Devils Island Light Station, Wisconsin

The Crown Jewel in the Apostle Island Chain

By Terry Pepper

Devils Island is the northernmost island on the western extremity of the Apostle Group, and represents an important turning point for both east and westbound vessels coasting along Superior's southern shore.

With the opening of the first lock at Sault Ste. Marie in 1855, maritime traffic along Superior's south shore increased dramatically.

Although Eagle Harbor Light had been established 123 miles to the east to guide vessels around the Keweenaw in 1851, and Minnesota Point was lighted to mark the entrance into the twin ports of Duluth/Superior 72 miles to the west in 1858, Devils Island, an important navigational landmark, remained unlighted for more than thirty years.

The Lighthouse Board took up the call of mariners, requesting an appropriation of $15,000 for the establishment of a station at Devils Island in 1888, and while Congress enacted legislation for the establishment of the station, they neglected to follow-up with the requested appropriation, and without the necessary funding, work on the station could not begin. After the Board reiterated the request for funding in its 1889 annual report, Congress responded with the requested funds on March 2 of that same year, and the Eleventh District Engineer dispatched a survey crew to the island to select a site and to begin the process of obtaining clear title.

While awaiting for title to the island to be decided in the Wisconsin courts in 1890, Eleventh District Engineer Major William Ludlow determined that the planned station would benefit greatly from the incorporation of a steam-powered fog signal and assistant keeper's dwelling, and without having included the appropriate costs in the original proposal, recommended that an additional $5,000 be appropriated for the new station. Congress quickly approved the additional amount on March 2 of that year, bringing the total amount of the Devils Island appropriation to $20,000.

The importance placed on this new station was evidenced by the fact that the plans called for it be outfitted with a flashing Third Order lens, an order of lens reserved for only the most critical aids to navigation on the Great Lakes. In fact, at that time only six Third Order stations were in operation in the entire

This fascinating photograph shows both the 1891 timber tower at right (behind the storage building) and the 1901 cast-iron and steel tower, left behind the dwelling. Note the absence of the structural bracing added in 1914. An oil house and fog signal building can be seen behind the ladies. They are standing on the tramway that runs from the landing to the fog signal building. U.S. Lighthouse Society photo.

The temporary timber tower erected on Devils Island in 1891 while funding was being sought for the construction of the permanent cast iron and steel structure. National Park Service Collection.

Eleventh District, with four of them located on Lake Superior at Whitefish Point, Au Sable Point, Manitou and Outer Island, another of the 22 islands making up the Apostle Group. However, after receiving a number of bids for the station's construction in 1891, the Board realized that it had significantly underestimated the costs associated with such a remote and inaccessible construction site. Estimating that the total cost for the station was going to end up closer to $42,000, the Board approached Congress for an appropriation of an additional $22,000 to begin construction.

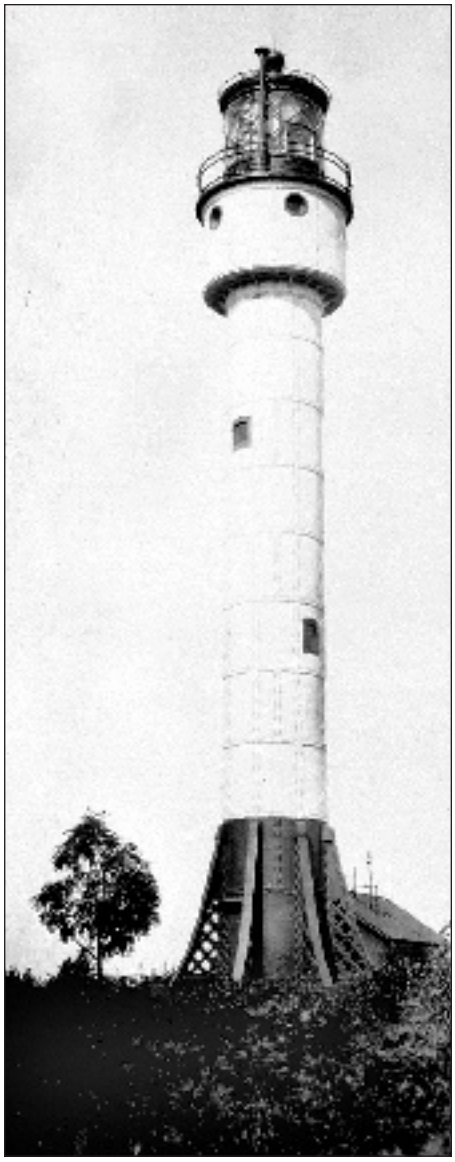
With no progress in reaching an agreement on the purchase of the island from the current owner, proceedings were initiated to acquire the property through condemnation. Realizing that it was highly unlikely that Congress would be forthcoming with the increased appropriation that season, and understanding that the lighting of Devils Island was critical to maritime interests, work quickly began on the construction of a temporary tower structure on the north shore of the island.

