Rock." Courtesy National Archives.

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REPORT OF INSPECTION.

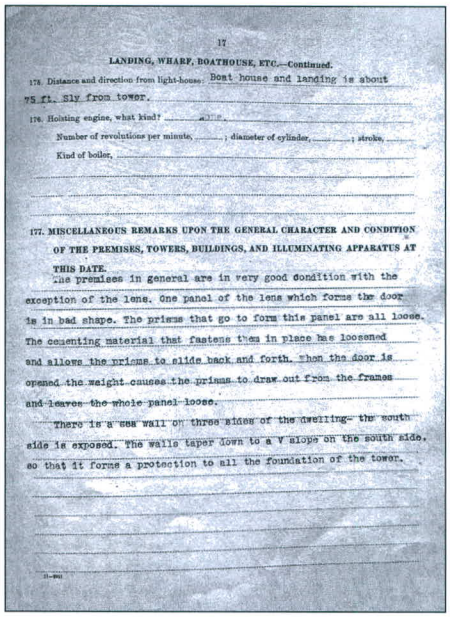
NAME AND POSITION OF STATION.

Gull Rock Light-Station, on a rocky islet between Keweenaw Point and Manitou Island, Lake Superior, Mich.

1. By whom described, Oliver S. Brown.
2. Date of description, Aug. 23, 1910. 191
3. Distinguishing character of light or lights, Fixed red.
4. Latitude of light, 47 . 25. 02 } Authority, U.S. Lake Survey.
5. Longitude of light, 87 . 39. 50 }

PREMISES—A DETAILED DESCRIPTION OF.

6. Site of station—Public land, purchase, lease, military or naval reservation: Reservation.
7. Date of reservation, Oct. 16. 1855.
8. Date of deed,
9. Date of lease,
10. Date of permission to occupy,
11. Area of the entire site, 1/2 acre.
12. Area inclosed, None.
13. Character of surface soil, All trap rock.
14. Distance of tower from nearest high-water mark, In fronting that this islet alone given that the light practically stands on the high water mark.
15. Inclosures to premises, None.



17

LANDING, WHARF, BOATHOUSE, ETC.—Continued.

176. Distance and direction from light-house: Boat house and landing is about 75 ft. Sly from tower.

176. Hoisting engine, what kind? ..... motive.

Number of revolutions per minute, ...; diameter of cylinder, ...; stroke, ...

Kind of boiler, ...

177. MISCELLANEOUS REMARKS UPON THE GENERAL CHARACTER AND CONDITION OF THE PREMISES, TOWERS, BUILDINGS, AND ILLUMINATING APPARATUS AT THIS DATE.

The premises in general are in very good condition with the exception of the lens. One panel of the lens which forms the door is in bad shape. The prisms that go to form this panel are all loose. The cementing material that fastens them in place has loosened and allows the prisms to slide back and forth. When the door is opened the weight causes the prisms to draw out from the frames and leaves the whole panel loose.

There is a sea wall on three sides of the dwelling, the south side is exposed. The walls taper down to a V slope on the south side, so that it forms a protection to all the foundation of the tower.

1910 inspection report, pages 1 (above) and 2 (below). Courtesy National Archives.

in the document *U.S. Coast Guard Lighthouses and Light Stations on the Great Lakes*. The brief National Register evaluation sheet and Historic American Engineering Record (HAER) Inventory form on file regarding Gull Rock's listing noted that "Gull Rock was a serious threat to ships attempting to pass between the tip of the Keweenaw Peninsula and Manitou Island in the course of going from the western end of Lake Superior to Keweenaw Bay." The documentation added, "This lighthouse played an important role in the growth of shipping on Lake Superior."

Congress passed the National Historic Lighthouse Preservation Act (NHLPA) in 2000 to forestall the chronic deterioration of America's light stations—many of which have been mothballed by the government and fallen into a state of serious disrepair. The NHLPA makes light stations available to local governments, state or federal agencies, and qualified nonprofit organizations that complete a rigorous application process. No federal, state, or local government entities stepped forward to acquire Gull Rock Lighthouse when it was made available for transfer in 2002. Gull Rock Lightkeepers, a Michigan-based 501(c)3 nonprofit organization, was formed in 2004 by Peter Annin, a former *Newsweek* correspondent and now managing director of Notre Dame Environmental Change Initiative. In June of 2005 the federal government approved the lighthouse transfer application and the deed for Gull Rock Lighthouse was transferred to the nonprofit sector.

