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Maria Inês QUEIROZ

Marconi in Portugal: the first divulging spaces

Within the Portuguese context, the history of wireless communications and the building of its respective world-wide network dates back to the end of the nineteenth century, shortly after Guglielmo Marconi conducted his first experiments in radio-electricity. The system was mainly divulged, at first, to the military establishment, the Navy being its main supporter.¹ In fact, even though it faced initial skepticism, wireless telegraphy was quickly understood in its whole strategic dimension, especially regarding naval and coastal communications.

In spite of that initial skepticism, which had particularly to do with the system's level of efficiency, the fact remains that as G. Marconi gradually overcame the barriers placed by distance, so grew optimism in Portugal, namely around the potential of radio communications at sea. This optimism was largely revealed by the scientific papers of the day.

One of the most important defenders of radiotelegraphy in Portugal was Carlos Viegas Gago Coutinho, a Navy officer who, in 1922, became famous as a member of the duo that achieved the first South Atlantic crossing by airplane. Among several works, he also left a few studies about wireless communications. On May 15th 1900, Gago Coutinho published a scientific paper on radiotelegraphy in the *Revista Colonial e Marítima* ("*Colonial and Maritime Review*"), in which he underlined the radio's strategic role at sea and over land. He mentioned then experiments conducted in 1896 by a "young Italian student," emphasizing the success achieved by his tests in "distance electric telegraphy, without the use of very long wires." Marconi appeared there as an innovating young man, whose name had been "associated to this extraordinary invention because it was him who perfected the process and made it widely known."² And, as he described these experiments, Coutinho also understood, from the start, the importance of introducing the new system to the Portuguese Navy.

1. See, for instance: "Informações diversas – Notas sobre a telegrafia sem fios – Estudos de M. Preece", *Anais do Clube Militar Naval*, 3 – XXVIII (Lisbon, March 1898), p. 225-231.

2. Carlos Viegas Gago Coutinho, "Telegrafia eléctrica sem fio", *Revista Portuguesa Colonial e Marítima*, 33 (1900), p. 183.

One doesn't have to insist upon the great value of Marconi's works: he has achieved wonders, so to speak, transmitting, by his process, orders that in open sea have reached 100 miles. In the Italian, British and American navies, the process was already adopted and tried during naval maneuvers, and also in South Africa, and it is not difficult to predict that soon the wireless electric telegraphy system will be adopted by all war navies worthy of that name.³

Interestingly, and even though this was a very novel communication medium, still at an experimental stage, Gago Coutinho had already understood the enormous potential of radio connections, at both commercial and military levels, showing a strong sense of optimism towards the future:

And perhaps it is not an utopia to imagine that it will be possible to establish communication links between ships at sea, or between trains and arrival and departing train stations; so their internal goings will become known and we will be able to avoid ramming, today's sea travels most common and terrible danger, and sea travels are something without which we can no longer live, in the modern age of movement.⁴

Two years later, Gago Coutinho raised again his voice for the urgency of a Portuguese radio-electric network, stating that the Marconi system showed the more technical reliability, and saying that the building of coastal and naval stations could greatly profit the Nation, namely thanks to telegraphic transmissions made by people traveling in passenger ships between Brazil and Africa. Coutinho also alluded to the strategic value conferred to the Portuguese archipelagos of Azores and Madeira by their geographical location, bearing especially in mind their Atlantic position. For the companies that laid out submarine cables, these islands played a double role: though they were indispensable to the submarine communications network, they were also greatly dependent upon that same network. And that was why resorting to radio meant the end of the strangled triangle Portuguese Mainland-Azores-Madeira. In a certain manner, it would represent a victory as connecting these territories meant also an added Portuguese self-sufficiency within the framework of the Nation's international communication capabilities. That was also the case of the Portuguese colonial network, equally dependent on the British cables "giant." Therefore, connections between the archipelagos of Madeira and Cape Verde and from Cape Verde to S. Tomé and Angola could not be ignored.⁵

In the Portuguese Navy, the study and divulging of wireless communications focused progressively on the Marconi system, which was already showing capacities that were superior to the other systems in the domain of naval communications. The Portuguese coast was even used by Guglielmo Marconi for some of his experiments in the year 1903.

3. Conclusion of the article begun in n° 33 of the same magazine, n° 34, p. 251.

4. *Id.*, p. 254-255.

5. Carlos Viegas Gago Coutinho, "Telegrafia eléctrica sem fio", *Boletim da Sociedade de Geografia de Lisboa*, December 12th, 1902, p. 183-184.

