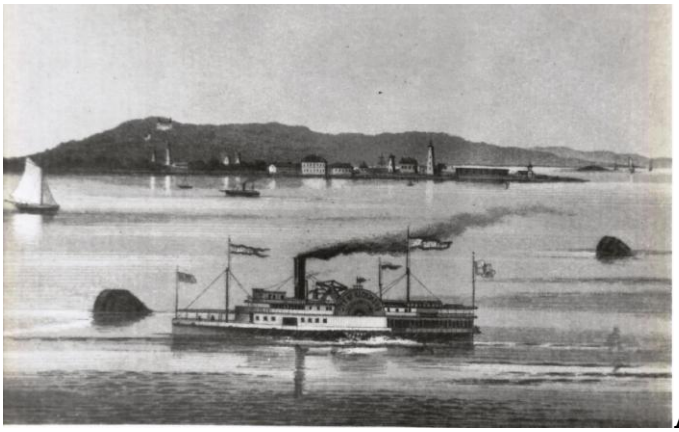
Wireless Telegraphy at Twin Lights before Marconi

1746-1899

John P. King
KA2F

Highlands Hill Was Site of Firsts in Long Range Communication



A

As far back as 1746 the hill on which stand today's Twin Lights was the site of the first long distance communication system in America (long before Paul Revere's "one, if by land and two, if by sea"). **At the request and expense of the New York Merchants Association, a beacon was put up which was to warn authorities in New York City of the approach of enemy French vessels during the war between France and England.**

Because of the elevation of the hill plus any small tower located on it, being some **240 feet above sea level**, **a trained observer armed with a powerful telescope could easily discern and identify a ship on the horizon 18 miles at sea, thus affording an ample period of time for the city authorities to prepare a defense.**

ΤΗΛΕΓΡΑΦΕΙΝ = ΤΗΛΕ ΓΡΑΦΕΙΝ
Far off To write

A signaling system called a telegraph (i.e., writing at a distance, according to its Greek etymology; not to be confused with the electric or magnetic telegraph which Samuel Morse perfected.) **used large balls hoisted up a tall 100 foot high pole during the day and flaming pots of oil during the night. These were used according to a**

pre-arranged code system. There were four signal sites:

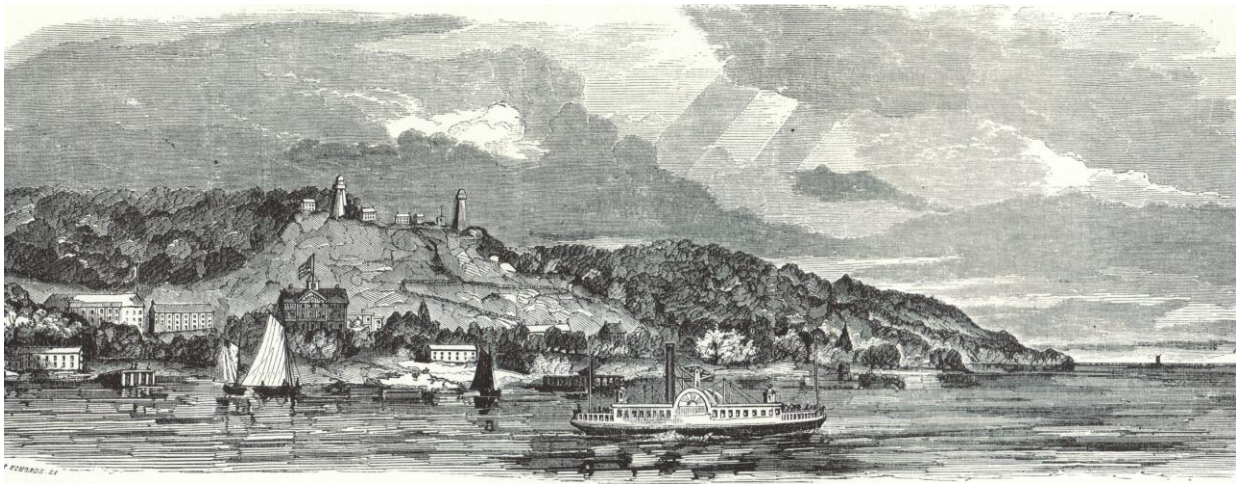
Twin Lights hill in Highlands,
to the end of Sandy Hook (7 miles),
to Ft. Tomkins (Wadsworth), at the Narrows (9 miles), and
to the Merchants' Building in New York (8 miles)
and reports were read by telescope and then relayed along the route.