The temporary tower consisted of a skeleton timber-framed structure with an enclosed wood-sided watchroom. Standing 24 feet square at the base and 9 feet 6 inches square below the gallery, the structure stood approximately 60 feet in height. Outfitted with an octagonal cast iron lantern containing a fixed red Fourth Order Fresnel lens, the light stood at a focal plane of 87 feet by virtue of its location atop one of the island's cliffs. The Devils Island Light was exhibited for the first time on the evening of September 30, 1891, its light visible at a distance of 13 miles across the surface of the lake.

Work began on the island in earnest at the opening of navigation in 1892, with the construction of a 1½-story wood-framed outbuilding which would serve as temporary quarters for the construction crew as they worked through the summer. By October the station was virtually complete. A steam-powered hoisting derrick was constructed west of the site to allow supplies to be hoisted up the cliff, and a cellar was blasted in the rock with a 1½-story brick keeper's dwelling constructed atop this foundation.

A 100 foot-long trench was blasted in the rock to allow the connection of a sewage disposal pipe leading from the station's cellar directly to the lake, and a landing crib and boat house were constructed at the shore. A pump house and covered water delivery pipe were built to the fog-signal building located 500 feet northwest of the tower.

The fog-signal building itself was a wood frame structure with the exterior sheathed in corrugated iron and the interior surfaces



The 1901 tower as originally erected. Note the absence of the vertical support members added in the 1914 modifications. Photo from the author's collection.

sheathed with smooth iron sheets. The walls were packed with a mixture of sawdust and lime to help fireproof the structure, and a pair of steam engines by Thomas Manning Jr, & Co. were installed on concrete foundations within the building. The steam plants were plumbed to 10" steam locomotive whistles located high above the roof. A Crosby automatic controller was installed to ensure that the signal conformed to the predetermined 60-second repeated characteristic, consisting of a 5-second blast followed by a 10-second silence, 5-second blast and final 40-second silence.

However, without an appropriation of funds for the permanent tower and second

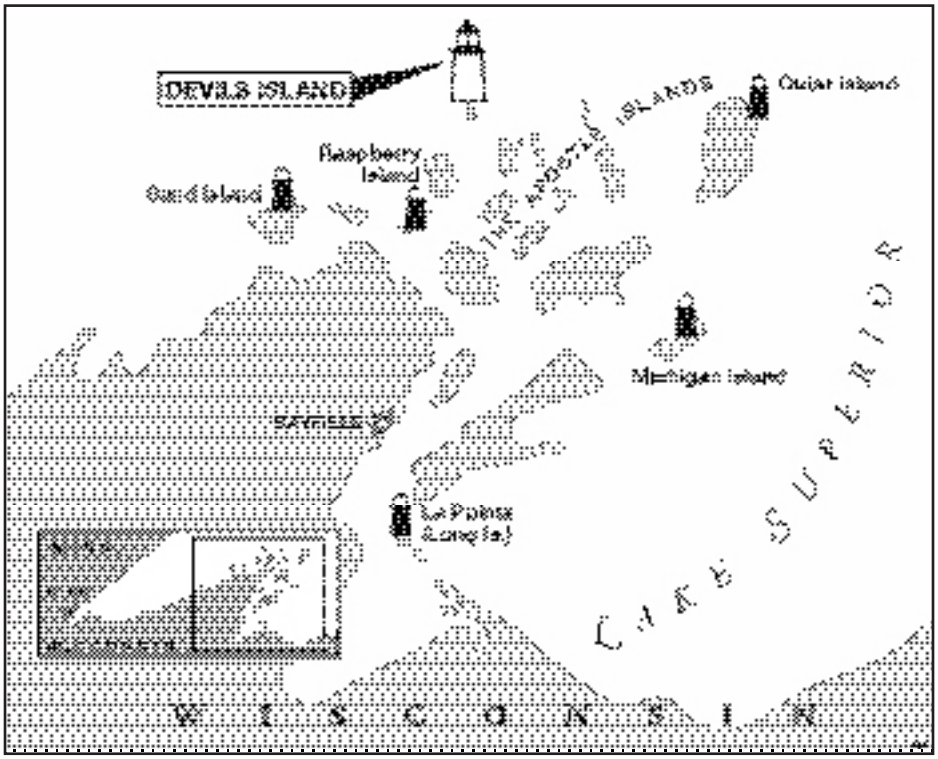
Left – 1914 view of the buttresses and support iron work at the foot of the tower to eliminate a vibration problem during high winds. Photo courtesy of Minnesota State Historical Society collection.
Right – A more detailed view of the Devils Island iron and steel tower, showing the bracing which was added in 1914 to the unsupported structure. Photo courtesy of the author.

