LUIGI SOLARI: A LIFE DEVOTED TO RADIOTELEGRAPHY

Speech given by Ambassador Luigi Solari jr, the scientist's grandson, for the centenary celebrations of Guglielmo Marconi Nobel Prize award. (ISIS Institute, Osimo, Ancona - December 18th 2009)

I wish to thank the school authorities who are present here, and give a special thanks to ISIS head-master, Prof. Giri, and Ancona Admiralty, who invited me to this event and gave me the opportunity to pay my tribute to Guglielmo Marconi and talk about my grandfather's life and work.

Luigi Solari, whose family was from Le Marche, a region in central Italy, not only was the closest assistant of the brilliant inventor but also the main promoter of the radiotelegraphy industrial development in Italy and abroad. Although he was a famous personality in the first half of the Twentieth century and spent his entire life helping the great Bolognese inventor achieve his success, which has often been celebrated after his death, Solari was soon forgotten and is now unknown to most people.

To be honest, two years ago the Town Hall of Loreto, where my family comes from, celebrated my grandfather on the fiftieth anniversary of his decease. They organised an event which took place while the book *Passione, radio e onde elettriche* (Passion, radio and electrical waves) by the radio engineer and Navy Marshal Filippo Pacelli from Portorecanati, was being presented. Mr Pacelli recalled my grandfather personality and some moments of his activity, showing great admiration for his fellow-countryman. On that occasion Admiral Trevisani, Commander in Chief of the Navy Department of the Adriatic coast, wanted to express the appreciation of the Italian Navy for the two famous officers, Marconi and Solari. He remembered the important role played by the Navy in the scientific and industrial development of our country during the early Twentieth century.

My grandfather has always been proud of joining the Royal Navy. Although he left service quite soon, one of the thing he was mostly proud about was his promotion to Captain, which occurred when he entered the Navy Reserve.

As I already said during my previous conference in 2007, although Luigi Solari's origins were from Le Marche, he was born in Turin in 1873. His father Girolamo had moved there after serving as mayor in the town of Loreto. He was the first mayor in charge after Italy's union. In Turin Girolamo Solari married his cousin, Countess Erminia Sapelli di Capriglio, who belonged to an ancient family of Piemontese patriots. Although born in Turin, my grandfather spent the most part of his childhood and youth in Le Marche until he joined the Navy, first enrolling in the Cavallero Institute in Florence, and later moving as officer cadet to the newly founded Navy Academy in Livorno. In 1893, at the age of twenty, he was appointed the junior officer rank of Sub-Lieutenant.

It was in Florence and Livorno that Solari and the young Marconi met and became friends. Marconi, who was there to study, would then complete his first and famous radiotelegraphy experiments in his villa at Pontecchio and move to London in order to promote his invention. The Italian Ministry for Post and Telegraphs had shown no interest in his invention.

In 1897 Solari was sent by his superiors to study at the Polytechnic Institute “Galileo Ferraris” in Turin, where in 1899 he specialised in engineering and took a degree that at the time was defined “industrial application skills for electrical engineering”. During those two years Solari had the opportunity to attend Marconi’s first radiotelegraphy experiments in the Gulf of La Spezia carried out between the coast and the ship “San Martino”. Marconi had in fact returned to Italy, called by the Navy Ministry.

In 1900 Solari joined the China Campaign on board the ship “Vittor Pisani” in an international expedition whose goal was to free Tientsin and all the Western diplomatic offices at Beijing, which had been assaulted by nationalist rebels. When my grandfather came back home was appointed Director of Experiments at the San Bartolomeo radiotelegraphic station in La Spezia. There he was able to reproduce the syntonic circuits that Marconi had experimented in the Bristol channel, and used for his experiments a special radio detector or cadmium coherer that he had invented. The results of those experiments were so successful that Admiral Morin, at the time Navy Minister, decided to re-establish an official cooperation with Marconi, who having received no support to his research in Italy, had moved to London to patent his radiotelegraphy system and found the Marconi Company.

In the summer of 1901 Marconi hired Solari as his assistant in Poldhu, Cornwall, where the first experimental station for transatlantic transmissions was being built. From that station the scientist carried out the famous wireless transmission to St. John New Foundland in Canada.

In his duty as Lieutenant Solari sent a secret report on the experiment to the Navy Ministry that hardly believed in such success. But my grandfather did not hold back. In 1902 he convinced Marconi to sign an agreement with the Italian government which granted free use of his patents for military purposes. It also provided the Navy with six syntonic stations that would then be installed under my grandfather supervision at Monte Mario in Rome, on Caprera island and on four war ships. The Navy purchased the stations at only sixteen thousand liras. Always in 1901 Solari, who was supported by King Victor Emmanuel III, was able to convince the new Navy Minister, Admiral Mirabello, to give Marconi the “Carlo Alberto” cruiser, where he wanted to test the efficiency of his discoveries.