B

Unfortunately the system was not perfect and no doubt at times signals went unnoticed. No matter, for **the war with France ended in 1748 and the telegraph was removed.**

There is some evidence that a lighthouse may have been built on the same site in 1762, again no doubt paid for by the New York merchants to help guide ships into the channels leading to the city. Such a light would have a greater reach out to sea, due to the elevation of the lens, than the one at Sandy Hook and between the two an approaching ship, long before taking on a Sandy Hook pilot, would better be able to situate itself in the proper channel.

During the War of 1812 the visual telegraph was reactivated, this time to warn the city authorities and merchants of the approach of British vessels, and proved to be a useful warning device several times, no doubt alleviating some of the anxiety from the population of the city.



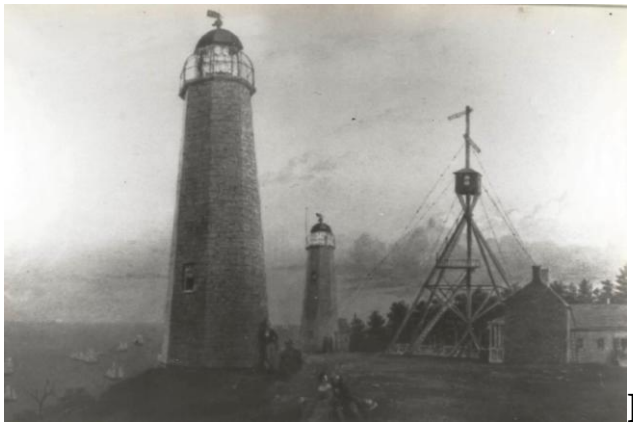
C

Now in **1829 the Merchants Exchange Company of New York paid to have the old telegraph reactivated and efficiently operated, after having received permission from the Treasury Department to operate the system "on the public ground near the lighthouse at the Highlands of Navesink."** Later engravings and an early photograph of the first Twin Lights site show the telegraph operation (a semaphore, at the time) actually on the government grounds located between the two towers. This was **quite a concession for the next time signaling equipment was allowed to be set up on the grounds was 1899 when Marconi erected his gigantic wire antenna there.**

In **1834 the Merchants Exchange installed a semaphore telegraph in all the key locations. On a tower about 70 feet high there was an observation and telegraph operations room.**

