Marconi, Guglielmo

by M. C. Sexton

Marconi, Guglielmo (1874–1937), pioneer of wireless telegraphy, was born 25 April 1874 of mixed Irish–Italian parentage: his mother, Annie, from Enniscorthy, Co. Wexford, was the only child of Andrew Jameson, of the Jameson family of distillery fame, which had settled in Ireland from Scotland in the 1790s. His father, Giuseppe, was a wealthy landowner aged 37 from near Bologna and was already a widower with one son when he married Annie, then only 19 and a student of music in Bologna. They eloped for the marriage in Boulogne in 1864. Alfonso (b. 1865) was the first child; Guglielmo was born nine years afterwards at their home, the Villa Grifone, 15 km from Bologna.

The name of Guglielmo Marconi will be forever associated not only with his pioneering developments in practical wireless telegraphy in the late nineteenth century, but also with his major commercial involvement in national and international communications during the early twentieth century. In this latter period several spectacular achievements clearly stand out: the successful transatlantic transmission between Cornwall and Newfoundland (December 1901), the wireless calls for assistance from the *Titanic* (April 1912), and the global coverage in communications using shortwaves during the 1920s.

Marconi's education may be summarised in his own words, taken from his Nobel prize lecture at Stockholm (11 December 1909): ‘In sketching the history of my association with radiotelegraphy I might mention that I never studied physics or electrotechnics in the regular manner, although as a boy I was deeply interested in those subjects. I did, however, attend one course of lectures on physics under the late Professor Rosa at Livorno, and I was, I think I might say, fairly well acquainted with the publications of that time dealing with scientific subjects including the works of Hertz, Branly, and Righi.’ Professor Augusto Righi of Bologna University was persuaded by Marconi's mother to take in her younger son as a laboratory assistant. In 1894 Guglielmo came across an account of the possibilities of Hertzian waves, outlined by Oliver Lodge in a commemorative lecture in London. He immediately embarked on a series of experiments at the Villa Grifone and within twelve months established wireless transmissions over a distance of almost 2 km.

Having been rebuffed by the Italian navy, possibly since he had failed the entrance examination, Marconi, accompanied by his mother, travelled to London and took out the first patent for wireless telegraphy on 2 June 1896, based on the work of Hertz, Branly, and Righi as well as his own significantly successful aerial system. Through his London cousin Jameson Davis, Marconi was introduced to Sir William Preece, chief engineer of the British Post Office, who quickly placed considerable resources at Marconi's disposal. Next followed a spectacular public transmission/receiver

success on Salisbury Plain. Marconi then involved himself in a series of tests along the English Channel involving land, ships, and lighthouses, culminating in a successful link for the first time across the Channel itself between the South Foreland lighthouse and Wimereux near Boulogne (March 1899).

Following the successful demonstrations in Italy and England, Marconi turned his attention to Ireland and, commencing in 1898, set up a series of commercial ship-to-shore stations around the Irish coast, beginning with Ballycastle/Rathlin Island. This led to the spectacular reporting from the sea of the Kingstown regatta (July 1898), followed by a link between Queen Victoria's residence on the Isle of Wight and the royal yacht on which the prince of Wales was recovering from an injured knee. Other stations were at Crookhaven, Co. Cork (1901), Rosslare, Co. Wexford (1901), Malin Head, Co. Donegal (1903), and Valentia Island, Co. Kerry (1914).

Having established the probable feasibility of a transatlantic link in 1901, Marconi constructed a massive station at Clifden, Co. Galway (1907), which at its peak employed upwards of 250 people. It was the most modern station in the world at that time, with magnetic detectors, directional aerials, tuned circuits, and a timed spark system for effectively generating continuous radio waves (the ‘singing spark’). An ancillary station at Ballybunion, Co. Kerry (1912), was ultimately used in 1919 for the first voice transmission across the Atlantic following the advent of thermionic valves. By undercutting the wire telegraph systems in place since 1866 with his ‘Marconigrams’, Marconi literally avoided looming bankruptcy for his company. Both Clifden and Crookhaven were damaged beyond repair during the Irish civil war (1922–3). However, at that stage Marconi had turned his attention to the emerging radio sound broadcasting and was involved in supplying transmitters to the BBC in 1922. He also approached the newly established Irish Free State with a demonstration as early as 1923 and tendered successfully for the Dublin transmitter 2RN (1926), Cork 6CK (1927), and Athlone (1933).

Internationally Marconi, using his steam yacht *Elettra* as a floating laboratory, virtually encompassed the entire globe with a system of shortwave communications which complemented the global cable telegraphy network established by Julius Reuter some sixty years previously. Marconi's final achievement in 1934 was to enter the harbour at Sestri Levante in the Italian Riviera using only a radio beacon, with all windows blacked out on the *Elettra.* It was a foretaste of the ‘blind flying’ aircraft navigational guidance systems.

Apart from the Nobel prize, Marconi was the recipient of numerous distinctions both in Italy and abroad. During the 1920s he was elected president of the Accademia Reale Italiana and of the newly created Consiglio Nazionale delle Richerche. He was also created marquis in 1929. These distinctions were undoubtedly supported by Benito Mussolini and made Marconi a de facto member of the Fascist party. It appears to be generally accepted that he acted primarily as a businessman

who accepted Mussolini's support, coupled with a genuine pride in his own major achievements. Marconi's death, from a heart attack on 20 July 1937, was commemorated by several minutes of total radio silence throughout the world.

He married (1905) Beatrice O'Brien, daughter of Lord Inchiquin of Dromoland Castle, Co. Clare; they had three children, Degna (b. 1908), Giulio (b. 1910), and Gioia (b. 1916). The marriage was dissolved by mutual consent in 1924 and Marconi then married (1927) Maria Cristina Bezzi-Scali, from an old aristocratic family in the Ravenna–Bologna region. A daughter, Elettra (b. 1930), subsequently played a major role in the Marconi centenary celebration in Ireland 1994–8.

G. Marconi, ‘Wireless telegraphy’, *Journal of the Institution of Electrical Engineers*, xxviii (1899), 273–316; O. E. Dunlap, *Marconi, the man and his wireless* (1937); E. H. Armstrong, ‘The spirit of discovery: an appreciation of the work of Marconi’, paper read to American Institute of Electrical Engineers meeting, New Jersey (1953); D. Marconi, *My father Marconi* (1962); L. Reade, *Marconi and the discovery of wireless* (1963); A. Guagnini and G. Pancaldi*, Cento anni de radio: le radici dell'invenzione* (1995), 357–418; M. C. Sexton, *Guglielmo Marconi: the Irish connection* (2005)