The Telegraph and the Railroad

by Carrie Crane

In the move of his office from the Fire Station to his newer space in the lower floor in the Boylston Town House, Fire Chief Joseph Flanagan discovered an antique telegraph sounder. The instrument had apparently been passed along as different departments moved through the office space over the years. How it came to be there is as yet a mystery but we have some theories. In 2022, Chief Flanagan graciously donated the instrument to the Boylston Historical Society & Museum, Inc. collection.

WESTERN UNION RAILROAD TELEGRAPH SOUNDER

Manufactured from 1875-1900
Dimensions: height 4.75", width 3", depth 5.5"
Components: brass, wood, hard rubber

THE RAILROAD TELEGRAM COMMUNICATION SYSTEM

Back before the telephone, there was the telegraph. This was a communication system based on electrical pulses sent along a wire from a sender to a receiver. The development and expansion of the telegraph was tied closely with the expansion of the railway system both in the US and in Europe. As rail use grew more trains were using the same tracks simultaneously and this all too often resulted in disaster. Train personnel were unable to communicate with other trains or stations. If there was an issue on the tracks or with another train, this information could not be passed along and all would proceed bases on the timetable for the route. If a train was stuck on the track, an oncoming train would likely not know until coming around a bend to see a train in the way and no chance to avoid collision. There was a critical need for better communication and the telegraph was it.

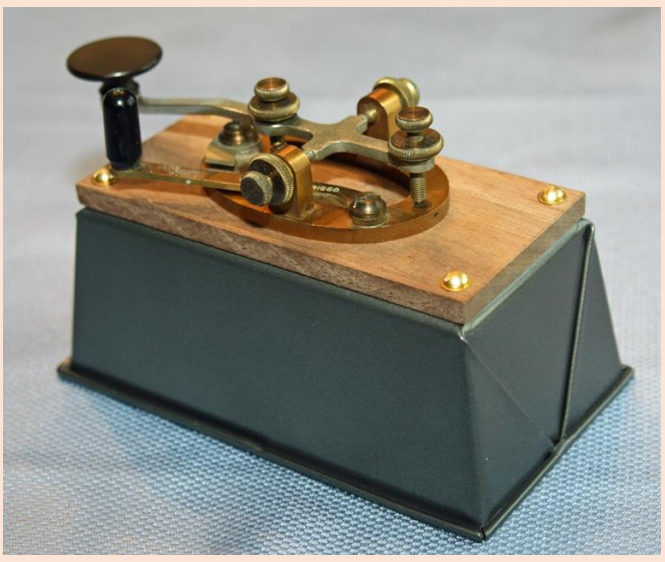
Two British inventors, Charles Wheatstone and William Cooke were the first to commercialize an electronic communication device in the latter half of the 1800s. Their device carried electrical pulses that caused a set of four needles on a receiver to point in various directions that aligned with certain letters. This system had its draw backs. It required multiple wires to carry the current to each of the needles and because not all letters were included on the dials, complex patterns needed to be learned to read the message as it came in.

INVENTIONS OF MORSE CODE

In 1882, Samuel F. B. Morse, an American painter of portraits and landscape, returned to Europe to further his studies in painting. On his return voyage he was introduced to the science of electromagnetism by a fellow passenger, Charles Jackson. With this new knowledge, he soon conceived of a design for a single wire telegraph instrument. This was made possible by letting a single pulse of electricity at various durations travel along the line. Once simplified to a long or a short pulse, Morse next established a system of pulse patterns that corresponded with letters and numbers and created what is known as Morse code. Skilled operators were required for this equipment as well but only a single wire was needed for transmission. This allowed for less complicated and costly installation.

WESTERN ELECTRIC TELEGRAPH SOUNDER

The telegraph instrument we have in the collection is Western Electric Model 15B Main Line Telegraph Sounder, made from 1875-1900. This piece was built by the J. H. Brunnell company, founded in 1878, a leading manufacturer of telegraph equipment which is still in operation today in Kings Park. New York. Usually, this instrument would be accompanied by another instrument call a key. The key is the mechanism that sends the electric signal of long and short pulses that are created as the operator taps the key's lever down, makes contact with the metal base and completes the circuit. The sounder is the receiver and converts those electrical pulses into sound.



BRUNELL TELEGRAPH KEY
From the collection of R. J. Molloy
KD2UJ

TELEGRAPH LINES INSTALLED ALONG RAILROAD TRACKS

Throughout the middle of the 19th century, telegraph wires were installed along the ever-expanding railroad tracks. More and more depots were set up with telegraph equipment and operators to work them and allowed easy communication between stations. Now if a train was delayed or off the track, a train coming behind it or in the opposite direction would be notified by the dispatcher as he passed through the closest depot.

These telegraph lines were initially owned and operated by numerous small companies but were gradually purchased and consolidated into the Western Union Telegraph Company. It quickly became clear that there was a commercial demand, both business and personal, for this form of fast communication. Soon enough Western Union had offices in public locations where an individual could send a telegram to anyone almost anywhere and pay by the word. Thus, a style of writing was developed that eliminated any unnecessary words, much like the early days of SMS messaging in this century when a message was limited to 160 characters and words were shortened to single letters as with LOL.

So where might this telegraph sounder have come from? In 1881, the Massachusetts Central Railroad opened with a stop in Boylston at Sawyers Mills. (See *It Began with a Mill and a Bridge, The Beginning and End of Sawyer's Mills*)

Boylston Station
Sawyers Mills, Boylston, Massachusetts
Photograph courtesy Digital Commonwealth Massachusetts Collection

This Sawyers' Mills depot would have had a telegraph operator on site using the telegraph sounder and key. The Boylston depot was in operation until about 1895 when the railroad was relocated for the flooding of the Wachusett Reservoir and the depot abandoned. At the time of the closing of the mills, homes and businesses of Sawyer Mills, many of the Sawyers Mills artifacts were donated to the Sawyer Memorial Library and then transferred to various other town buildings when the library vault was moved. This instrument ended up in the Town House and is now on display at the Historical Society. Who moved the telegraph sounder from the Boylston Station to the Town House over the following 100 years is unknown to us. If anyone out there knows more, we would love to hear it.

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Acknowledgements:

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History of J.H. Bunnell & Company *based upon a presentation by Dr. Joseph Jacobs at the 1994 Antique Wireless Association Conference* http://jhbunnell.com/bunnellcohistory.shtml

https://en.wikipedia.org/wiki/Samuel_Morse

Photography of Telegraph Sounder, Carrie Crane, Boylston Historical Society & Museum, Inc., 7 Central Street, Boylston, Massachusetts.

Photography, of Boylston Station, Digital Commonwealth, Massachusetts Collection

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