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CHINA: TWO EARLY LIGHTHOUSES IN YANTAI (CHEFOO)

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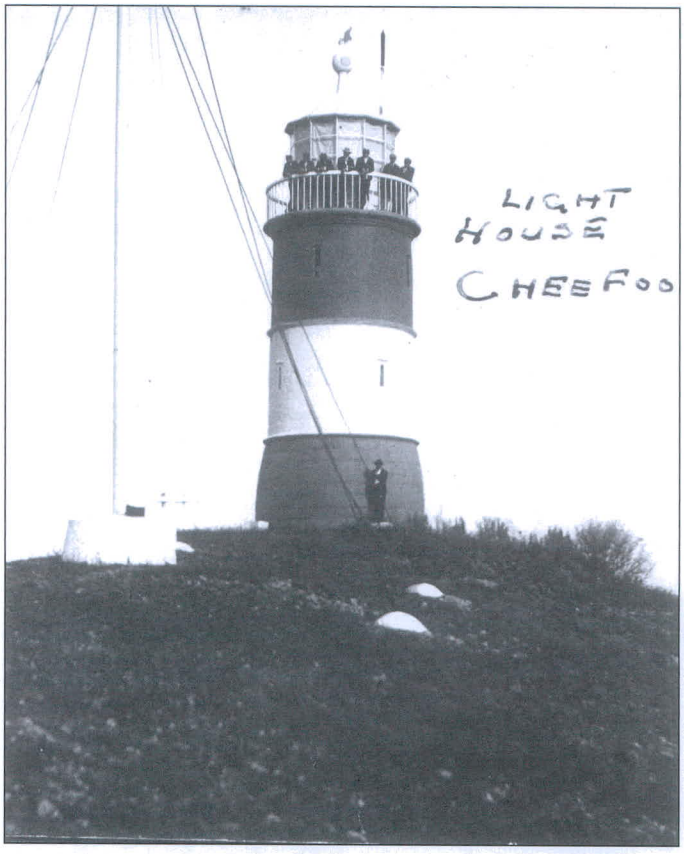
By Michel Forand (Canada) & Donna Suchomelly (U.S.A.)

The length of China's coastline between the North Korean and Vietnamese borders varies depending on which source you consult—approximately 14,500 km (9,000 miles), according to some; approximately 18,000 km (over 11,100 miles), say others.The coastline is very rugged in some areas, and there are literally thousands of islands, rocks and reefs, both inshore and offshore, especially in the central region (roughly between Shanghai and Hong Kong).

Fishing was a major occupation for many centuries, giving rise to the need for markers used by fishermen as they searched for the fish and returned home with their catch. "There is little doubt," Roger Banister wrote in 1932, "that many of the pagodas, watch-towers, watch-houses, artificial mounds, cairns, and stone beacons mentioned everywhere in foreign sailing directions had been erected in prominent positions to serve as marks for day navigation by Chinese junks and fishing vessels." Two of these traditional beacons were included among the five representative lighthouses selected by the People's Republic of China for the IALA book, *Lighthouses of the World* (1998).

The modern history of lighthouses in China begins in 1868 with the creation of the Customs Marine Department. Banister noted that "prior to the establishment of the Customs Marine Department aids to navigation . . . were few and primitive, while lights were practically non-existent." Some steps had already been taken in the 1850s, and in 1855, a lightship, later known as *Tungsha*, began operating near Shanghai—"the first modern coast light to be established in Chinese waters"—but formal lighthouse construction did not begin until the late 1860s. Sir Robert Hart (1835-1911), a British civil servant who became an employee of the Chinese government, played a key role in this development.

In the late 1850s, Hart resigned his position within the British consular service and was appointed customs inspector by the Chinese government, eventually becoming inspector general of the Imperial Maritime Custom Service. With the expansion of the British presence in China that followed the two Opium Wars (1839-42 and 1856-60), trading with European powers increased considerably. In addition to collecting duties on behalf of the government, Hart, seeking to make both trade and navigation safer, was able to persuade the Chinese authorities that a system of aids to navigation was needed on the coasts and main rivers of China.



The Kungtungtao Lighthouse circa 1900. From the collection of Michel Forand.

Kungtungtao

One of the first modern lighthouses to be established was built near the northern city of Chefoo on the Yellow Sea. In 1865, before the Marine Department was even set up, the local *taotai*—an official in charge of administrative matters who was in regular contact with Western traders, naval officers, and government agents—had already started building a lighthouse on the summit of Kungtungtao, a small island (less than 1 square kilometer) about 8 km (5 miles) northeast of the port. However, the project soon ran out of money, and Sir Robert Hart was called upon to find additional funds to complete the construction of the station.

The light, which became operational on May 1, 1867, was initially called Lu Xun, after the first Commissioner of Customs in Chefoo. The name was soon changed to Chefoo, and then later to Kungtungtao when a new lighthouse was established in Chefoo proper in the early years of the 20th century.

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This 1908 postcard features the Kungtungtao lighthouse. From the collection of Michel Forand.