Solari was responsible for a special laboratory-station that he installed onboard the ship. He assisted Marconi during that long and famous navigation which brought them on a round trip across the western Mediterranean sea and the Channel to the North and Baltic sea. Once back, Solari wrote an official report where he confirmed the possibility of making intercontinental wireless transmissions going beyond the curvature of the earth. Thanks to the success of that expedition and the King’s continuous support, in 1902 the “Carlo Alberto” cruiser was once again given to Marconi for another experimental campaign, this time across the northern Atlantic Ocean. On that occasion Marconi, with Solari scientific and technical assistance, launched the first radiotelegraphic service between Europe and the United States, connecting Marconi’s station at Poldhu in Great Britain to the large plant at Glace Bay in Canada.

1903 was a happy year for my grandfather, because he had both personal and professional success. He married the woman of his dreams, his cousin Baroness Ida Rubin de Cervin, who belonged to an ancient military family from Savoy, and was chosen to represent Italy at the first International Radiotelegraphic Conference in Berlin, where he opposed the German decision of limiting at only one hundred miles the range of naval and coastal radiotelegraphic stations. Unlike those of the German Telefunken, the stations of the Marconi Company were already able to cover longer distances. Solari spoke in Marconi's defence also on the following year at the International Conference in St. Luis.

Between 1904 and 1906 Solari, who had been put out of service by the Navy, worked as Chief of Department for the Ministry of Post and Telegraphs. He organised the first public wireless telegraphy service in our country and launched the construction of an extraordinarily powerful radiotelegraphic station at Coltano, near Pisa, that he designed and built together with Marconi.

This was possible thanks to an agreement between Marconi and the Italian government. The ultra modern plant, which would open five years later, was built on a 114-hectare land donated by King Victor Emmanuel III from the royal estate of San Rossore. The plant included 16 very high antennas mounted on the same number of metallic towers, which made it possible to perform transoceanic transmissions in particular to the most distant Italian colonies like Eritrea and Somalia. In the same years Solari supervised the construction of radiotelegraphic plants in Bari, Apulia, and Antivari (now Bar) in Montenegro, which were aimed at connecting the two Adriatic shores. This connection was supported by another man from Le Marche, Earl Stelluti-Scala from Fabriano, who at the time was the Post and Telegraphs minister.

In 1905 my grandfather played a key role in raising funds for Marconi's entrepreneurial activities. He was able to obtain financial support from Banca Commerciale and Banca d'Italia (Italy's central bank), which was directed by the famous Governor Stringher.

In 1909 Marconi won the Nobel Prize, whose centenary we are celebrating today. At first Marconi proved sceptical towards such recognition, because he thought he should have won alone and not share the prize with Karl Ferdinand Braun. As he said to my grandfather, «although Braun was known in the field of physics and telegraphy, he had not at all invented the radio».

Before 1914 my grandfather gradually became an active entrepreneur in the field of industrial radiotelegraphy, making business trips to the main European countries where he was always welcomed with great honours, thanks to the support of local Italian ambassadors. As personal assistant of the inventor and general representative of the Marconi Company, Solari promoted and obtain that Marconi's systems and equipment were adopted by the Navy in Italy, Spain, Portugal, Greece, Bulgaria and the Ottoman Empire. He supervised and directed the opening of the "Officine Marconi" in the port of Genoa, an Italian company specialised in providing our merchant navy with radiotelegraphic equipment. He organised services on board our major cruise and cargo ships, joined the Serbo-Turkish war in 1912-3 as technical adviser for the Serbian Army, organising their first radiotelegraphic service. At that time my grandfather also promoted the opening in Italy of an Adriatic Telephone Company, which would then be called T.I.M.O.

At the burst of the First World War Solari asked the Navy to return into active service but government thought it was more useful to confirm his position as director of the Navy radiotelegraphic service. Government also wanted him to reorganise for the war the "Officine Marconi" in Genoa. He was responsible for the project and construction of modern field radio stations for the army and had to carry out experiments trying to connect the first military aircrafts and airships.

Between 1919 and 1924 Solari enlarged the "Officine Marconi" in Genoa - the number of employees rose to 2000 - which thus became the first national company for the production of thermionic valve equipment and direction finders. Solari also supervised the construction of a radiotelegraphic station in the independent state of Fiume, introduced the use of radiotelegraphy in Switzerland, Spain, Portugal and Angola. His most important achievement was the foundation of "Marconi Italiana", a large stock company specialised in industrial applications of long-distance radiotelegraphy and in building modern short-wave stations.

Between 1925 and 1928 Solari founded the stock company "Radiofono", whose name was then transformed into "Unione Radiofonica Italiana" (URI). It was the first private company in our country working in the field of medium wave radio transmission. Later on the fascist government decided to acquire the company for reasons of public interest and in 1927 changed its name in EIAR ("Ente Italiano per le Audizioni Radio"). Modern RAI - Italian public broadcasting service - was born from that company.

