NOT FOR REPRODUCTION OR USE WITHOUT PERMISSION

THE NEW JERSEY
ITALIAN AND ITALIAN AMERICAN HERITAGE COMMISSION

PILOT CURRICULUM PROGRAM 2004-2005

Italian Heritage Curriculum: "The Universality of Italian Heritage"

Unit Three: Arts & Sciences
"Who Invented What?"

Supplemental Information: Guglielmo Marconi

On April 25, 1874, Giuseppe Marconi, an Italian country gentleman, and his second wife Annie Jameson, daughter of Andrew Jameson of Daphne Castle in the County Wexford, Ireland and of Jameson Whiskey fame became parents to their second son, Guglielmo, in Bologna, Italy. Giuseppe's two sons spent their childhood in England with their mother Annie. From his mother, Guglielmo inherited tenaciousness and firm resolve, along with knowledge of the English language. From his father, he received a strong will and adroit business talent.

Guglielmo was privately educated in Bologna, in Florence, and in Leghorn. As a young student, he developed an ardent passion for both physical and electrical sciences. Marconi studied physics unremittingly at the technical institute of Livorno and the University of Bologna. On his family estate, *Villa Griffone* in Pontecchio, Marconi used his own laboratory for elementary experiments, trying to transmit a wireless message with electromagnetic waves. Through assiduous study of research from earlier scientists such as: the Scotsman, Clark Maxwell, the German Heinrich Hertz, the Italian, Augusto Righi, and the Englishman Oliver Lodge, the young Marconi succeeded in sending wireless signals over a distance of one and a half miles.

On February 2, 1896 Marconi returned to England where he met with his cousin David Jameson, an Anglo-Irish scion of the whiskey empire. Jameson introduced his cousin to the Director of the Post and Telephones Company, Sir William Preece, who quickly became an enthusiastic supporter. Later the following year on June 2, 1897, Marconi was granted the world's first patent for a system of wireless telegraphy-- British Patent number 12039.

On July 27 Marconi performed his first official experiment from the terrace of the Post Office, at Three Mile Hill sending signals across the Salisbury plain. Also during July 1897 Marconi formed The Wireless Telegraph & Signal Company Limited. On September 2, Marconi sent signals between Penarth and Weston, England; he had sent signals across the Bristol Channel.

Later in 1897 the Bologna native gave a demonstration to the Italian Government at Spezia, where wireless signals were sent over a distance of twelve miles. In 1899 Marconi established wireless communication between France and England, across the English Channel. He then erected permanent wireless stations at The Needles, the Isle of Wight, at Bournemouth and later at the Haven Hotel, Poole, and Dorset.

Copyright 2004 – New Jersey Italian and Italian American Heritage Commission U3-LP-002-S1

NOT FOR REPRODUCTION OR USE WITHOUT PERMISSION

In 1900 Marconi took out patent #7777 for "tuned or syntonic telegraphy." In December 1901, he transmitted the first wireless signals across the Atlantic between Poldhu, Cornwall, in the United Kingdom and St. John's, Newfoundland in Canada. He wanted to demonstrate that wireless waves were not affected by the curvature of the Earth, so his experimental transmission traveled 2,100 miles.

On February 22, 1902, during a voyage on the American liner *Philadelphia*, he first demonstrated "daylight effect" relative to wireless communication. Later that same year, he patented his magnetic detector which then became the standard wireless receiver for many years. Marconi came to the New World to build a big radio station in Glace Bay in Nova Scotia, through invitation of the Canadian government. While crossing the Atlantic, the Italian electronic genius conducted important experiments, discovering the harmful influence of solar radiation on transmissions. He soon realized that the coherer could not meet the mounting needs of stability of reception. To compensate for this deficiency, he created a new kind of detector. This new device was the Magnetic Detector, which he patented on June 25, 1902.

In December 1902 Marconi transmitted the first complete messages to Poldhu from stations at Glace Bay, Nova Scotia, and afterward from Cape Cod, Massachusetts. These early tests culminated in 1907. Later, after the first shorter-distance public service of wireless telegraphy had been established between Bari, Italy and Avidari, Montenegro. He then opened the first transatlantic commercial service between Glace Bay and Clifden, Ireland.

In 1905 Marconi patented his horizontal directional aerial, and during the same year he married the Honorable Beatrice O’Brien, daughter of the l4th Baron of Inchiquin, Ireland. His marriage with O'Brien lasted twenty-two years and produced a son and two daughters.

Four years later in l909, Marconi shared the Nobel Prize in Physics, with Karl Ferdinand Braun, for his important work in radio communications. Marconi has received honorary doctorates from several universities and many other international honors and awards

When the "unsinkable" ocean liner *Titanic* struck an iceberg and sank to the bottom of the sea on April 15, 1912, the horrific tragedy cost hundreds of lives; nonetheless, those who survived did so because rescuers could receive distress calls from the Marconi wireless equipment on board. The Right Honorable Herbert Samuel, British Postmaster General at the time, stated: “Those who had been saved, had been saved through one man, Mr. Marconi and . . . his marvelous invention.”

In 1914, prior to Italy's entrance into World War I, Marconi joined the Italian Army as a lieutenant. He was promoted to captain in 1915 after Italy joined the Allied side in the Great War. Marconi was then transferred to the Italian Navy with the rank of commander. As a naval commander, he was part of the Italian government's mission to the United States in 1917. After the war in 1919, Marconi was appointed Italian plenipotentiary delegate to the Paris Peace Conference at Versailles. The Italian government awarded Marconi the Italian Military Medal in 1919 for his war service.

Copyright 2004 – New Jersey Italian and Italian American Heritage Commission U3-LP-002-S1

NOT FOR REPRODUCTION OR USE WITHOUT PERMISSION

During the war, Marconi returned to his investigation of short waves, which he had used in his first experiments. After further tests by his colleagues in Britain, he conducted an intensive series of trials from installations at the Poldhu Station and in his yacht *Elettra,* cruising in the Atlantic and Mediterranean. After the tests, the British Government decided to use Marconi's system for communications throughout the Empire. The first beam station was opened in 1926 between England and Canada. Other stations were used the following year.

In 1927, Marconi had his marriage to Beatrice O'Brien annulled, and he then wedded the Countess Maria Cristina Bozzi Scali. They soon had a baby daughter. By the next year on January 1, Marconi was named president of C.N.R. (National Research Council) and he continued his work. On March 26, 1930, from aboard the *Elettra,* moored in the harbor of Genova, he sent a signal that covered 14,000 miles and lit the town hall in Sydney, Australia. On September 17, Marconi was then named President of the Italian Royal Academy. Because of the start of regular radio services all throughout the world, the air was becoming more and more jammed with signals.

On February 12, 1931 Marconi, in the presence of Pope Pius XI, inaugurated the new Vatican Radio Station, and on September 13 of that same year, from his office in Rome, he lighted the statue of the Redeemer in Rio de Janeiro, via the Coltano repeater. In 1931 Marconi began research into the propagation characteristics of still shorter waves, resulting in the opening of the world's first microwave radiotelephone link between the Vatican City and the Pope's summer residence at Castel Gandolfo in 1932.

After some more time in England, Marconi moved to Rome in 1935, never to leave Italy again. He died July 20, 1937 at the age of sixty-three. His body was laid to rest in the mausoleum on the grounds of his family estate at *Villa Griffone*. In honor of the great Italian inventor, wireless stations throughout the world fell silent for two full minutes. For those two minutes, the airwaves were again as silent as they had been before Marconi's miraculous breakthrough.

Copyright 2004 – New Jersey Italian and Italian American Heritage Commission U3-LP-002-S1