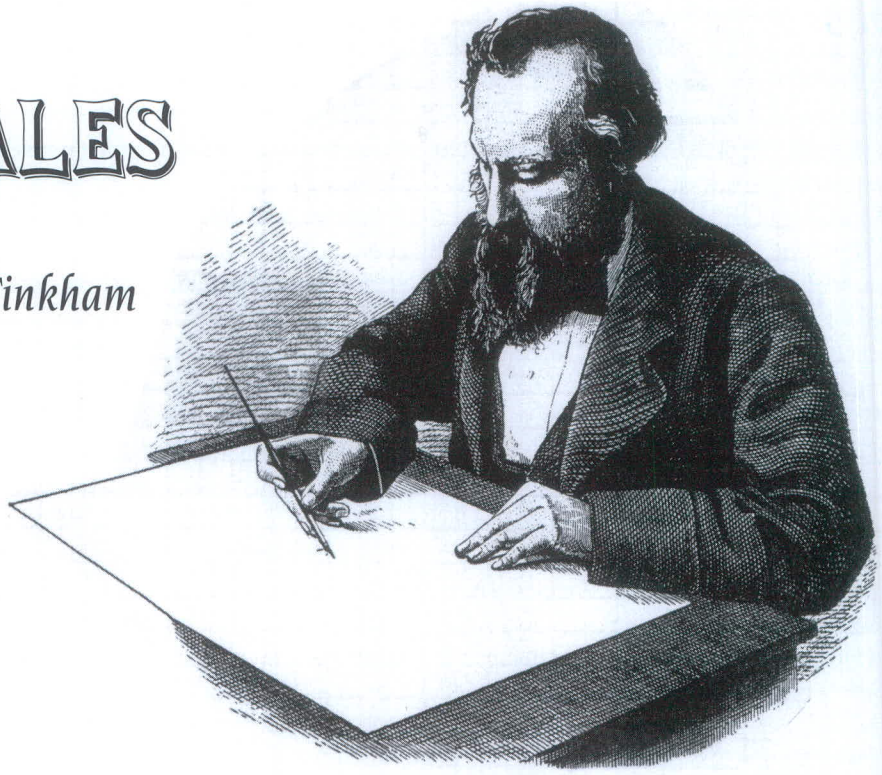
Reprinted from the U.S. Lighthouse Society's The Keeper's Log – Fall 2000 <www.USLHS.org>

TINKHAM TALES

Based on the Journals of Lighthouse Engineer Ralph Tinkham

Edited by Wayne Wheeler



Our Society has the good fortune to have acquired a historically valuable donation of the papers of Ralph R. Tinkham, Lighthouse Engineer. Presented by his granddaughter, the memoirs chronicle a fascinating career that led him far and wide as he moved up the ladder of positions within the U. S. Lighthouse Service to become Chief Engineer and, eventually held the position of Captain, Chief Engineer of the U. S. Coast Guard.

Ralph Tinkham graduated from the College of Engineering, University of Michigan in 1905. He joined the Russel Wheel and Foundry Company in 1906 as a design engineer, from which he was "loaned" to the Lighthouse Service to oversee the design and initial construction of the proposed Rock of Ages Lighthouse. Working for the firm's structural steel division, but from the Lighthouse Service 11th District offices in Detroit's Customs House, he worked on the Rock of Ages project until he resigned the firm in 1908. He then began employment with the Lighthouse Service as the Superintendent of Construction for the 11th Lighthouse District (Lakes St. Clair, Huron and Superior).

For the next 38 years Tinkham was involved with numerous lighthouse projects across North America, from the Great Lakes to Alaska – even to Panama. After his retirement in 1946, he wrote a massive tome about his experiences, laced with anecdotes.

Over several issues of *The Keeper's Log*, we will publish some of his more interesting memories as part of a series called "The Tinkham Tales."