However, even though the lack of communication means among Portuguese ships was felt more and more acutely, this problem was only given a first solution in 1909, when the Portuguese monarchy was at an end. King D. Manuel II appointed a commission⁶ to consider the matter and select the radiotelegraphy system that proved to be more adequate to the Portuguese Navy. Between two proposals sent by the German Telefunken and the British Marconi's Wireless Telegraph Company (MWTC) for the supplying of a wireless connecting post, the commission ended up choosing the latter. They took into account the need to maintain technical uniformity with the British system, for this link would be indispensable in case of war.⁷ The first Portuguese Marconi station began to operate for the Navy Ministry shortly after, on February 16th, 1910. The Portuguese destroyers (*cruzadores*) *D. Carlos*, *S. Gabriel*, *S. Rafael* and *Adamastor* were also fitted with 1.5kW devices operating under the same system.⁸

But beyond the realm of scientific interest and of the ideas regarding the benefits to be derived from the practical use of wireless communications, G. Marconi was going to play a role of great importance, during the beginning of the 20th century, in assembling the international grid of radio communications and also in transferring technical and scientific know-how to Portugal. In fact, his global project meant to establish a new world communications grid, in which national and colonial territories were to be included (Mainland, Atlantic islands and some African colonies). This project led to the creation of national companies entirely devoted to that purpose, and would end up as the origin of the Portuguese international wireless communications network.

On July 18th, 1925, the *Companhia Portuguesa Rádio Marconi* – CPRM (Portuguese Marconi Radio Company) was created, founded by the British company MWTC, after almost two decades spent negotiating the new network's concession with the Portuguese State.

Debates and concession

The process of establishing the first Portuguese radio communications network took place during a period of unusual political instability, because of the fall of the monarchy and the birth of the Portuguese republic, on October 5th, 1910. The republican regime brought new proposals for national economic development, including a concession to build the international radiotelegraphy grid, the negotiation of which was inherited from the last years of the monarchy.

6. “*Portaria* (law issued by the government), February 5th, appointing a commission to report on which wireless telegraphy system would be more convenient for adoption by the Navy's warships”, published in *Diário do Governo*, nº 28, February 6th, 1909.

7. *Arquivo Central de Marinha*, “Telegrafia sem fios – 1911-1931”, Caixa nº 1514. Informação, November 9th, 1911, sent by the President of the Commission on Wireless Telegraphy, António de Almeida Lima, to the Direcção-Geral da Marinha.

8. *A TSF na Armada – tópicos da sua história*, paper published by the navy on the 75th Anniversary of the introduction of TSF in the Navy and in Portugal (1910/1985). See Miguel Faria, *op. cit.*, 24.

During this period, Portugal had a skeleton radio communications structure, mostly oriented towards naval military communications, not to mention a small net established by the Eastern Telegraph group cable company at the Azores archipelago, whose operations were limited to inter-islands communication. And yet, the Portuguese territory, particularly the Azores archipelago, was becoming a geographical location of strategic importance to the future international radiotelegraphy network. This importance, also understood by the Portuguese authorities of the time, would lead the Marconi Company to increase its efforts to negotiate the building of the country's network.⁹

In a certain manner, the Portuguese network schematic conceived by Marconi's Wireless was associated with the assembly interests of the British radio communications structure; and in that sense, the geographic convergence and the territorial location of both colonial empires would lead to the simultaneous planning of their set-up. This was all the more necessary as the technical capacity of radio communications, as far as distance was concerned, was still in its infancy, and stations had to be placed every 4 000 km (approx. 2 500 miles) in order to ensure transatlantic communications.

In the process of negotiating the contract with the Portuguese government, Luigi Solari played a particularly relevant role. He was a Navy officer specialized in electronics, who from the year 1906 became the Marconi Company Italian representative and acted as the man in charge of negotiating the major concession contracts in several Mediterranean countries. As to the network's strategic design, the main reference points were located in the Azores islands, as well as in other Portuguese colonial territories: the Cape Verde archipelago, Angola (Western Africa), Mozambique (Eastern Africa) and Goa (India).¹⁰

In February 1910, shortly before the Republic, Solari seemed to have already concluded the deal with the Portuguese authorities. However, growing German competition in this sector affected Italian-British interests, with the direct interference of the German legation in Portugal in favor of the Telefunken concession.¹¹ Facing the threat of failing to grasp the contract against the German company, the Foreign Office sent a letter to the Portuguese Minister of Foreign Affairs, in July, in a clear diplomatic pressure maneuver.¹² The negotiation dossier would eventually be transferred to the republican directory and, in September 1911, Luigi Solari met again with the *Correios e Telégrafos* (Post Offices and Telegraphy) general manager, António Maria da Silva, in order to restart the process,¹³ at a time of growing protests due to the delay in setting up the Portuguese radio-telegraphy network.

9. *Ibid.*, p. 41.

10. Luigi Solari, *Storia della Radio*, Milan, 1939, p. 294.

11. *BT Group Archives*, BT_POST 30/3094. Telegraph wire n° 2, February 1910, sent by Edward Grey, the British Secretary of State of Foreign Affairs, to F. Villiers, with the British Legate in Portugal.

12. *Id.*, Official letter sent by Hugh Gaisford to Edward Grey, July 12th, 1910, mentioning the letter he had sent to the Portuguese Ministry of Foreign Affairs.

13. "Telegrafia sem fios", *Diário de Notícias*, September 3rd, 1911, 1.

