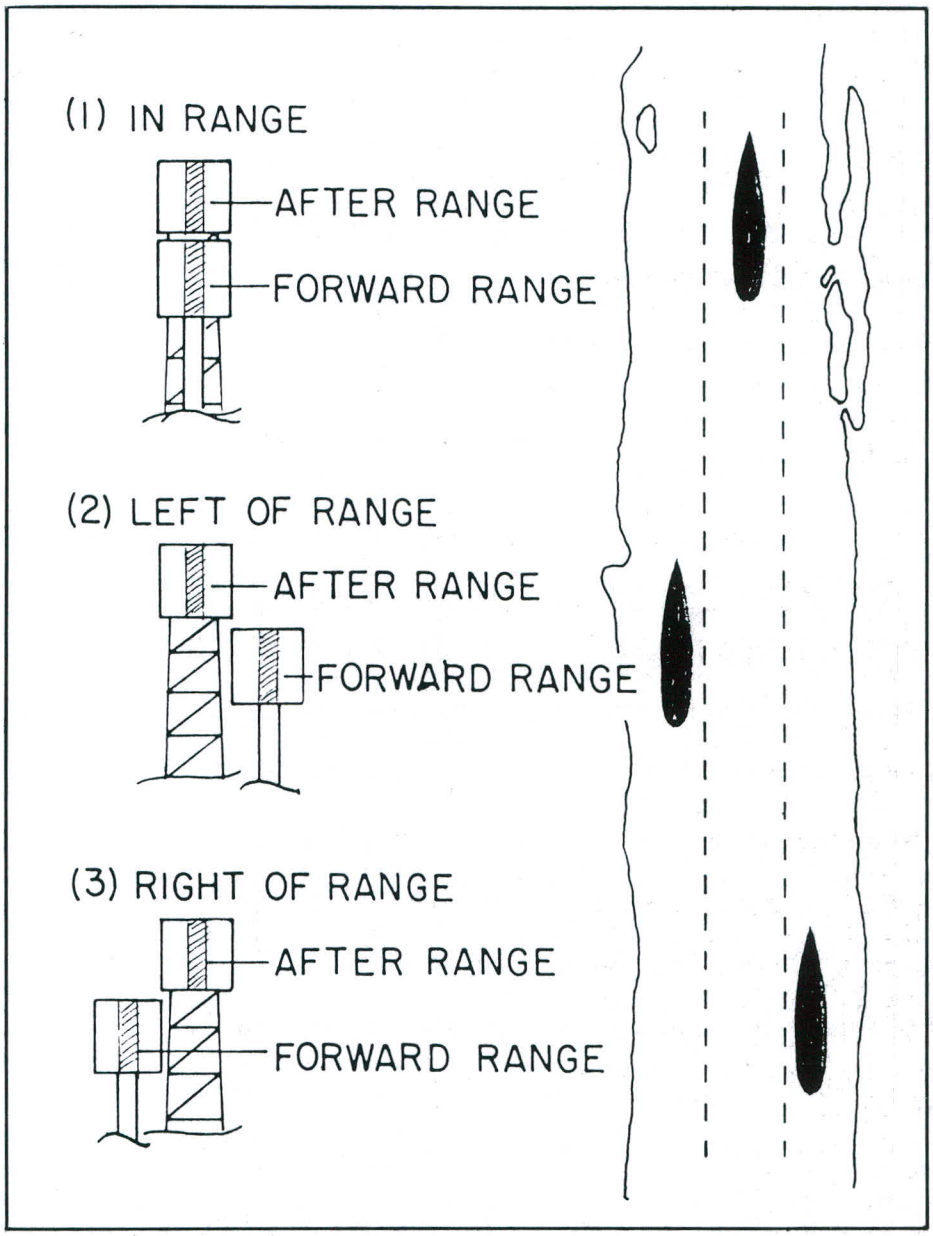
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Range Lights

by Wayne Wheeler

Range lights are a pair of lights, one in front of the other, the rear light of a higher elevation than the front. They are usually employed to mark the center of a channel or the entrance into a harbor. The mariner maneuvers his vessel so that the lights appear one over the other. If he perceives the lower, or front light, to be to the left of the upper, or rear, light then he knows that his vessel is to the right of the range and on the right side of the channel. Conversely, if the lower/front light appears to be to the right of the rear/upper light, then he is to the left of the range and on the left side of the channel. Ranges are very valuable aids to navigation. Unlike floating aids, buoys, they do not move. Additionally, they show the center of the channel and usually mark adequate water where a fixed lighted beacon only indicates the approximate edge of the channel. With fixed beacons the mariner has to navigate from aid to aid. With a set of range lights he need only "stay on" the range, keep the lights (or during the daytime dayboards) in line.



As seen above in (1) the captain of a vessel traveling down the center of the channel would see the range lights line up one above the other. If the vessel were to drift to the left in the channel (2), the top light would appear to the left. If the vessel drifts to the right then the light would appear to the right (3).