The Inland Seas: A Beginning

Over fifty years before the opening of the St. Lawrence Seaway (1959), I was building lighthouses and related engineering projects in some of the most isolated regions of the Great Lakes and along their connecting waterways. Even in those years, the waterborne commerce on this inland freshwater sea was of great magnitude — although commerce was restricted to eight months of the year because the connecting waterways were frozen in solid ice during the winter, effectively terminating the operation of the ships. During those eight months, however, there was almost a continuous procession of cargo vessels, both downbound with iron ore, wheat and other products of the northwest, and upbound with coal, steel products and other cargos from the central and eastern states. These ships followed two main feeder routes... from northern Lake Huron, one through Lake Michigan to Chicago and other ports, and the other to the Lake Superior ports of northern Minnesota, Wisconsin and northern Michigan, via the St. Mary's River and through the locks of Sault Ste. Marie – "The Soo." A gauge of this commerce is the fact that the tonnage of the cargo passing the Soo Locks alone in eight months was double that passing the Panama and Suez Canals combined in twelve months. Obviously, the provision of aids to navigation for the protection of commerce of this magnitude was of paramount importance.

Already, several lighthouses of exceptional engineering merit had been constructed. The most outstanding, doubtless, were those of Spectacle Reef in northern Lake Huron (1874), and Stannard Rock in Lake Superior (1882), both marking subaqueous rocky reefs that had wrecked ships in former years.

My initial undertaking in lighthouse engineering was the structural design of Rock of Ages Lighthouse in Lake Superior. On loan from the structural steel division of the Russel Wheel & Foundry Company of Detroit, I was employed as designing engineer for their first lighthouse... completed during the winter of 1907-08. During those few months, my initiation into the fascinating ramifications of lighthouses and their intricate lighting and fog signal equipment was acquired under Superintendent Todd (11th Lighthouse District).

Reprinted from the U.S. Lighthouse Society's The Keeper's Log – Fall 2000 <www.USLHS.org>

Rock of Ages is the geographical name of a rock ridge jutting up from the floor of Lake Superior five miles from the southern extremity of Isle Royale. On this rock the lighthouse was built and from it, took its name. This lighthouse serves both as protection and a guide to shipping to and from north shore ports.

Isle Royale was a mysterious and isolated region. It is an island 45 miles long and seven miles wide, situated parallel to and fourteen miles distant from the northwest shore of Lake Superior.. wholly within United States waters and part of the State of Michigan; the international boundary loops up and around its northern extremity. It is now a National Park, but [in 1913 it was largely] uninhabited; its only occupants were transient summer excursionists in a small lodge at the entrance to Washington Harbor, a narrow inlet extending five miles into the southwestern end of the island opposite Rock of Ages. [There were also at least a dozen families, primarily Norwegian and Swedish immigrants, who fished seasonally from several points on the island.] True, there were lighthouse keepers, but not on the island itself. Standing like offshore sentinels were Rock of Ages Lighthouse (1907-08) at the south end, Isle Royale Lighthouse (1874) on an islet off the southeast shore, and Passage Island Lighthouse (1881) on a small island... off the north end. At the time, much of Isle Royale was owned by copper mining companies... they had prospected Isle Royale extensively and constructed a mining camp at the upper end of Washington Harbor, but mining operations ceased and the camp was abandoned.

To facilitate the construction of the Rock of Ages Lighthouse, the buildings of the abandoned mining camp at the head of Washington Harbor were leased from the mining company... to be used as living quarters for the workmen, and for the storage of supplies, tools and construction materials. One exception to the lease was a large residential structure built of hewn logs. Formally the domicile of the mining superintendent, this building stood off to one side of the group of camp buildings, at a higher elevation above the harbor. From the shore fronting the premises leased by the Lighthouse Service, a wharf extended into the harbor... for mooring lighthouse tenders when delivering materials and supplies, and to which the steam launch and barges used on construction of the lighthouse were tied up. From camp, it was five miles to the mouth of the harbor, a narrow rock bound fjord, and from there to the Rock of Ages, another five miles over open water of Lake Superior. These ten miles was traversed each morning after breakfast in camp, transporting workmen and materials to the Rock, and again at the close of the day, returning men to the camp for supper and the night.



The buildings used as a residence and office for engineer Tinkham and his crew are at far right. The large building in the foreground is a private men's hunting and fishing club, and formerly the offices of a copper mining company. Photo courtesy of the National Park Service, Isle Royale National Park.