keeper's dwelling, work on Devils Island came to a grinding halt at the end of the 1892 navigation season. The Lighthouse Board repeated its request for the funds in each of its annual reports for the following three years, with Congress finally authorizing the work on February 15, 1895, followed up with an appropriation of funds a month later on March 2. However, the wording of the appropriation specifically stated that the appropriation was to be spent on the construction of the permanent tower, and while the total amount of the appropriation was sufficient to complete the station, without written approval to build the keepers dwelling, construction of the dwelling remained out of the question. Congress amended the appropriation on June 11, 1896, allocating $4,000 of the remaining funds for the construction of the keepers dwelling. Condemnation proceedings were finally brought to a close in August with an award of $1,600 being paid to the former owner of the island.

With funding finally arranged, Eleventh District Engineer Major Milton B. Adams advertised bids for the metal work of the cast iron tower and placed the order for a Third Order Fresnel lens with Parisian lens manufacturer Henry-Lepaute. A working party arrived on the island on July 1, 1897 and work began on the second dwelling, and the construction of a 23' square, along with a 6' deep monolithic concrete foundation necessary to support the new tower.

The structural iron work of the tower was delivered to the Detroit Depot in June of 1898, and after a successful inspection, was loaded on the lighthouse tender Amaranth along with a working party and dispatched to Lake Superior. Arriving at Devils Island, the work crew extended the boat landing, repaired the boat house and steam powered derrick, and began erecting the 80 foot tall iron tower on the foundation laid the previous year. Work on the tower was completed on October 17th.

Consisting of a central cylinder created of ½" steel plates standing 8' in diameter, the entire structure was reinforced by eight iron buttresses featuring iron lattice work at the flared lower end which were bolted into the concrete foundation. The watchroom was outfitted with circular portholes and surmounted by a gallery on which was centered a circular cast iron lantern standing 8'



Above left – The 1892 corrugated iron fog signal building, showing the twin 10-inch steam whistles standing above the roof line.. U. S. Lighthouse Society photo.

The second fog signal building erected in 1926 housed a pair of F-2T diaphone fog signals. The diaphone resonators were installed on the opposite gable end of the building, and projected their sound across the lake. Note the tram car sitting on the narrow gauge track leading to the building and the radiobeacon antenna in the background. Photo by the author.

Below – Interior view of the Devils Island fog signal building. Note that the diesel-powered generators and air compressors which powered the F-2T diaphone were removed by the Coast Guard before the station was unmanned. Photo by the author.

After numerous delays in Paris, the Third Order lens and pedestal were finally delivered to the Detroit Lighthouse Depot in early 1901. The lens, District Lampist, a work party, and the materials needed for additional construction were loaded aboard the tender Amaranth, and delivered to Devils Island on June 22.

While the Lampist carefully removed the pedestal and lens segments from their wooded crates and hoisted them up to the lantern for assembly, the work party built approximately 1,000 feet of tramway connecting the various station buildings and cleared brush and timber to ensure that the new light would be visible from all directions. Work at the island continued until September 20, when the brilliant new Third Order lens was exhibited for the first time from the new lantern. This new lens represented a remarkable improvement over the old Fourth Order optic displayed from the timber tower. The bullseye lens rotated once every 20 seconds to emit a white flash of 1.3 seconds duration followed by an eclipse of 8.7 seconds, a red flash of 1.3 seconds and an eclipse of 8.7 seconds.