Range lights were originally known as "leading lights." England appears to have made extensive use of such lights, for a List of Lights of the British Islands of 1832 records many stations with two separate structures usually referred to as "the highest" and "the lowest," or "upper" and "lower."

The introduction of range lights in this country (first known as beacons) appears to have been on Wolf's Island in Georgia about 1820. Early range lights revealed "Yankee Ingenuity" (although one probably shouldn't call it that in the south) for the range lights established on Morris Island, South Carolina in 1837 were built on tramways perpendicular to the channel. This allowed the lights to be shifted (moved on tracks) to best mark the channel as the channel shifted due to silting.

The use of range lights did not develop rapidly in the United States. As late as 1880 records indicate only 13 sets of ranges. The first two sets of ranges on the Delaware River were built in 1880 and were known as Tinicum Island and Miffin Bar.

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The Delaware River was marked with more range lights over the next decade and by 1915 the last set were constructed forming an unbroken chain of ranges from Ship John Shoal to Philadelphia, the longest continuous set of dredged channels for ocean going vessels. One of the first set of range lights on the West Coast of the United States was that consisting of the Alcatraz and Fort Point Lighthouses. The lanternroom of Fort Point was located (on the parapets of the Fort) some 85 feet above the water. The Alcatraz light was displayed 168 feet above the water over 2¼ miles east of Fort Point. These two lighthouses, two of the first eight constructed on the west coast by the way, formed a range which guided the mariner through the dangerous San Francisco Bar Channel.

Today range lights are precisely established using a scientific formula. The lateral distance between the front and rear structure and the vertical distance between the front and rear lights (and dayboards) is predicated on the distance from the front structure to the channel edge, the length and width of the channel as well as the height of eye of the mariner. A range constructed for small fishing vessels is quite different than that built to assist ocean going cargo ships where the master is some 85 feet above the water. The candlepower of the lights must also be carefully calculated. Too much candlepower in the front range could cause the rear light to be lost in the glow.

Although most range lights have, over the years, been unattended aids to navigation, there have been important range lights watched over by keepers where the rear structure was in fact a large lighthouse displaying a directional beam. One such structure is Finns Rear Range Light in Pennsville, N.J.



FINNS POINT REAR RANGE LIGHTHOUSE

by Kim M. Ruth

Over two hundred people turned out recently at ceremonies commemorating the efforts of the "Save the Lighthouse Committee" for bringing about the restoration of the Finns Point Rear Range Lighthouse in Pennsville, N.J. A plaque was also unveiled marking the event at the 108 year old lighthouse.

Present at the ceremonies was Dick Nugent, who is the Tinicum National Environmental Center Refuge Manager, and under whose jurisdiction the lighthouse falls, Mayor James Gallagher of Pennsville, a strong supporter of the "Save the Lighthouse Committee," Congressman William J. Hughes, who is credited with seeking the Federal funds for the restoration project, and Mrs. Betty Husarik, a local businesswoman, who was the spearhead and motivation of the Committee.

The 115 foot tall lighthouse was built in 1876 of iron. The site was chosen to mark the river channel from Bombay Hook to Reedy Point. Thomas Dickinson, on whose land the lighthouse was to be built, had no desire to sell his land, but did express a desire to be a lighthouse keeper. He refused to sell the tract unless he was made the keeper of the light, and though at first his demand was refused, the Government later relented, and granted his request.

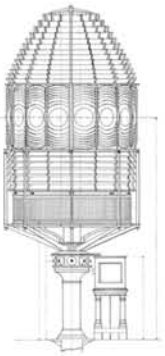
Sections of the lighthouse's tubular column were carted to the site by mules, and its construction was supervised by the U.S. Army Corps of Engineers. One hundred and twenty-seven steps had to be climbed to reach the base of the light, a kerosene vapor lamp which emitted a 150,000 candle-power fixed beam.

The property was divided by an Executive Order on February 4, 1935, part of the tract being given to the Department of Agriculture for biological surveys.

The light was tended until 1939 when it was made an automatic, after which it was serviced by the Deepwater front range lighthouse keeper.

On March 22, 1950, the light in the iron tower was discontinued. Later the next year, on June 18, 1951, the property was declared excess and was turned over to the General Services Administration for disposal. The property was delegated to the

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Thomas Point Shoal Lighthouse, MD

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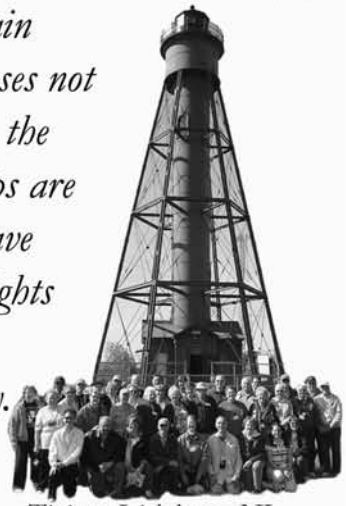
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Tinicum Lighthouse, NJ

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