One of the camp buildings was a five room house... formally the foreman's dwelling. Here were the quarters of the superintendent in charge of the construction of the lighthouse, the assistant superintendent (myself), and the timekeeper-clerk. The two main floor rooms on the left of the entrance hall were used as headquarter offices: the one room on the opposite side of the hall was the sleeping quarters of the superintendent, when present, which was seldom. On the second floor.. were two large rooms, one on the left the bedroom of the timekeeper-clerk and the one on the right used by myself as a sleeping room and drafting room. It was here, on weekends and on days when weather conditions prevented work at the Rock, that I worked out details of this project as it progressed, and began the preliminary design of Split Rock Light Station which was to be built the following year on the north shore of Lake Superior in northern Minnesota.

The superintendent... was absent most of the time on the mainland directing the procurement and shipping of construction materials, recruiting and dispatching the skilled labor required, and attending to other business details. Consequently it fell to me, as assistant superintendent, to direct and supervise the construction work at the Rock during those periods... the construction was carried on by force-account, that is, by hired labor directed by officials of the Lighthouse Service, and not by contract. When construction bids were called for, the bids submitted were excessive – far above the amount of appropriated funds available for the project. This was due to the isolation and exposure of the site, with a high degree of risk to the contractor... consequently the Lighthouse Engineer rejected all bids, and

Reprinted from the U.S. Lighthouse Society's The Keeper's Log – Fall 2000 <www.USLHS.org>

directed the organization for force-account construction by his own staff. We succeeded in completing the project within funds available.

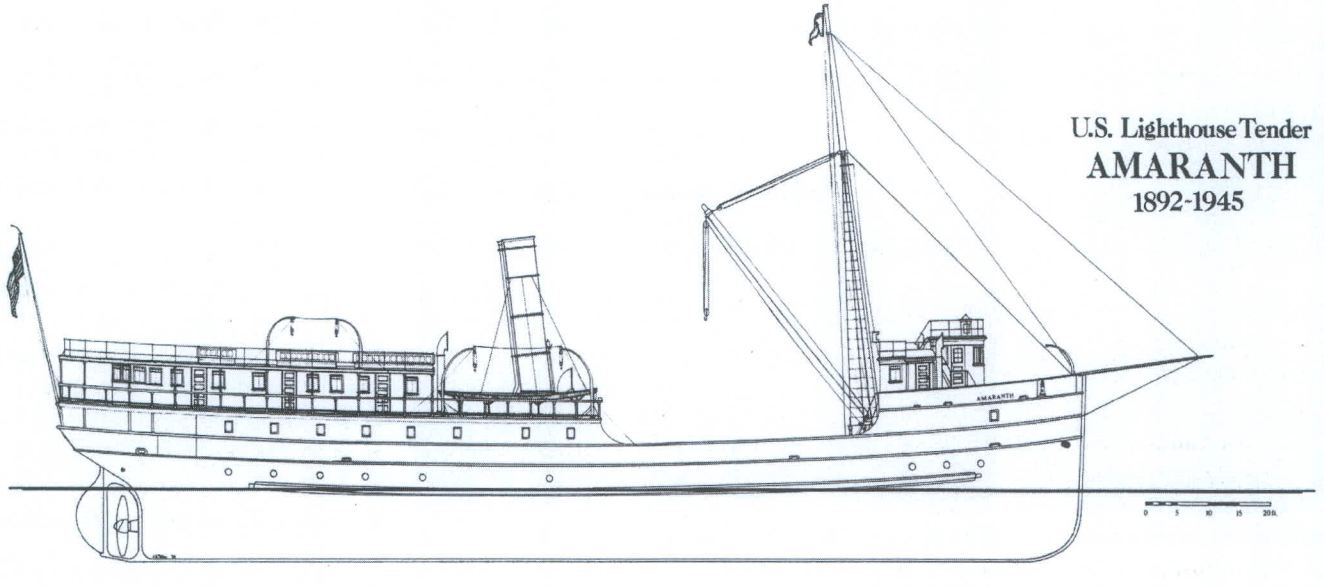
The construction force varied from thirty to fifty men, and changed in composition from time to time as the work progressed, depending on the character of construction underway. This force included... quarrymen, structural steel workers, concrete workers, brick masons, carpenters, painters and various tradesmen, as well as common labor, cooks and kitchen help. The installation of the fog signal machinery and lenticular apparatus (lens) was performed by lighthouse technicians from the Detroit shop [11th District Lighthouse Depot]. These were brought [to Isle Royale] by the tender *Amaranth*, a cargo and passenger vessel operated by the Service for construction and maintenance work in the 11th District. It was commanded by a veteran shipmaster, Captain L. M. Stoddard, incidentally, a highly educated man who later became Superintendent of the 12th District (Lake Michigan).