The Kungtungtao Lighthouse was a circular tower, built in three courses of granite blocks laid horizontally and separated by "string courses" (thin projecting bands of stone). The tower, approximately 8 meters tall (26 feet) was painted in red and white bands. Above the door was a stone lintel inscribed "A.D. 1866." Old postcards of the station show dwellings and other buildings just below the lighthouse.

At the beginning, the light was watched by customs officers ("tidewaiters") who were assigned this responsibility for periods of up to three months, but regular lightkeepers began to be appointed in 1875. The lighthouse, fitted with a fixed catoptric device of about 1,000 candlepower (cp), soon became an object of controversy. Lu Xun's successors and the technicians of the Marine Department had come to the conclusion that the location was wrong and that the light should be moved to one of several alternative spots in Chefoo harbour. The light itself was said to be inadequate and ineffective, and pressures were mounting for improvements in the lighting of the harbor. Hart resisted those pressures, arguing that the money was needed elsewhere, and it was not until 30 years later, in 1905, that a new light was added in the area.



Left: The Kungtungtao Lighthouse as it appears today. ATON photo.

It was also in 1905 that the obsolete lighting device at Kungtungtao was replaced by a more modern apparatus—a third-order Fresnel lens mounted on a mercury float, manufactured by Barbier, Bénard & Turenne. No longer sending a fixed beam, the light displayed a group of three flashes every 20 seconds at a focal plane height of 242 feet, and was visible over a distance of 22 nautical miles. With the later addition of incandescent burners and autoform mantles, the flash intensity grew from about 89,000 cp to approximately 220,000 cp by the early 1930s.

The upper portion of the tower was destroyed during the Second World War, with only the bottom level surviving. After the war, the light was displayed from a narrow stone tower built on top of the remaining portion of the original lighthouse. The light was displayed on at least two other structures successively between 1955 and the 1990s, until the present tower was erected in 1997, about 30 meters (98 feet) east of the original site. It is a 19-meter (62-foot) tall, round, concrete tower rising from a circular building, with a large observation room below the lantern. The white light flashes once every 15 seconds, at a focal plane height of 78 meters (256 feet). What remains of the old lighthouse is said to be used as a communications tower, but there are indications it may also be a candidate for protection as a heritage building.

Tower Hill

The second lighthouse in the Yantai area was established in 1905 on Tower Hill, located on the mainland just east of the town. The name Yantai, meaning "smoke platform" or "tower," is itself evocative of warnings: Yantai Hill was the location of a beacon built in A.D. 1398 on orders of the Ming emperor Taizu, to warn local inhabitants by means of smoke signals when enemy vessels from Japan were approaching.

The Tower Hill Lighthouse was given a third-order apparatus that had previously been used at the Gutzlaff Lighthouse (known today as Dajishan), one of the lights guarding the southern approaches to Shanghai and the Yangtze River. Tower Hill Light had an occulting white and red light with a 10-second period (8 seconds light, 2 seconds eclipse), at a focal plane height of 53.3 meters (175 feet). The white light, marking the clear passages south and west of Kungtungtao, had an intensity of 33,000 cp and was visible over a distance of 19.5 miles in clear weather. The red sectors covered reefs and shallow areas.

Rather than build an entirely new structure, the Customs Lights Department established the lighthouse on the grounds of an old temple. A lantern was placed on the roof of an existing building, described by Banister as "a picturesque erection of purely native style, resembling the solid bastion of a Chinese fortification." The crenellated stone tower, formerly a watchtower, stood about 6 meters (20 feet) above the ground. The temple buildings served as staff accommodations and storehouses.

In the decades following the 1949 revolution, the name Chefoo was abandoned in favor of Yantai and the port underwent con-

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These undated postcards show two different views of the Tower Hill Lighthouse. From the collection of Michel Forand.

siderable expansion. On Tower Hill (now renamed Yantaishan or Yantai Hill), the old lighthouse lost its usefulness as a harbor light. It was replaced in 1988 by a modern, taller tower that had taken two years to build. The 12-sided tower, situated very close to the old building, dominates the hill and the east



Above and right: Different views of the Yantaishan Lighthouse in 2008. Photos from the collection of Michel Forand.



side of the harbour from its 50-meter (164-foot) height. The lantern room can be reached by an elevator. According to the *Baidu Encyclopedia*, the tower was designed by engineers at Beijing's Tsinghua University. *Baidu* also says the lighthouse is known as the Yellow Sea Glowing Pearl —a wonderfully evocative name!

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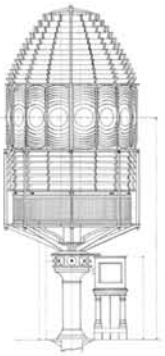
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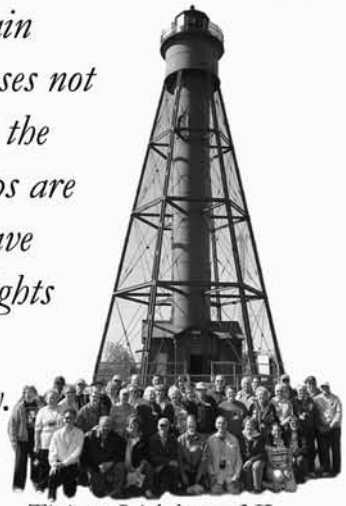
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