

Volume 15

Number 032

**Marconi's First Transatlantic
Transmission**

Lead: At the end of 1901, twenty-seven year old Guglielmo Marconi made the first transatlantic wireless transmission, but his outstanding achievement, like so many of the breakthroughs of science, built on the discoveries of others.

Intro.: *A Moment in Time* with Dan Roberts.

Content: For generations prior to Marconi's historic transmission, science had known that electrical current emanating from telegraph wires could excite or energize metallic

objects at not-inconsiderable distances. This phenomenon was given theoretical credence in an 1865 essay by English physicist, James Clerk Maxwell, who posited that electrical impulses travel through space in waves in a manner quite similar to light waves and at the same speed. In the 1880s German scientist Heinrich Hertz proved that electrical current could be manipulated and transmitted at will between non-connected objects through a special medium he called the ether.

Yet it fell to an Irish-Italian inventor, Guglielmo Marconi, by trial and error and sheer force of will, to assemble the various theories into a practical application. Working at his

father's Italian farm, Marconi applied a Morse telegraph key to the Hertzian spark and gradually extended the distance he could "transmit" the bursts of electrical from an emitter to a device he improved called a coherer, invented in 1892 by Edouard Branly.

When Italian government officials proved uninterested, Marconi took his inventive genius to England, where a pent-up need for this maritime nation to communicate with ships at sea secured patent protection and investment income for Marconi's ideas. Gradually, he extended the range of his transmissions until he was ready to try to bridge the Atlantic.

At that time, many scientists doubted that radio waves would conform to the curvature of the earth, but, would, like light waves, travel in a straight line. This would prevent the wireless transmission over extremely long distances. Marconi simply ignored the debate and ultimately solved the riddle by proving that radio waves were reflected by the ionosphere and returned to the earth.

He built a powerful transmitting station on the coast of Cornwall and a receiving unit in Newfoundland with antennas borne aloft by kites and balloons. On December 12 and 13, 1901, his associates in England began transmitting the letter “s” in Morse

code at specific intervals during daylight hours and these were heard by Marconi and confirmed by his crew. Soon, through improvements in the equipment, wireless transmissions of radio waves were a commonplace feature of communication worldwide.

Research by Anthony Gattuso, at the University of Richmond, this is Dan Roberts.

Resources

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