My first trip to Isle Royale was... aboard the *Amaranth* from Detroit early in the spring of 1908. I had resigned my position with the Russel Wheel and Foundry Co. to accept appointment as Superintendent of Construction in the Lighthouse Service. The first voyage to and across Lake Superior was memorable in the annals of my career on several accounts. It was my initiation to shipboard travel, it carried me through a terrific spring storm on Lake Superior, and assailed me with my first, my last, and only experience with seasickness. During the forty years that followed, much of it spent aboard ships or small craft, not only on the Great Lakes, but also in the Atlantic, the Gulf of Mexico and the Pacific Ocean, never again was I seasick. However, the one bout with it on Lake Superior remained a poignant memory, such as to elicit my sympathy ever after for others so afflicted.

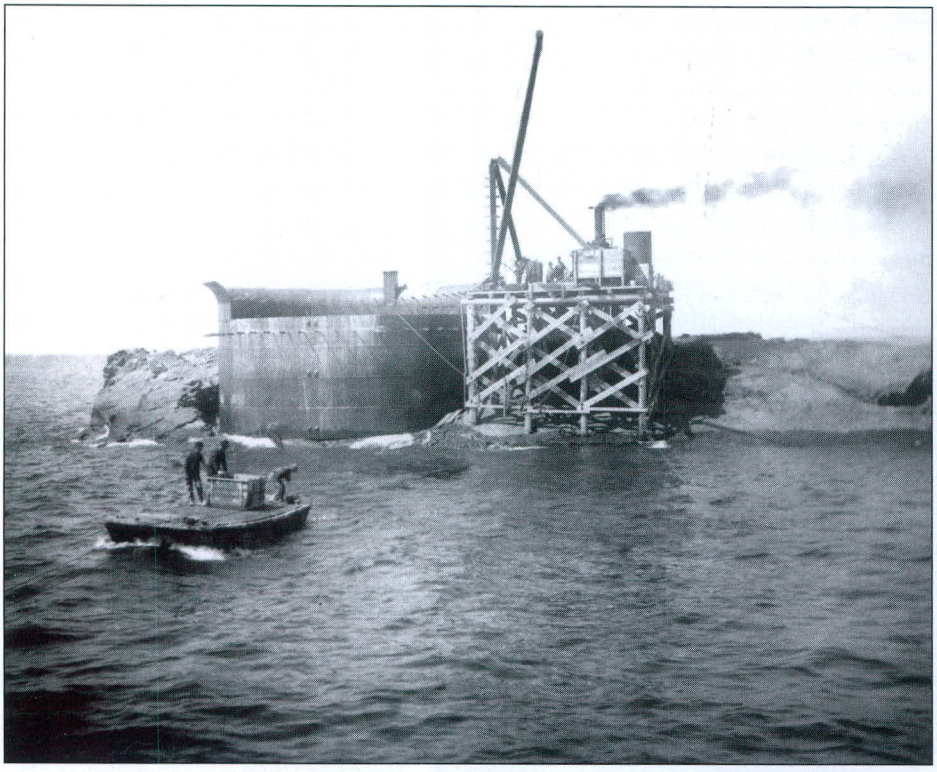
The spring and fall storms on the Great Lakes become a grave danger to shipping and are truly awesome. Many have been the tragedies of shipwrecks and loss of life in these storms over the years, even to the foundering of some of the great ore carriers... the freshwater of the Lakes is much lighter of weight than the saltwater of the oceans... because of this light weight... storm seas on the Great Lakes are much higher and [and the distance between waves] shorter than with saltwater. A contributing factor is the relative shallowness in most of the Lakes.

