

LOG

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FURNISHING WATER AT LIGHT STATIONS

By Wayne C. Wheeler



ne of the most important aspects of America's far flung light stations was the question of supplying water, not only for domestic use but, in some cases, for the boilers that supplied steam for sound (fog) signals.

Some light stations were in, or close enough to, a town that city water was available. Several light stations were located in areas where drilling a well was possible, but many had no access to municipal or well water. The light stations along the shores of the Great Lakes certainly had no water problems.

Those stations located in seasonally dry areas, like California, or constructed as stand-alone off-shore structures in saltwater (crib, caisson, pile, or screw-pile structures) required unique solutions. Even some rocky islands required special solutions.

From the earliest Colonial lighthouses to the mid-19th century, stations were left to fend for themselves to obtain water and other necessities. Following are the words of a few New England keepers mentioned in an 1847 inspection of Maine light stations.

West Quoddy: "We have no rain water cistern, no well. Our water for domestic use is obtained from a spring 200 yards from the dwelling."

Libby Island: "I have no rain water cistern and no well for fresh water, nor has there ever been either here. All the water used by my family for domestic purposes is caught from the roof of the dwelling house into two hogs head which I bought for the purpose."

Petit Manan: "I have dug a well at my own expense, the former keeper had to go over to the mainland for water, a full six miles."

Mount Desert Rock: "All the water we have for domestic use is caught in three wooden tanks placed in the cellar from the rain that falls on the roof of the house. After a storm the roof is covered with salt from the drift spray, and this salt is washed off by the next storm into the cisterns. One cistern is rotten the other leaky."

Whitehead Island: "I have neither well or rain water cistern. All my fresh water is obtained from hollows in the rocks, or when that source fails, I go to the mainland and procure a supply."

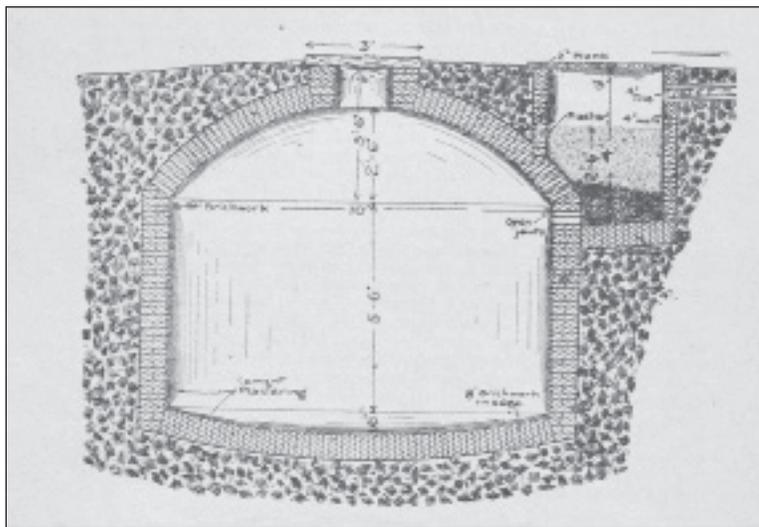
There are many more examples of the difficulty the New England keepers had in obtaining water. But things improved mid-19th century when the Lighthouse Board took control. However, with the board, new types of lighthouses were constructed that required innovative means for furnishing water; off-shore structures in saltwater, like crib and pile lighthouses, and those on the West Coast where the summers are dry, precluded, in many cases, any thought of wells.