Gull Rock does remain an active aid to navigation. The light station is regularly serviced by the U.S. Coast Guard's Aids to Navigation Team at the Coast Station in Portage, Michigan—the vast majority of the Coast Guard's maintenance work is focused on Gull Rock's solar-powered light and accompanying batteries.

In recent years, Gull Rock has entered a much more promising period in its long and colorful history. Several years of fundraising, extensive volunteer work, and some excellent craftsmanship have all contributed to a restoration renaissance at the historic light station. A bright red, cedar shingle roof was installed on the lighthouse in 2008—the same material used on the original roof in 1867. At the same time, a shiny red tin roof was installed on the privy, true to the original design. Also during the summer of 2008, a dedicated group of volunteers completely cleaned out all of the debris from the lighthouse. Material from the collapsed floors, ceilings, walls, and roof filled much of the lighthouse basement (enough to fill five dumpsters) and was removed from the structure and transported to a regional landfill via landing craft.

In 2009 contractors repaired the privy foundation, which was badly deteriorated, raising concerns about the small building's ability to withstand a large Lake Superior storm. In addition, an historical architect spent the day on Gull Rock gathering information, measurements, and samples. The data was used to develop interior and exterior plans and specifications for restoration of both the keepers' dwelling and privy.

In 2010 volunteers Roger Welsh and Eva Newman took on an extraordinary project: building from scratch an entire set of temporary replacement windows for the lighthouse. For the last 35 years or so, the lighthouse windows (or what is left of them) have been boarded up. This has kept natural light out of the building, and it has prevented the lighthouse from breathing. The new windows are temporary and removable, and they will only be used during the construction phase at the lighthouse. Eventually these windows will be replaced by historically accurate windows, complete with antique glass that Roger has already acquired. Those permanent windows will be installed once all the interior restoration work is complete a few years down the road.

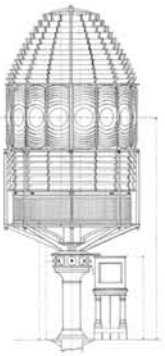
In late 2010, Gull Rock Lightkeepers received its fourth grant from the Michigan Lighthouse Assistance Program (MLAP). This grant will allow us to finally begin interior restoration during the 2011 construction season. MLAP has played a crucial role in funding the restoration work at Gull Rock, and it has been the leading funder of the light station's revival during the last five years. Important grants were also received from the National Trust for Historic Preservation, as well as the Trust for Architectural Easements. But some of the most enthusiastic grants have come from numerous average citizens in Michigan and from throughout the United States. Many expensive restoration chores remain at Gull Rock. The same features that so captivate the general public—Gull Rock's remoteness, and unique location—also make it a challenge to repair. The goal of Gull Rock Lightkeepers is to completely restore this lonely but historic light station so that it can safely and dependably be opened to the public for tours. That will not be possible, of course, without many more contributions from government, industry, the nonprofit community, and the general public. Once Gull Rock is opened, however, it will make for a proud stamp in anyone's lighthouse passport.

For more information about Gull Rock, including additional photos, please visit http://www.gullrocklightkeepers.org. Tax deductible PayPal donations to support the restoration are accepted on the website. Also, visit YouTube to see a great video short about the restoration project: www.youtube.com/watch?v=LF5Buqhrhh8.

Peter Annin serves as chairman and executive director of Gull Rock Lightkeepers.

Debbie Roark serves as vice chairman of Gull Rock Lightkeepers and can be contacted with questions regarding Gull Rock at roarkdl@hotmail.com.

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



Restoration & Preservation



Thomas Point Shoal Lighthouse, MD

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

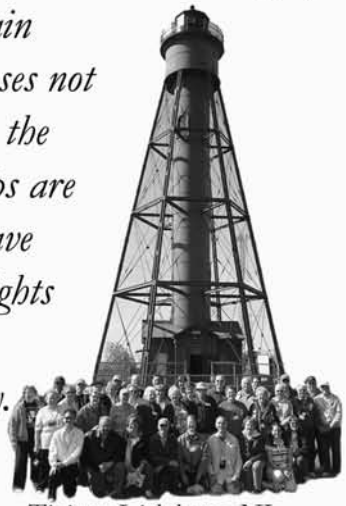
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