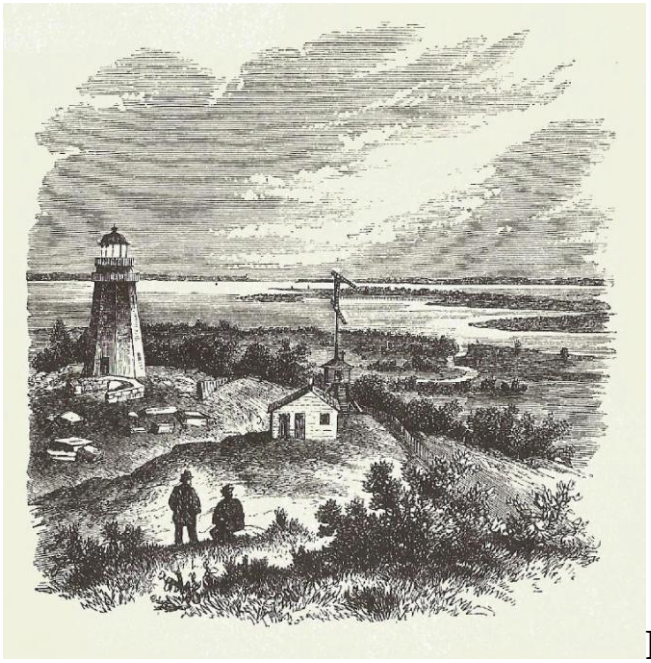
D

The agent on duty would scan the horizon watching for an expected ship to break the horizon. He could read its identity from its size, rigging, and from signal flags in the ship's rigging using his powerful telescope.



E

The agent would then move a dial with the numbers 1 to 10 and the words "look out" and "repeat." If he dialed a number from 1 to 6, the upper arm on the semaphore above the shack's roof would move to the corresponding number. If he dialed 7 to 10 or either word, the lower arm would move correspondingly.



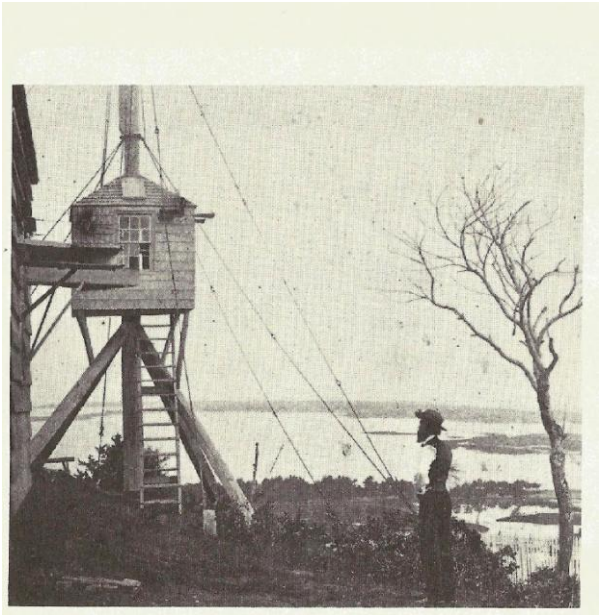
F

Each ship of the Merchants Exchange would have its own four digit code number which was registered in the "Telegrapher's Dictionary" (See Twin Lights Museum display.) If the ship *Napoleon* were sighted, the operator would dial up 6-3-3-5, for example, which would be relayed to Sandy Hook, to Staten Island at the Narrows, and to the Exchange building's roof in less than 60 seconds!

Today it might be hard to understand why the system was important back then. Well, in the days of sails many a ship laden with valuable goods would not make the port of New York, perhaps sunk or damaged and driven off course by storms. It was a great relief for the merchants to know their ships and cargo had arrived safely, and they wanted to know this as soon as possible. The New York newspapers, hotels and city families wanted to know of the safe arrival of passengers who were guests or family. One forgets today that from the time a sailing ship broke the horizon to the time it finally docked in Manhattan as much as 72 hours could elapse, given the need to wait on the proper disposition of winds and tides.

The first operator of the telegraph was Charles R. Havens who came to Highlands from Shelter Island at age 21 in 1834.

Havens was considered a brilliant and dedicated agent, even if somewhat eccentric, in the opinion of the companies he worked for and of all Highlanders and visitors who knew him. **He retired in 1884 from the Western Union Company at full salary in appreciation for his half century of expert service as a Marine Observer.** He died April 8, 1899, but in his last 15 years he enjoyed still coming to the Twin Lights and telling visitors of the way things were in the old days. His son, Vinton was an adept sound telegrapher who took over his father's position for many years. Another son, Arthur was the first Western Union telegrapher at the Atlantic Highlands train station. The dits and dahs and the spark of telegraphy were in their blood. (Havens appears near his station in an 1859 photograph on page 75 of *Another Look at Nauvoo to the Hook*.)