As a consequence of a decree banning the use of radiotelegraphic equipment within the Merchant Navy, such as those provided by the Marconi Company International, my grandfather founded S.I.R.M. ("Società Italiana Radio Marittima"), which substituted the foreign company and

introduced short wave systems on cruise and cargo ships. After the Lateran Pacts and the Concordat ratified in 1929 between the Kingdom of Italy and the Catholic Church, my grandfather helped Marconi during his negotiations with Cardinal Gasparri and the Holy See for the construction of Radio Vatican station, which was then solemnly opened in 1931 with the first world radio broadcast of a human speech, given on that occasion by Pope Pius XI.

The fortunate 1931 was followed by a sad year. In fact in 1932 my grandfather was shot four times with a revolver by a disturbed employee near his office at via Condotti in Rome. On that occasion Marconi gave a deposition in his defence which he concluded with these words; «I hold Marquis Solari in the highest esteem for what he has done so far and is still doing at present». Once he recovered, my grandfather devoted the following years to a project in which Marconi was highly interested; the development of micro waves, that are radiations measuring less than a metre.

Thanks to the cooperation between the "Marconi Italiana", where my grandfather was managing director, and the Navy, they could carry out complex experiments at the station of Torrechiaruccia near Civitavecchia. They got very close to discovering the radar.

Further experiments focused on the development of TV broadcasting, a subject that would then be treated at the first International Conference on Television, taking place in Nice, France, in 1937. That was the last of a series of conferences attended by Solari.

Events of that period began to undermine some activities of the business group directed by my grandfather; the Second Italo-Ethiopian war in 1935-6, the sanctions of the League of Nations and the fast worsening of the friendly relationships between Italy and Great Britain, where Marconi had strong business and family links (both his mother and his first wife were British). Notwithstanding that my grandfather continued his activities that had won him so many honours during his career. One of these was on April 20th 1937 when King Victor Emmanuel III conferred upon him the prestigious title of Knight of Labour.

Only three months later, on July 20th 1937, Guglielmo Marconi died of a heart attack. The whole country and the world were suddenly plunged into mourning. It was a deep grief for my grandfather, as he demonstrated with his commemorative speech broadcast on radio during those days. A short period of time had passed when my grandfather's health began to worsen. At the age of 65 he decided to resign from some of the management positions he had held so far.

At the burst of the Second World War, when Great Britain entered into war against Italy, my grandfather was forced to retire and definitely leave the Marconi Company, which was requisitioned by the Fascist government that believed it was supporting British interests.

Solari devoted the rest of his life to writing books and articles on radiotelegraphy and on Guglielmo Marconi. He had already been the scientist official biographer during his life time and in 1928 Morano publisher in Naples had published his book *Marconi, dalla borgata di Pontecchio a Sydney d'Australia* ("Marconi's life from the village of Pontecchio to Sydney in Australia").

In five years he wrote four books on *Marconi in his house in Rome; Marconi nell'intimità e nel lavoro* ("Marconi's private and professional life", Mondadori, 1940), *Sui mari e sui continenti con le onde elettriche* ("Through oceans and lands with electrical waves", Bocca, 1942) e *Storia della Radio* ("History of radio", Garzanti, 1945). My grandfather edited the radiotelegraphy entries of Treccani encyclopaedia.

After the Second World War democratic Italy did not forget about him. On June 2nd 1953 president Luigi Einaudi conferred upon him the title of Great Officer of the Order of Merit of the Italian Republic, the highest ranking honour of the Republic.

I remember the last years of his life, when I was young. I remember him exactly as he was described in a nice book published in the early Fifties, containing the profiles of the Knights of Labour, those men who contributed with their abilities and dynamic activities to Italy's industrial development.

This was his description:

He is an old and charming gentleman with a peaceful and smiling look (…). He spends his days in serene meditation, recalling his rich and adventurous existence (…).

He thinks of a world so far in time, almost vanished, although it only goes back to dozens of years ago, (…) while a feeble twilight is gilding the sky of Rome (…).

And thus he longs for his past works, when he was guided by the pure and uninterested spirit of science that had accompanied all his life. A life spent as a pioneer, side by side to one of the greatest scientists and inventors of our time.

Luigi Solari died on February 7th 1957. The Navy paid him a final tribute with a solemn military ceremony celebrated at the Basilica of Santa Maria del Popolo in Rome.

His remains are now in a small cemetery in Loreto, not far from the Adriatic sea that he had so much loved during his life. When he was a child he used to watch the horizon from a window in his family home on the hills surrounding Loreto.

Now that I own that house, I am gradually moving there all the papers and objects that belonged to my grandfather, promising to myself that one day I'll put them at researchers' disposal.

I wish to conclude my speech with the nice and altruistic words pronounced to my grandfather by Marconi a few time before he died; «Radio shall contribute to the progress and common good of people in time of peace. It shall contribute to the triumph of justice and mankind in time of war».