Broken ground with depths of 6 to 7 fathoms extends 7 miles eastward and 12 miles east-southeastward from the light vessel; the least depth is 3¾ fathoms, and lies 9 miles, 99 degrees true E. by S. of the light vessel. The outer end of the shoals is marked by a gas-and-bell buoy (flashing white light), which lies 12 miles, 118 degrees true SE. by E. ¼ E. of Frying Pan Shoals light vessel. Large, deep-draft vessels generally pass southward of the gas-and-bell buoy.

Light vessel *Number 94* was built for the station on Frying Pan Shoals in the Sixth Lighthouse District. The vessel is 135 feet 9 inches over all, with a beam of 29 feet and a draft of 12 feet 9 inches; the displacement at this draft is 660 tons. The hull is built of mild steel, with two wooden deck-houses on the spar deck serving the purpose of pilot-house and bridge-and-radio house. One steel lantern mast, of diameter sufficient to contain a ladder giving access to the lantern, and a wooden mainmast, carrying a fore-and-aft sail, are fitted.

The signal light is carried on the lantern mast. It consists of an incandescent oil-vapor light mounted in a lens of the fourth order, and gives a light of 2,900 candlepower.

The fog-signal apparatus consists of a 12-inch deep-toned chime whistle connected to the main boilers. Steam is supplied through a reducing valve, and a specially designed vertical engine is arranged to cut off steam to the whistle so as to give the characteristic: Blast, 5 seconds; silent, 55 seconds. A submarine bell, actuated by compressed air, strikes one stroke every 3 seconds.

This vessel was equipped with radio outfit before being placed on the station, so that its effective date would be coincident with the establishment of the vessel. This installation has an effective radius of about 200 miles, and besides being of great value to passing vessels, it is of great aid to the Lighthouse Service in keeping the vessel to the highest state of efficiency as an aid.

The propelling machinery consists of one vertical, direct-action, surface-condensing, fore-and-aft compound engine, having cylinders 16 and 31 inches in diameter by 24 inches stroke, driving a cast-steel propeller 8 feet in diameter by ten-foot pitch, and supplied by steam under a pressure of 110 pounds per square inch of heating surface. The machinery and boilers are located amidship. The vessel is fitted throughout with all modern appliances, including steam windlass, sanitary plumbing and fixtures, and drainage system, but has no electric-lighting system.

The complement of this vessel is four officers and ten men. The officers' quarters, mess-room, pantry, and bathroom are located as far as practicable on the main deck. Quarters for the crew, including the galley, are located on the main deck just forward of the boilers and machinery. The oil-room and stores are located on the lower deck and in the hold forward and aft. The hull is yellow, with "Frying Pan" in large black letters on each side. This vessel was constructed under the Act of May 27, 1908, appropriating $115,000. The vessel was built under contract at Muskegon, Michigan, and the cost was $104,080.37. Construction was commenced on May 28, 1909, and was completed and the vessel delivered to the government on June 13, 1911. On November 15, 1911, the light vessel was placed on the station in the Sixth Lighthouse District.

The cape is a low, sharp point of sand beach forming the southern extremity of Smith's Island. The island, lying on the eastern side of the entrance to Cape Fear River, is mostly low and marshy, but has a thick growth of trees on its western side. Near the southern end of the island is Cape Fear Lighthouse, which will usually be the first object seen in approaching the cape.

The lighthouse on the cape is a white, iron, skeleton tower, upper part black. The light is flashing white (light 2.3, eclipse 7.7 seconds), 159 feet above the water, and visible 19 miles. The light is incandescent oil vapor, using a mantle 2¼ inches in diameter, and the intensity of the flash through the lens, which is six feet in diameter, is 160,000 candles. This light was built in 1903, and is, with one exception, the newest and most modern first-class lighthouse in the district.

On the west side of Smith's Island, east side of the entrance to the Cape Fear River, is Bald Head Lighthouse. The structure is a white, octagonal, pyramidal tower. The light is flashing white, with a dark sector between 220 degrees and 308 degrees, 99 feet above the water, and visible 16 miles. This light has recently been converted from an oil light with a keeper to an unwatched gaslight, and now forms a part of the system described below.

Cape Fear River has a total length of above 371 miles, and empties into the sea immediately west of Cape Fear. It is the approach of the city of Wilmington, which is 27 miles above its