7" in diameter and outfitted with diagonal astragals.

Standing 80 feet from the foundation to the ventilator ball, the entire structure was given a coat of white paint, with the exception of the lantern room, which was painted black to help differentiate it from cloudy skies thereby increasing the towers effectiveness as a daymark. Since the new lens had not yet been received from Paris, the decision was made to keep the Fourth Order lens in the timber tower active until arrival of the new illuminating apparatus.

No longer serving any purpose, the timber skeletal tower and lantern were dismantled in 1904 and transported to Superior, WI, where it became one of the range lights at the entrance to Superior Harbor.

1907 saw the extension of the boat

Devils Island Light Station Principal Keeper Hans Christiansen feeding a group of ducks on the island circa 1930. Photo from the National Park Service Collection.

landing at Devils Island, and the construction of a 78-foot long rubble stone sea wall to protect the shore in the area of the boat house.

The keepers settled into a daily routine for the next 14 years with no major events or changes undertaken at the station. In 1914, the station's illuminating apparatus was upgraded from kerosene fuel to a more efficient incandescent oil vapor system with an increase in output of the white flash to 45,000 candlepower and the red flash to 35,000 candlepower. This resulted in an increased range to 18 miles. Also in 1914, in order to correct a stability problem similar to that previously encountered at the Sturgeon Bay Ship Canal Light, the new tower was retrofitted with four vertical columns connected by horizontal bracing, providing additional stability to the watch room and helped to increase the tower's structural rigidity.

As part of a network of stations being installed around the Great Lakes, Devils Island was outfitted with a radiobeacon system in 1925, with the system placed into operation on October 30. The transmitter was installed in a room off the fog signal building and connected to an antenna located 220 feet from the tower. During periods of thick weather the station transmitted repeated groups of three Morse Code dashes every 60 seconds at a frequency of 286 kilocycles followed by 60 seconds of silence.

The year 1925 also heralded the arrival of the gentleman who is likely the station's most influential and well-known keeper, Hans Christiansen. Born in Arnoje, Sjielland, Denmark June 22, 1878, Christiansen served at various times as a commercial sailor on the Great Lakes, a farmer, a seaman in the Spanish-American War, an international seaman before entering the Lighthouse Service in 1911 at the age of 33. He took the position of 2nd Assistant at Split Rock Light Station. After a brief stint in a similar position at Two Harbors, he accepted a promotion to the position of First Assistant at Eagle Harbor in 1913, where he distinguished himself for 12 years before accepting the promotion to keeper at Devils Island. He arrived to take over the station on April 16, 1925. Christiansen was an affable but firm keeper, with an all-consuming passion for fishing in the fecund waters around Devils Island.

Under keeper Christiansen's stewardship, Devils Island earned the reputation of being an efficient and well-run station, and it was the reason Devils Island was selected as a location for President Calvin Coolidge and his wife to visit at the tail end of an extended 88-day vacation to northern Wisconsin during the summer of 1928.

The Presidential lunch party on the rocky ledge at Devils Island on August 22, 1928. Note the President can be seen at the left head of the table, seated in a "comfortable chair." Photo courtesy of the National Park Service Collection.

At the appointed time of noon on August 22, the presidential flotilla, consisting of the yacht Nellwood, the Coast Guard Cutter Crawford, the steamer Madeline, two speed boats, and an entourage of over 50 set sail from Bayfield for the island. After viewing the island's sea caves and watching a group of local fishermen lifting their nets,

One of the two dwellings built at Devils Island to house the station's keepers. Photo by the author.

the presidential yacht tied-up a short distance southeast of the lighthouse at 1:00 p.m. and the group ate lunch on an broad rock ledge with an uninterrupted view of the vast expanse of the lake.

After lunch, the President toured and inspected the station with keeper Christiansen, during which time they discussed the quality of fishing around the island. The president signed his name in the station log book. The flotilla departed shortly after 2:00 p.m., and keeper Christiansen commented that "It's the first time in my four years here, or my 12 years at Eagle Harbor, that anything so great has happened." Christiansen declared that he would write to his inspector, telling him that "the lighthouse had been inspected and OK'd by the President of the United States himself."