So severe did that storm in the spring of 1908 become, that for the safety of his ship, the captain changed his course and took the *Amaranth*, then well out [in the middle of]... Lake Superior, directly south into the harbor of refuge at Grand Marais, Michigan, which was reached at midnight. So great were the seas that the ship actually touched bottom in the trough of one as it entered the harbor between the jetties. On going ashore the next morning I experienced for the first time, with stumbling gait, that phenomenon of undulating streets and sidewalks, induced by the sensory carry-over of the violent motions of the ship on the night before.

To construct the foundation of the Rock of Ages Lighthouse it was necessary first to blast off a section of rock, which was a jagged ridge of basalt a hundred yards in length and twenty yards wide at the waterline, rising fifteen feet above water to a sharp crest like a giant coxcomb. Quarrymen drilled and blasted a section sixty feet wide out of the center of this ridge down to a roughly level floor just above water level. On this level section was erected a cylindrical wall built up of heavy steel plates riveted together, anchored to the rock, and the cylinder then filled with mass concrete, forming a pier fifty feet in diameter and 25 feet high. On this pier was then erected the structural steel, skeleton framework of the lighthouse tower, designed not only to carry the load of its walls, floors, and surmounted lantern room, but to resist hurricane winds, breaking seas, and the stresses imposed by the enormous quantity of ice that piles up over the pier and around the tower during the winter months. Supported by this steel structure, the outer and inner walls of the tower were built of brick masonry, with architectural trim of molded cut limestone, and the multistoried floors, of terra cotta tile finished with cement,



Reprinted from the U.S. Lighthouse Society's The Keeper's Log – Fall 2000 <www.USLHS.org>



Above – The construction crew's steam launch departing Rock of Ages with the construction of the base of the lighthouse well underway.

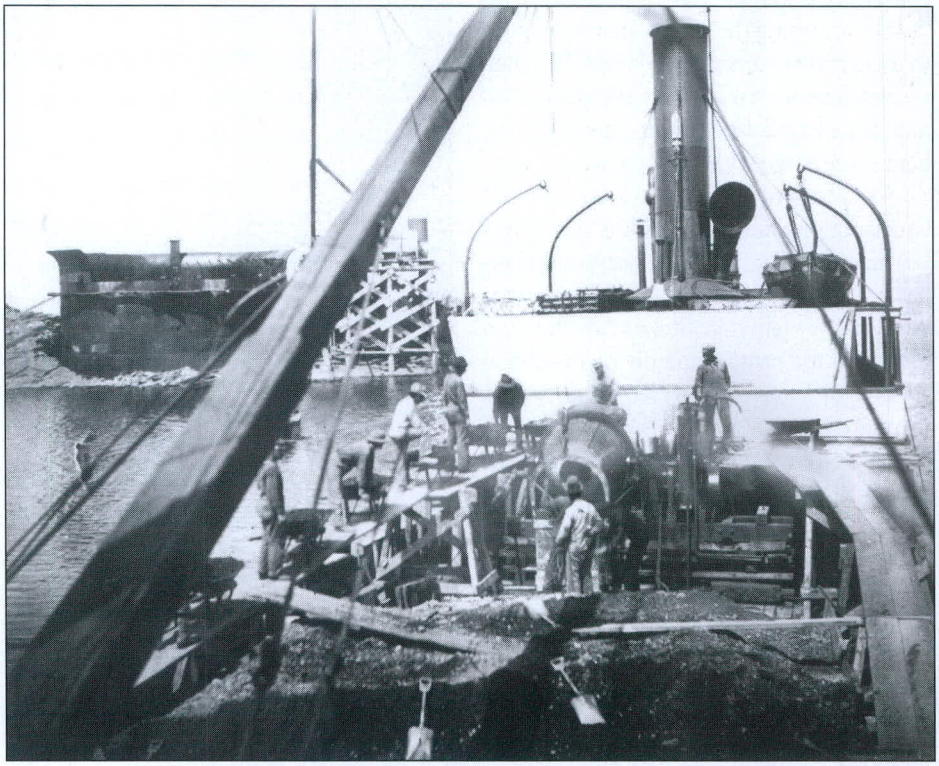
supported on radial steel beams. Spiral stairs, fabricated from cast iron sections, connected successive floors. The overall height of the lighthouse was 130 feet above lake level.