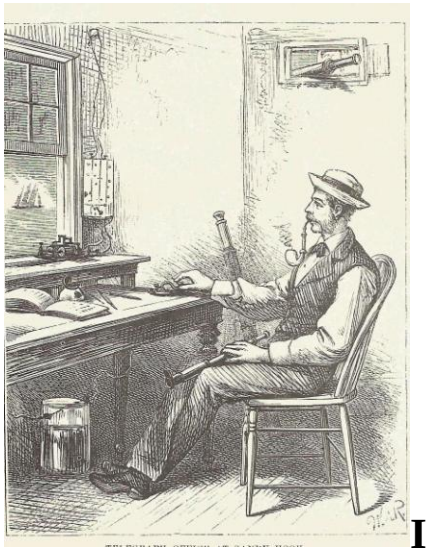


G

In 1853 the Morse telegraph first arrived in Highlands at the Twin Lights Marine Observation station and Charles Havens learned the new apparatus quickly and the semaphore signaling device (but not the tower structure) was replaced by a paper recording electric telegraph operated by Havens for the New York and Highlands Telegraph Company.

H

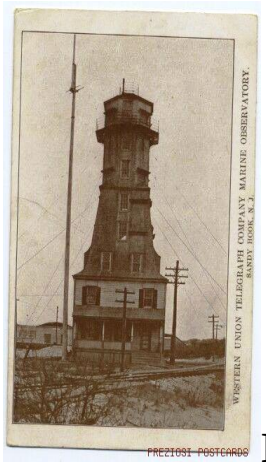
The next year telegraph wires were stretched across the Shrewsbury River from Twin Lights to Sandy Hook by the New York and Sandy Hook Telegraph Company (later it absorbed the New York and Highlands Telegraph Co.), thus linking the Sandy Hook Marine agent to the station at the Twin Lights and then onward to New York City's Merchant Exchange building. Now ship arrival news traveled almost at the speed of light along the wires, making Highlands and Sandy Hook well publicized in the day's papers and almost a household word around the metropolitan area.



I

In 1875 the New York and Sandy Hook company was absorbed by the Western Union Telegraph Company which had a wooden building housing an observation tower and agents' quarters constructed (August 15, 1875, at a cost of $2,950) on a bluff just below the government property at the Twin Lights. It was located below and a bit south of the south tower so it would not interfere with the lighthouse beacons**.**

J



K

Clearly money was to be made in the reporting of ship arrivals and in 1895 a rival set up its own tower just below the north tower of Twin Lights. The first operator of this Postal Telegraph Marine Observation station was Stephen Murray. He got along well with his competitor, Edward McCann and even communicated with him on the telegraph via New York! He serviced different ships from those of his rival company, yet at times covered for him.

Murray was deserving of two important achievements, first, it was he who telegraphed Marconi's radio reports on the America's Cup race of 1899 to New York and, second, it was he who became the father of the first twins (girls born May 1900) in the new Borough of Highlands after March 22, 1900. His rival at Western Union, Edward McCann and his wife Annie were the parents of the first child, Frances (born April 1900), born in the new borough.

Murray used to live down on 159 Navesink Avenue, renting the house that is today's O.L.P.H. convent. However, after the Marconi Radio company moved its ship-to-shore radio-telegraph operation to near Belmar in 1907, the Postal Telegraph company purchased the Marconi house and moved it adjacent to its steel observation tower to be Murray's home.

In 1933 Western Union, which bought out the competing Postal Telegraph Company operations nation-wide, closed the Marine Observation facilities on Twin Lights. The old Western Union structure was razed, the Postal Telegraph steel tower was dismantled and the old Marconi house (still standing today, but in deplorable condition) was sold to Manny and Pearl (Murray) Masciale to become their home.

L

Marconi and . . . . . V for Victory in Highlands Radio Days

In Highlands on the hill where the Twin Lights lighthouse is located overlooking the little town and ocean stretching out to the horizon, the Father of Radio demonstrated the first practical use of wireless or radio telegraphy to an excited world. The year was 1899.

