



# Kīlauea Point Lighthouse

at

## Kīlauea Point National Wildlife Refuge

Kauaʻi, Hawaiʻi

Kīlauea Point is the northernmost point of land on the inhabited Hawaiian Islands, the first landfall seen by ships arriving from the Orient. This, plus the height of the peninsula, is why the site - 31 acres - was purchased by the American government in 1909 for the construction of a lighthouse. The purchase price was \$1.00! Construction began in July 1912, and the Kīlauea Point Lighthouse was dedicated on May 1, 1913, with a luau that included residents of the nearby Kīlauea Sugar Plantation.

The centerpiece of the lighthouse's "Crown Jewel" is the lens designed by Augustin Fresnel and fabricated in Paris, France, by the firm of Barbier, Bernard & Turenne. A Fresnel lens is a concentrated version of a standard lens. Hundreds of glass prisms concentrate and focus the light passing through the lens. The lens is two-sided, shaped like a clam's shell, with two bull's-eyes on each side, giving the light its characteristic signal of two flashes every ten seconds. The lens is a second order lens - a reference to the maximum inside measurement, 55-1/8 inches between lens surfaces. The entire lens assembly weighs about 4.5 tons (4,082 kg) and was designed to "float" on mercury and pressurized air.

A system of cables, weights, and pulleys rotated the lens, much like descending weights turn the hands of a cuckoo or grandfather clock. The weights would gravitate down a shaft in the center of the lighthouse. (One of the weights is currently used as the lighthouse doorstep.) The "clock" had to be wound, the weights pulled back to the top, every 3-1/2 hours. An electronic motor was installed in 1939, eliminating this lighthouse keeper's task, but the reliable clock-like system was kept as a back-up.



Lighthouse Lens - Photo credit: USFWS

The lens was originally lit by an incandescent oil vapor lamp, similar to today's camping lanterns. Even with the original intensity of only 250,000 candle power, the light could be seen 20 miles out at sea and from 90 miles away in the air. In 1930, electricity came to the Point, in the form of generators, and the lamp was replaced by a light bulb. The wattage was increased twice, with the light reaching its final rating of 2,500,000 candle power in 1958.

After World War II. RADAR (Radio Detecting and Ranging), LORAN (Long Range Aids to Navigation), and other technological advances made the use of lighthouses as navigational aids obsolete. In 1976, while still operable but no longer used by large ships and planes, the U.S. Coast Guard decommissioned the lighthouse and installed an automated beacon for local boaters and aircraft. In 1979, the magnificent Kīlauea Point Lighthouse and three lighthouse keepers' homes were listed on the National Register of Historic Places.