Until the tower was enclosed, all workmen, tools and materials were housed at the base camp at the upper end of Washington Harbor and transported to the site by barge and steam launch… As soon as the tower was enclosed, a timber platform was built as the level of the pier deck, extending out over the rock ridge, on which was erected a combined bunkhouse mess hall and galley… to accommodate thirty men with separate quarters for the assistant superintendent and timekeeper. The platform was wide enough to provide a gallery entirely around the building and connecting with the pier, protected by an outside wooden railing. These accommodations became available in early fall at a time when stormy weather was more frequent and prolonged, so the work was greatly expedited by having the main working party living on the Rock and not subject to protracted delays because of inability to reach and land on the Rock in bad weather.

The base camp at Washington Harbor continued to be maintained by a skeleton crew for the storage of materials and mooring the launch and supply vessels.. During the fall there was much stormy weather, and there were frequent occasions when the launch was unable even to approach the Rock because of heavy seas. In such weather, seas would break clear over the rock ridge, surging beneath the deck of the platform, water spurting through the cracks in the floor of the quarters. This temporary structure was sturdily built, however, with heavy wooden framing securely anchored to the rock, so it withstood this battering even though it would shake with vibrations from impact of the seas; the Rock itself would vibrate at times when breaking seas thundered against its jagged side.. Although effort was made to maintain sufficient supplies on the Rock to meet emergencies, storage space was extremely limited, and on more than one occasion subsistence supplies got so low before the launch could make contact, that the men were on short rations for days. On some of those occasions the crew of the launch took desperate chances to land badly needed supplies in canvas-wrapped boxes attached to heavy lines.

Fortunately the status of the work permitted the completion of the lighthouse to proceed without interruption due to weather. After moving to the Rock from the base camp, neither the timekeeper nor I left it until the lighthouse had been completed in late October, and we were then taken off for transportation to Detroit. Life on the Rock was extremely restricted, of course, but it was

Below – Workmen employing a cement mixer aboard the *Amaranth* which is hove to off the Rock of Ages construction site. Both photos courtesy of the National Park Serrvice, Isle Royale National Park.



Reprinted from the U.S. Lighthouse Society's The Keeper's Log – Fall 2000 <www.USLHS.org>

far from monotonous. During daylight hours there was the business of construction progress, and the countless details of interior finish and installation of equipment. It was then many years before the introduction of radio broadcasting, which subsequently was to relieve the isolation and loneliness of offshore lighthouses, so our evening relaxation consisted of writing up the log, reading magazines, and playing cribbage; the timekeeper and I, sole executives on the Rock, played so much cribbage that it seemed we could peg with our eyes shut.

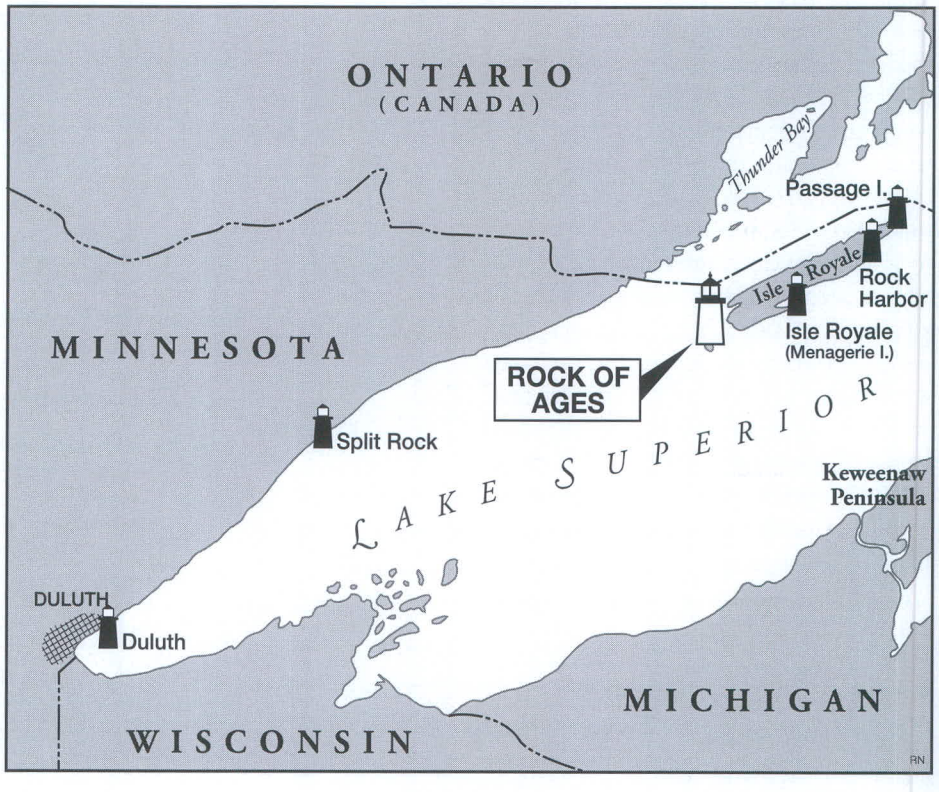
From day to day there were incidents to enliven the tedium and appeal to one's sense of humor. In a gang of thirty construction men and mechanics there are invariably a few exceptional characters that make life interesting and often hilarious. One day while busy on one of the upper floors of the tower, there came to my ears a sudden commotion and much shouting from outside. Going quickly to a window in the tower overlooking the living quarters and platform, I saw the cook wildly chasing the cookee around the gallery, wielding a big butcher knife in his hand and yelling imprecations. Hurrying down the tower to the pier deck I emerged just as the cook had been intercepted by some of the men, and the cookee had disappeared into the bunk house. The cook was a veteran of logging camps with gray in his hair, the cookee a youngster in his teens who took delight in baiting the cook, often heretofore to the amusement of the workmen. This time he had gone too far with his practical jokes, and, for a hectic few minutes the cook was bent on revenge with mayhem in his heart.