Guglielmo Marconi was just twenty-five years old when he left his native Italy where he had studied physics at the University of Bologna. He had refined the early electro-magnetic work done by Heinrich Hertz and devised a practical radio antenna.

In 1895 he had sent wireless signals covering more than a mile and in early 1899 he had utterly astounded the world by sending wireless radio signals across the English channel. His wireless communication system was rejected by the Italian government but in 1896 he secured a British patent and financial backing for his Marconi Wireless Telegraphy Company.

M

Marconi came to New York at the invitation James Gordon Bennett owner of the New York Herald newspaper in order to use his wireless apparatus to report on the up-coming America's Cup yacht races off Sandy Hook.

N

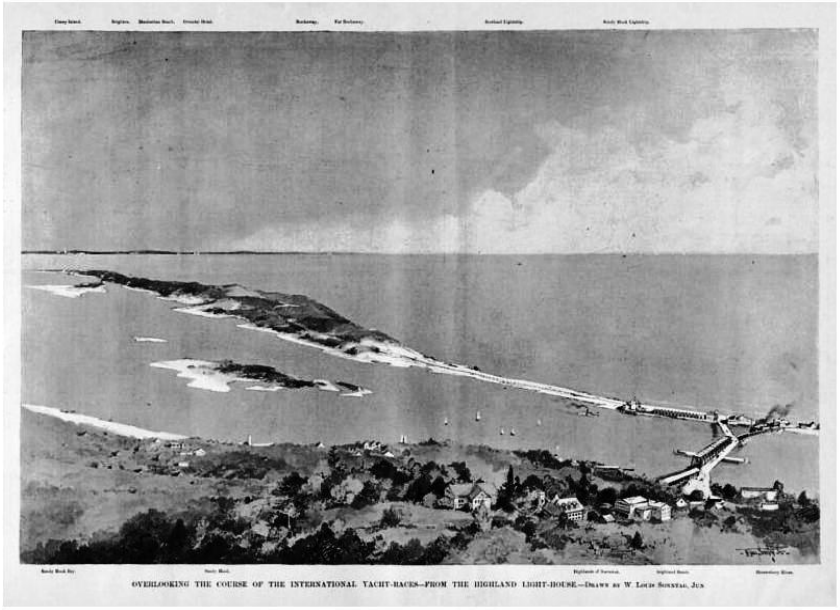
His assistant William Bradfield set off straight-away by steamboat to the Highlands here in New Jersey. Marconi chose to work on the Twin Lights hill, the highest point directly along the Atlantic coast and the first sight of America the young Italian experimenter had when arriving from Europe. Bradfield set up the antenna mast with its array of wires and the radio receiver atop the hill just adjacent to the north tower.

One transmitter was aboard the steamboat *Ponce* with another on the steamer *Grande Duchesse* chartered to follow the races.

Before the races, however, **Commodore George Dewey triumphantly returned to New York on September 30, 1899 in parade review after his Spanish-American war victories in Manila Bay in the Philippines**.

In Highlands Marconi received reports on the progress of the warship and steamer parade. These reports were relayed to the land-line telegrapher, Stephen Murray, the Postal Telegraph agent, who sent them in a blur of Morse Code dots and dashes to the anxious editors waiting at the Herald offices. They witnessed communications history being made as

Marconi literally changed the world that day!



OVERLOOKING THE COURSE OF THE INTERNATIONAL YACHT-RACES—FROM THE HIGHLAND LIGHT-HOUSE.—DRAWN BY W. LOUIS SONTAG, JUN

O

Next all attention was focused and bets were laid down on the **America's Cup Races to run October 16 and 17,** after a two week delay due to bad weather. The prestige of the United States of America was at stake at the race course finish line. **It was the America's *Columbia* owned by J. P. Morgan against Thomas Lipton's *Shamrock* from Britain's Northern Ireland. The excitement was intense!**