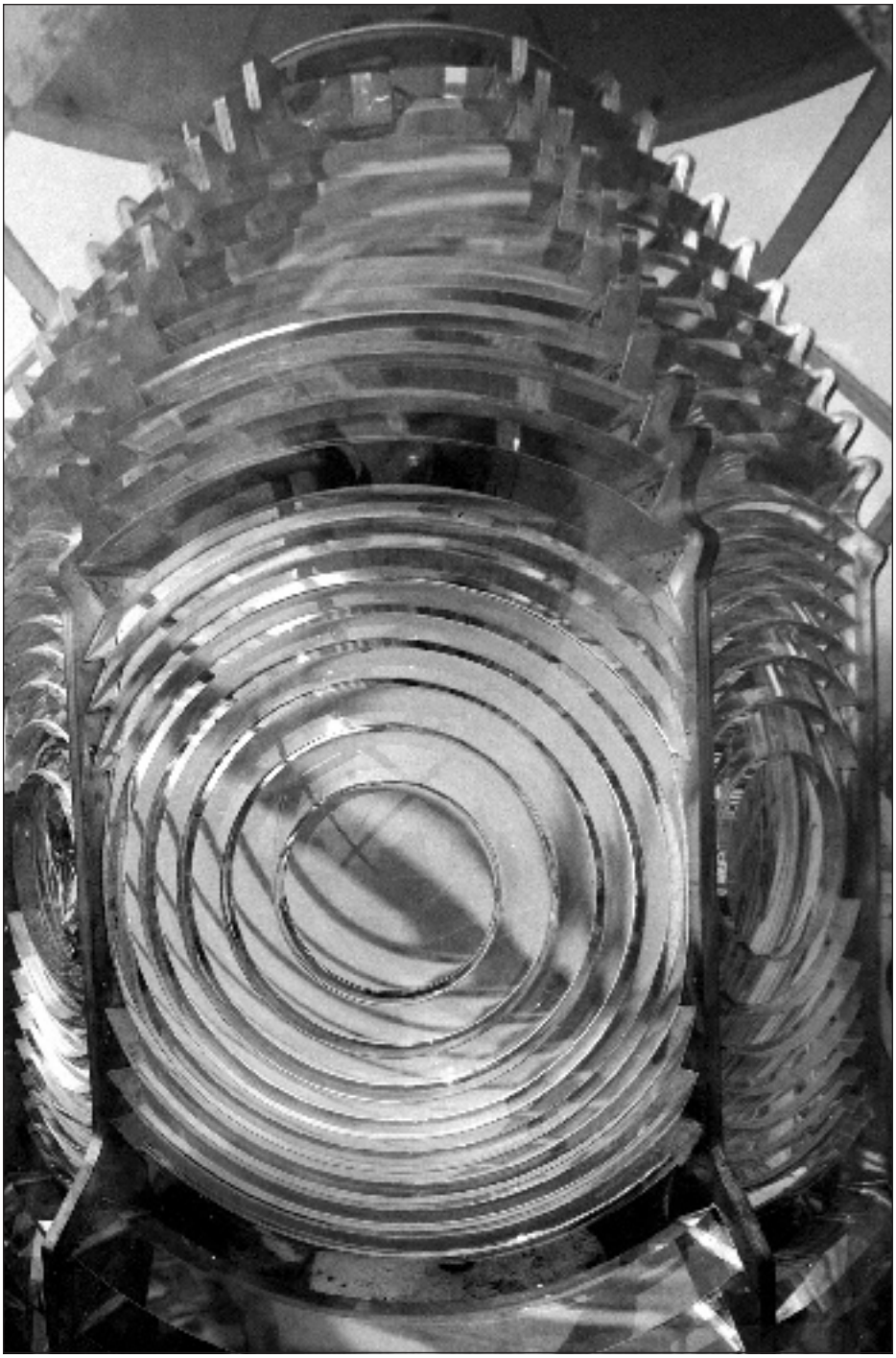
The year 1928 saw the complete electrification of the station through the installation of a diesel-powered electrical generator. The result was an increase in the intensity of the light to 300,000 candlepower for the white flash and 180,000 candlepower for the red flash. The flash characteristic was also changed to a white flash of 0.6 seconds followed by an eclipse of 9.4 seconds, red flash of 0.6 seconds and a final eclipse of 9.4 seconds. Because the stations in the Apostles chain closed down every December, the generator was winterized before the keepers departed and the light was simultaneously extinguished.