As is often the case in an isolated construction camp, the cook is not only a key man in the organization, but he is a character whose background and years of experience qualify him to contribute much to the morale of the camp Primarily he must be a good cook , for the surest guaranty of a contented crew is a hearty [meal] prepared by a skilled cook, but his temperament, too, can serve as a catalyst for harmonious associations within the camp. I was to encounter this situation many times over the years to come.

During the summer months, preceding the move to quarters on the Rock, there were occasional opportunities for recreational activities at the base camp. The summer was unusually clear and crisp, the days magnificent and invigorating. On Sundays work was suspended to rest the men, and I seized the opportunity for long hikes of exploration up through the rugged terrain of Isle Royale.

Back of the harbor camp buildings, bordering the upland forest, were wild, open meadows. Frequently flocks of blackbirds swept over these meadows, alighting in groups to feed among the grasses and weeds. On one occasion when *Amaranth* was moored at the harbor wharf unloading materials, Captain Stoddard, its master, carrying on a bantering conversation with the camp cook during the noon meal in the mess hall, agreed to shoot and bring in a bag of blackbirds if the cook would agree to bake us a blackbird pie. Believing the captain was kidding him, the cook jokingly agreed. But the captain wasn't joking. In his cabin aboard the *Amaranth,* he had a rack of guns. Going on board, he brought of a .22 rifle. Asked how he expected to shoot blackbirds with a rifle, and why he didn't use a shotgun, he explained that a shotgun would fill these small birds with so much lead they would be useless for a pie, and he proposed to shoot their heads off with a rifle. Incredulous, I accompanied him on this foray. Sure enough, resting the rifle on the top of an occasional fence post, and drawing a bead on an unsuspecting blackbird, he shot its head off. Repeating the performance, the captain, a crack shot with any gun, and a dedicated hunter whenever the opportunity invited, proceeded to bag over two dozen blackbirds, shooting off a head at least four out of five shots; the birds were so numerous and indifferent that they provided endless targets. The camp cook stared, hardly believing his eyes, when this bag was brought in, but he was game [so to speak]. How he plucked and dressed those small birds was not observed, but he subsequently set before us at the officer's table… a most delectable blackbird pie, a welcome diversion from the usual camp fare.