Marconi had his equipment there atop the hill near the Twin Lights north tower. Bradfield began receiving Morse code reports from Marconi aboard the Grande Duchesse in the thick of the competition at sea. **Reports on the status of the *Columbia* and *Shamrock* rapidly flew through the air and electrified the small crowd of by-standers hearing the bzt-bzt-bzt-bzzzt of the wireless spark gap transmitter! Instantly this was received in Highlands and wire telegraphed to the writers at the *New York Herald*. All the other newspapers were scooped, thanks to Marconi's ingenious wireless radio system!**

Marconi continued his experiments with ever improved equipment. Nonetheless, he had a difficult time convincing American financial investors, since other scientists maintained Marconi's wireless was limited to

relatively short and line-of-sight distances. Universal adoption of his devices came soon, for in December 1901 Marconi spanned the Atlantic Ocean, from Cornwall, England to St. John's, Newfoundland, with Morse code signals sent with his wireless radio system. His Marconi Company equipment and operators increasingly were placed aboard ocean-going steamships and in 1909 saved two shiploads of passengers from death in a collision at sea.

That same year Marconi received the scientific world's greatest tribute, the Nobel Prize in Physics for his work in wireless communication. He died on July 20, 1937 in Rome. The next day all radio stations world-wide went dead silent for two long minutes in tribute and respect for the man, who long before from a hilltop in Highlands brought victory for the yacht Columbia, victory for the Herald, and victory for Marconi and his wireless radio communication.

An Early Highlands News Service

Today newspapers like the Asbury Park Press are filled with copies of far away and world stories supplied by news services such as the Associated Press (AP), Reuters, Gannett News Service, or even the Health and Fitness News Service. Older readers may remember UPI, United Press International, as well. These items used to arrive at the Press on noisy paper printing teletype machines, now relegated to the museum by the miracle of silent operating electronic computers.

However, **long ago just after the arrival of Samuel Morse's telegraph, the gathering and reporting of news, especially from abroad in Europe, was not such an easy affair.**

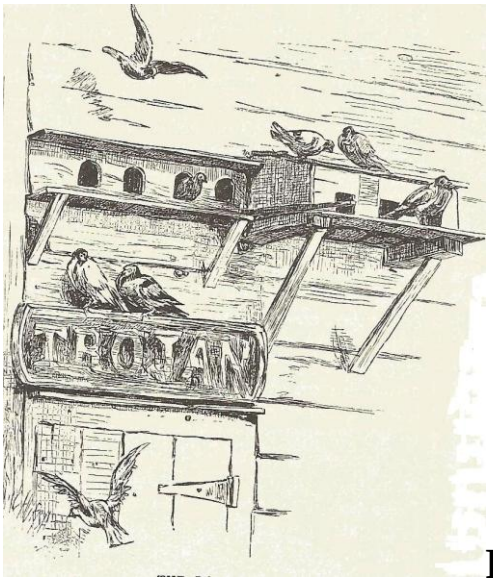
America was isolated from news from Europe, separated as it was by over 3,000 miles of Atlantic Ocean. A sailing ship leaving Liverpool, England might take as much as 15 to 20 days to arrive at a dock in the port of New York. World events such as the 1815 defeat of Napoleon's armies by Wellington at Waterloo, vital to American political and financial welfare, failed to reach American government officials, investors, and

the common newspaper reader without long delays.

A Highlands man named James Farrell was a key player in a difficult and sometimes dangerous news service operated from Sandy Hook and Highlands Twin Lights hill using the surrounding water and air.

In about 1854, shortly after the first telegraph line linked the Highlands with New York City, the wires were extended across the Shrewsbury River from the Twin Lights hill to the end of Sandy Hook. Whenever an inbound vessel was sighted by a powerful telescope and it was identified as bearing news reports from Europe, "newsman" James Farrell launched his surf boat and rowed or sailed out to meet the ship, no matter what how rough the conditions of the sea or sky above.