However there always existed the possibility that a few straggling vessels would be making their way through the thickening ice after the station was closed for the season, and would need a light to serve as a guide. To serve these late season vessels, that same year the lantern was equipped with a 200-mm, 130 candlepower acetylene-powered winter light on the gallery railing. With a large tank of acetylene located close to the base of the tower, the gas was piped up to the lens and automatically turned on and off every day by means of a sun valve. Utilizing a bimetal mechanism that expanded and contracted reacting to the difference in day and nighttime temperatures, it automatically controlled the flow of gas to the lamp.

At the advancing age of 56, keeper Christiansen decided that he needed to seek a station closer to civilization as he grew near

Above – The Devils Island station boat at the island dock circa 1938. Photo courtesy of National Park Service Collection.

Below – The Devils Island boat house and landing at the south end of the island in 2001. Photo courtesy of Bob Mackreth.



Above – A member of the Coast Guard working on the re-installation of the Third Order Fresnel lens in the Devils Island lantern, spring of 1976, photo by a local outfitter.
Left – The Devils Island Third Order Fresnel lens in 2002. Photo by the author.

retirement. Such a station was found at the new Minnesota Point Buoy Depot, and Christiansen departed Devils Island on May 5, 1934 to his new assignment. Unfortunately, he did not get to retire from the service, as was the case with many of the old lighthouse service keepers. He resigned his position when the Coast Guard was placed in charge of the nation's aids to navigation in 1939.

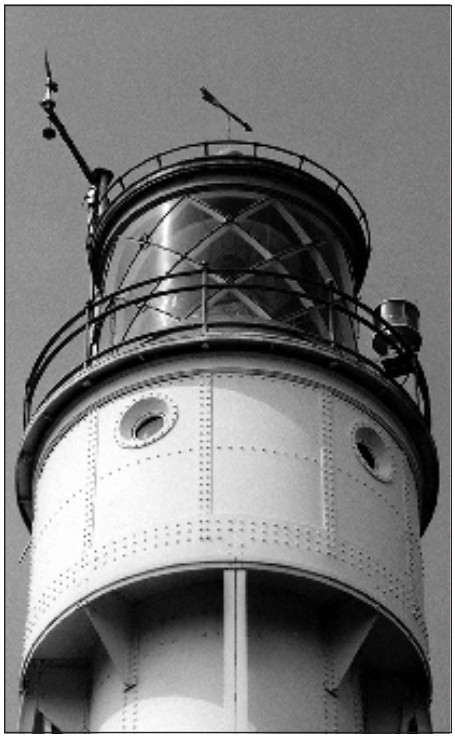
After President Nixon signed legislation creating the Apostle Islands National Lakeshore on September 26, 1970, most of the islands in the chain were incorporated into the National Park System. However, the Coast Guard continued to maintain ownership of all the light stations. As the other Apostle Island lighthouses were automated and their crews removed through the 1970s, a crew remained at Devils Island Light Station, using it as a base of operations to maintain and repair the other lighthouses in the island chain. Thus, in 1978 the Devils Island Lighthouse became the last of the Apostle Island lighthouses to be automated with the installation of a 12-volt solar-powered lamp within the Fresnel lens.

In 1986, Congress passed legislation transferring all lands within the Apostle Islands National Lakeshore Park boundaries over to the National Park Service. In a single stroke of the pen, all of the Coast Guard properties within the park were moved to NPS ownership, and while the Coast Guard still maintained the right to service the aids to navigation within the park, the NPS took ownership of all of the former lighthouse structures therein.

