From Telegraph to Text: How Undersea Cables Connects Us All

The first message sent over the new transatlantic telegraph cables was on August 16, 1858, when Queen Victoria and President James Buchanan exchanged pleasantries, signaling a successful connection of North America to Ireland, and in turn England and the rest of Europe. Although this particular cable lost effectiveness in just a matter of weeks and failed, it proved that what one man set out to do was possible. That man was Cyrus West Field.

Unlike the instant messaging of today that still uses undersea cables, the Queen's message to the U.S. President took almost 16 hours to send over the 3,200-kilometer cable. Prior to this first successful attempt at connecting the continents, though, ships carried messages, taking anywhere from ten days to two weeks depending on the weather. This meant that if you sent a letter to America from Europe it could take up to four weeks to get a reply.

Samuel F. B. Morse, an artist-turned-inventor developed the first commercially successful telegraph. Many others before him had attempted this, but by the mid-1830s, he had created Morse Code, a set of signals representing language in telegraph messages. In May 1844, Morse sent the world's first commercial telegraph line with the message "What hath God wrought," from the U.S. Capitol to a railroad station in Baltimore. In just a decade's time, more than 20,000 miles of telegraph cable spanned the United States.

In 1850, the world's first submarine telegraph cable was laid and connected Britain to mainland Europe. Two years later, in 1852, Britain and Ireland became the next to get connected. This line, however, didn't last long. It broke after one three days! By the following year, though, Ireland was connected with Scotland and the idea of the next logical step to connect America with Europe was percolating by 1854 in Cyrus Field's mind.

Field convinced the United States and British governments of the feasibility of the plan and each country agreed to lend ships to see it through. Britain loaned the *Agamemnon* and the U.S. supplied the *Niagara.* The first attempt to link the countries came in 1857, but too much slack was being used and the paying out gear malfunctioned causing breaks in the cable. The following year saw success with pleasantries expressed to one another between the Queen and President Buchanan. This line did not last long, though, and within just a few weeks the signal weakened and died once again.

But Cyrus Field did not give up. He made several attempts in the 1860s as new companies formed. The Gutta Percha Company that manufactured the insulation came together with Glass & Elliot that made the cable core to form the Telegraph Construction and Maintenance

Company. Instead of using two ships, which caused logistical issues, they decided to employ the *Great Eastern,* the only ship in the world capable of carrying the complete ocean section of the cable on board. Three large tanks to hold the coils of cables replaced the luxury furnishings of the former passenger liner. Although this voyage in 1865 ultimately proved unsuccessful, with the improved machinery and equipment, it demonstrated that the transatlantic cable was indeed possible, and plans began for the next try before the ship even reached the shores of England.

In 1866, learning from the technical issues of the previous journeys, the crew and Field were able to spot dangers quickly and rectify them before disaster. They succeeded in recovering the lost cable of 1865 through some skillful navigating by Robert Halpin and testing proved the cable still functioned. Finally, a permanent cable connection linked the continents of America and Europe. Improved materials helped the speed at which communication could be sent. The slogan "Two weeks to two minutes" was coined to demonstrate just how much improvement the telegraph cable was over dispatches sent by ship. The cable was revolutionary, altering personal, commercial, and political relations between people across the Atlantic Ocean.