The first West Coast light stations (1860s) employed rain water diversion

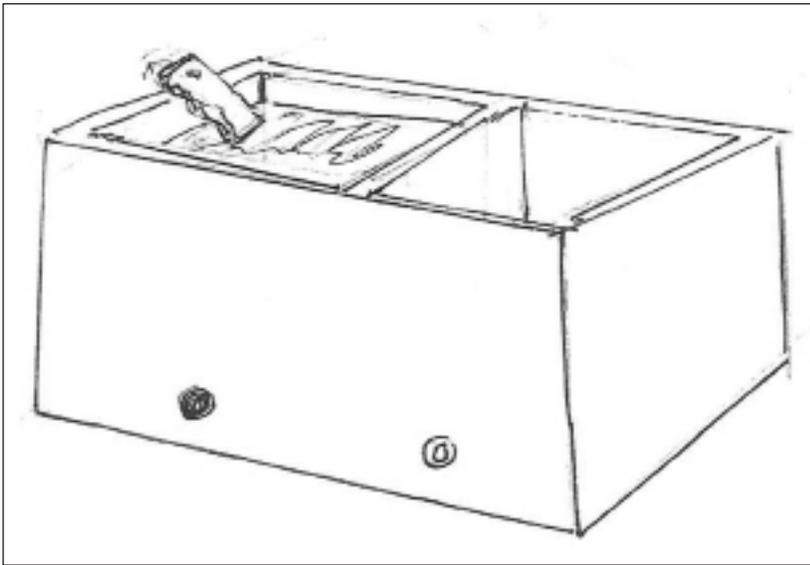
from the roofs to cisterns either alongside the dwelling or in the basements. A hand pump at the kitchen sink brought the water into the dwelling.

Some cisterns or water holding tanks in the basements of dwellings consisted of a large open concrete tank divided into two compartments. This allowed the keeper to drain one for cleaning while the other retained water. Keepers sometimes floated a board in the water of a tank with one end resting on the side. This allowed any animal like a rat, mouse, or squirrel to exit the tank. After all, one doesn't want a dead rat in one's drinking water.

Those areas with dry seasons (raining only in the winter) used either water diverted from the roof to cisterns located beside the dwelling or cisterns in the basement. In some cases where there was ample land, a flat rain catchment area of cement was laid, sloping to drains and into holding tanks. At East Brother Island, in San Pablo Bay, California, the center of the 7/8-acre islet was covered in concrete with a domed cistern in the center. Holes circled the cistern at the base. During the



Drawing of an underground cistern from an 1895 pamphlet "Drinking Water in its Relation to Malarial Diseases." Public domain image.



Left: A two-well concrete cistern. One compartment may be drained for cleaning while the other contains water. A board laid from the edge to the water allows vermin to escape. Drawing by the author.

Below: Cistern at Thomas Point Shoal Lighthouse in Maryland. Photo by Henry Gonzalez.

dry summer months plugs were inserted in the holes. After the first rain washed the surface clear of bird droppings and other debris, the plugs were pulled, allowing the next rains to fill the cistern. Water was pumped from the cistern up into a 20,000-gallon redwood tank. At San Luis Obispo Light Station, a large rain catchment surface was installed on a slope behind the dwellings to capture rain water.

In Alaska, stations like Eldred Rock and Point Retreat of southeast Alaska

were periodically provided water by a buoy tender. At Point Retreat the ship would lie along the dock and pass water to the station by water lines (hoses). At Eldred Rock there was no pier or dock. The buoy tender would arrive on a calm day at low tide, place the bow of the vessel on the rocky shore, and “ride” the tide up while a water line was placed ashore. Most Alaskan buoy tenders had reinforced (ice breaker) bows. The ship would maintain a few turns of the screw



(propeller) and “steer” a course. If the helmsman needed more than, say, 10 degrees of rudder to maintain course or more than so many knots of speed, then the water line was disconnected and the ship backed off the island. The tide range in southeast Alaska is 19 feet.

The small screw-pile lighthouses of the Chesapeake Bay, and a few other locales, directed rain water from the wood-shingled roof into wooden cisterns in the dwelling. The larger metal screw-pile and pile structures of the Florida reefs also captured rainwater from the dome of the tower and sent it to on-board cisterns. The problem with this situation was that the metal domes were sometimes painted with red lead or other toxic materials causing sickness and worse for the keepers.

Light station keepers and families learned from an early age to conserve water.



Cisterns at Bodie Island Lighthouse, North Carolina, 2002. USLHS archive photo by J. Candace Clifford.