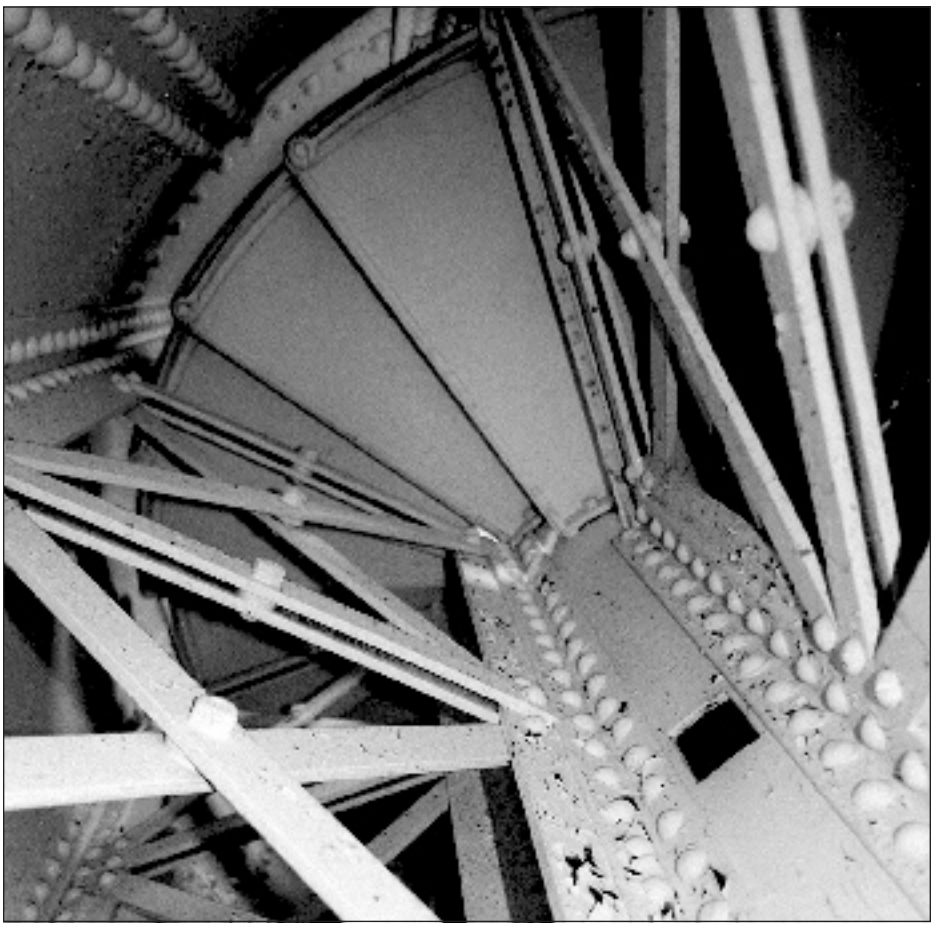
In order to protect Devils Island's magnificent Third Order lens from further deterioration and potential vandalism, the Coast Guard disassembled the lens and removed both it and the cast iron pedestal from the lantern in 1989, replacing it with a solar-powered acrylic 190 mm optic mounted on the gallery hand rail. The lens was shipped to storage at the NPS headquarters in Bayfield.

In 1992, the National Park determined that it would be fitting to restore the lens and return it for permanent display in the lantern atop the tower on Devils Island. After

An aerial view of the entire station showing the relative location of all buildings circa 1960. Note the fog signal building at right center and the path leading into the distance toward the keeper dwellings. This leads to the tramway hoist house approximately 1/8-mile down shore. U. S. Lighthouse Society photo.



Close-up view of the station's watch room and lantern showing the diagonal astragals. Note the Vega VRB-25 rotating lens on the gallery railing at right. The Vega optic now serves as the main light. Photo by the author.



considerable political wrangling, an NPS conservator arrived that summer in Bayfield to restore the massive lens. After restoration, the lens and pedestal were returned to their crates, loaded onto a Michigan National Guard Chinook helicopter on August 31, and flown back to Devils Island. After NPS employees erected a hoist on the tower gallery, and with a tractor on the ground providing the pulling power, the 600-pound components of the pedestal were hoisted back onto the gallery and into the lantern. With the pedestal reassembled in place, the lens sections were carefully hoisted to the lantern on September 1, and reassembled in place atop the pedestal.

While a Vega VRB-25 rotating optic mounted on the gallery railing still serves as the light source for the station, the Fresnel lens sits majestically in the lantern designed to hold it. Visitors fortunate enough to make landing on the island can climb the tower stairs and enter the lantern to marvel at the

Left – A view looking up in the Devils Island tower. Note the diagonal bracing within the structure. This bracing was designed to both center the spiral staircase and provide interior rigidity for the tower. Photo by the author.