News reports had already been prepared in Europe and written in abbreviated form on tissue papers. These were placed in a special water-tight container and thrown over board, marked with a buoy-flag, to await retrieval by Farrell. He attached each news report to the leg of carrier pigeon "Dickie," or one of several birds which he released to fly away rapidly to its coop on Sandy Hook.



P

Here another agent took the messages and telegraphed them to New York city, where the latest news from Europe was spread across the pages of the *New York Herald*.

Its owner and publisher, James Gordon Bennett, initiated this unusual news gathering service and generally is credited with being the first publisher to make extensive use of the telegraph to gather and report domestic news stories from all parts of America. He personally visited and inspected this news operation when he came to Highlands by steamboat and spent some days of business and pleasure at the old Thompson House Pavilion situated along the Shrewsbury just below the Twin Lights.

This old news service came to an end a while after the laying of the first transatlantic telegraph cable in 1858. This rather inefficient cable was replaced with an improved 1866 cable. New York in America and London and other world capitals in Europe became as close as the clicks of a telegrapher's key speeding dots and dashes of news information on the wire cable under the ocean between the two continents.

Dickie and the other winged messengers went into retirement in Farrell's back yard in lower Highlands. Farrell later went to work as an agent for the Western Union Telegraph Company with sites on Sandy Hook and the Twin Lights, where he spent long cold days watching the seas for ships.

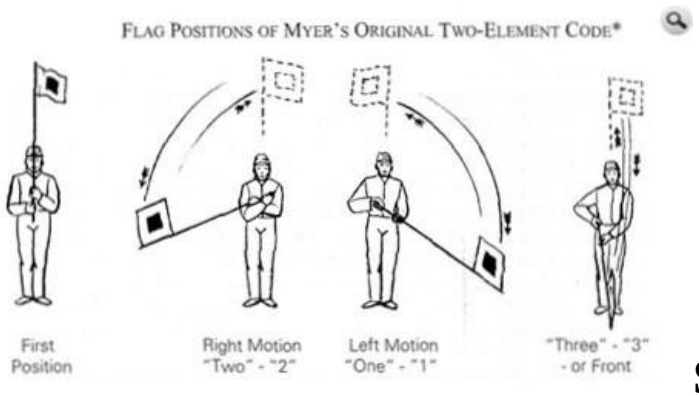
Farrell never forgot his old co-worker, Dickie, the news pigeon and often repeated to visitors how little Dickie was often a bit obstinate and filled with his own self importance. He would regularly annoy Farrell's assistant on Sandy Hook by walking around the tower coop keeping just out of reach of his eager hand. "Come on, Dickie, be nice, come here," coaxed the agent. And the bird would coo and coo, as if to answer, "What's the rush, what's the hurry?" **Little did Dickie understand that the Herald and all America, eager for news from Europe, waited upon the caprices of little Dickie, the news service carrier pigeon.**

Q

#**Albert J. Myer, 1828-1880, was the father of the U.S. Army Signal Corps**. He worked as a Morse telegrapher during his M.D. education. He was commissioned as a U.S. Army assistant surgeon with rank of lieutenant in 1854.

R

Myer devised a system of signaling across long distances, by line of sight through the air, thus aerial telegraphy as opposed to wire Morse telegraphy. It used simple codes with a single signal flag, or lantern at night, known as wig-wag.



S

T

The Army became interested. In April, 1859 Myer and his assistants lived in the Thompson House in Highlands while field testing from the Twin Lights hill to Ft. Tomkins Light House (formerly Ft. Tomkins) on Staten Island across Raritan Bay. Congress was sold on Myer's system, appointed him chief signal officer with rank of Major, and created the U.S. Signal Corps.

Fort Myer, Virginia, honors his memory. Nearer to Highlands where his invention was confirmed, there used to be the Albert J. Myer Center, the Signal Headquarters building of the U.S. Army Communication Electronics Command (CECOM) in Ft. Monmouth, N.J. until its closing in 2011.