If Rock of Ages Lighthouse was a striking landmark, fifty [92] years later, it still is. Its appearance at a distance resembles the imposing structure of the world famous Corduan lighthouse on the coast of France, rising 130 feet above the water, the plate glass panels of the iron lantern at the top enclosed the powerful revolving Fresnel lens that projects brilliant beams of light at night, in successive flashes [two flashing white lights every ten seconds] of 400,000 candlepower [2nd order lens], visible as far away as Keweenaw Point. Within the spacious room in the base of the tower at pier level are the machinery and the regulating apparatus for operating sonorous fog signal trumpets when-



Reprinted from the U.S. Lighthouse Society's The Keeper's Log – Fall 2000 <www.USLHS.org>



Rock of Ages Lighthouse in the 1950's. U. S. Coast Guard photo.

ever fog or snow obscures the lighthouse. Below this deck within the mass concrete pier are storage tanks. On the several floors, one above the other within the tower, are storage rooms, living and sleeping rooms for the keepers, and, beneath the lantern, a watch room where the keepers in rotation, standing watch, maintain uninterrupted vigilance twenty four hours a day, seven days a week, observing the weather and regulating the proper operation and timing of the light and signals.

In those times keepers were relieved periodically for shore liberty due them, and new keepers were installed and others transferred from time to time, but the signals displayed by the lighthouse were never interrupted from the opening of navigation in the spring, when the first crew might have to chop its way through a mountain of ice to gain entrance to the tower until the close of navigation in early winter, when the crew was taken off and transported to the mainland. During the winter months a minor [optic] of 300 candlepower was displayed automatically operated by compressed acetylene gas... as a warning to craft that might be out on the lake during those months. Some twenty-five years after the completion of this station, a radio beacon was installed. Through scores of years to come, perhaps centuries, this lighthouse will exemplify the timelessness of its name, Rock of Ages.

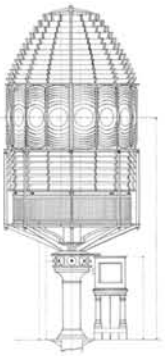
Epilogue

Rock of Ages Lighthouse was completed in 1908. The initial estimate to construct the lighthouse was $50,000. It was found to be hopelessly inadequate and in March 1905 Congress funded $25,000 just to study the feasibility, and followed up with an appropriation of $100,000 the next year. After completion $15,000 was authorized to purchase a 2nd order Fresnel lens. The lighthouse became operational in September 1910. The lighthouse was automated in 1978. The lens was subsequently removed during a Coast Guard solarization project, and transferred to Isle Royale National Park, a unit of the National Park Service, in 1985. It is now on display in the Windigo Visitor Center in Rock Harbor, near the site of the construction crew's Isle Royale base camp. Perhaps, as Ralph Tinkham predicted, Rock of Ages will shine forth over the western waters of Lake Superior for centuries, but it will do so as an automated light, the keepers having served for only 68 years.

Rock of Ages was a remote and arduous manned station. Some years, winter set in unexpectedly early, making removal of the keepers for the season a difficult task. 1919 was one such early winter, when the Lighthouse Service tender *Marigold* risked severe weather conditions to remove the keepers of several Lake Superior light stations. The ship finally arrived at Rock of Ages on December 16 at a point when the food supply was down to a single can of tomatoes.

The presence of a lighthouse has not always ensured that a vessel was safe from the obstruction it was warning of. In May 1933, the passenger ship *George M. Cox*, on its maiden voyage, ran aground on a nearby reef. Keeper John Soldenski helped rescue all 125 passengers, who spent the night crammed in the tower until a vessel arrived the next day to take them from the isolated lighthouse.

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



Restoration & Preservation



Thomas Point Shoal Lighthouse, MD

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

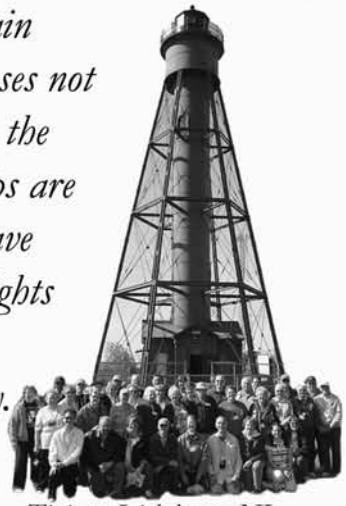
Help Support Our Important Mission!

Education



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

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



Tinicum Lighthouse, NJ

To learn more visit

www.uslhs.org

or

call Headquarters at

415-362-7255