These negotiations led to a first provisional contract, dated February 22nd, 1912. This document stated that MWTC would supply and assemble the stations in Mainland Portugal, Azores, Madeira and Cape Verde. In order to ensure efficient connections, the Lisbon and Azores stations would have to reach 1 600 km (approx. 1 000 miles), during the daytime, and the Madeira and Cape Verde stations would have to reach 2 500 km (approx. 1 500 miles). This contract would start a new controversy in the political arena, in which the government was accused of yielding to British diplomatic pressure precisely at a time when a radiotelegraphy conference was being prepared to be held in London that same year.¹⁴ The press, on the other hand, did not conceal its enthusiasm. *Ilustração Portuguesa* noted that even though Portugal was the last European country to adopt the system, it could very well be the one of the nations that would benefit the most from radio communications, concluding that:

Owning a very vast colonial empire about to enter a new phase of its existence, sea ports visited by merchant ships from all European nations, and a commercial traffic of some importance that, luckily, tends to grow considerably, it would be unnecessary to underline the enormous advantages of adopting the Marconi system.¹⁵

That same year, in July, a special commission brought to Parliament a detailed report on the content of the provisional contract. This analysis criticized the short reach of the planned facilities, and the consequence that some of the most indispensable connections were rendered impossible. But these limitations might have to do with the pressure applied by cable companies, which kept a privileged relationship with the Portuguese government. Lisbon was part of a fundamental axis of shipping traffic between Northern Europe and the world South of the equator, and between the Mediterranean and North Africa. It was thus having strategic importance as a communication point, at the same time as Cape Verde played an equally relevant role in the links between South America and Sub-Saharan Africa. As for the Azores, always at the centre of the debate, it was predicted that the opening of the Panama Canal would reinforce its strategic role in the North Atlantic shipping traffic.¹⁶ However, the increase of the power output of these stations faced another limitation: the Portuguese government's financial difficulties in acquiring the necessary equipment.

The Senate eventually approved the document, during the night of July 9th. Actually, this was also influenced by external factors, involving not only British diplomacy but also G. Marconi himself. On May 23rd, 1912, he gave a conference at the Lisbon Geographical Society, promoting his system. Industrialists, businessmen and the most influential Portuguese political personalities attended his address. The provisional contract, concerning the supply and assembly of radiotelegraphy stations by MWTC, was definitely turned into law on July 10th,

14. *Diário da Câmara dos Deputados*, 84, March 25th, 1912, 3.

15. "A Telegrafia sem fios em Portugal", *Ilustração Portuguesa*, 315, March 4th, 1912, 289.

16. *Diário da Câmara dos Deputados*, 158, July 5th, 1912, 15-16.

1912.¹⁷ The following year, the Navy post was opened to commercial transactions, pending the opening of the new commercial network. However, the difficulties of the Portuguese State led to severe financial restrictions, due to which the agreement expired and became null and void.

In 1914, World War I broke out and the Portuguese communications network was postponed. Nevertheless, in spite of the colossal material destruction and the enormous number of lives lost during this conflict, the war effort stimulated scientific investigation and technological development, which gave fundamental contributions to the changes brought about in the field of radio communications, namely the “short-wave Beam System” and the radiotelephony.

A new Marconi network: Portugal in sight

When World War I reached to an end, the building of the British and Portuguese telecommunications networks was still suspended, notwithstanding the existence of wireless outposts, built during the war for military purposes. On the other hand, the war effort gave an impulse to the innovation of radio communications systems, handing G. Marconi to new experimental fields. This would be the case of the development of the short-wave system and the radiotelephony, something that would bring G. Marconi to the Portuguese coast to conduct some experiments. In April 1920, the Portuguese press granted again first page honors to Guglielmo Marconi and his experiment on radiotelephony communication with the Navy Arsenal, from aboard the yacht *Elettra*.¹⁸ At the time, Marconi was traveling from England to Italy, stopping by the Portuguese coast, Spain and Algeria, making the most of his route to register several observations.

In spite of the absence of network, the Portuguese government tried in 1919 to respond to the urgency of ensuring radio communications in the colonies by purchasing to Marconi's Wireless new equipment to link its colonial territories in Africa.¹⁹ Meanwhile, the 1912 forgotten contract was eventually re-evaluated in August 1922, benefiting from the foresight that technological developments and political and economic post-war realities demanded the reformulation of the deal. This time, the concession would give Marconi the assembling and the exploitation of the Portuguese wireless network, and the physical space covered would then naturally have to include the remaining colonial territories.

A proposal was then made to annul the 1912 contract, giving back to MWTC the building and commercial exploitation rights of the Portuguese radio communications network, without any costs to the Portuguese State. Portugal could come to own “one of the most important wireless telegraphy networks in the

17. Law published in *Diário do Governo*, 180, August 2nd, 1912.

18. “O inventor Marconi chega hoje a Lisboa” (“Marconi, the inventor, arrives at Lisbon today”), *Diário de Notícias*, April 21st, 1920, 1.

19. *Arquivo Histórico Ultramarino – Conselho Colonial Consultas, 1921* – AHU_NO_191_SG_CC_LV_SALA_CF_EST_XXI_PRT_4. L.º 12.º N.º 103/1921, Report dated April 25th, 1921, on the *consulta* n.º 55/921 regarding the payment of stipends to Marconi's Wireless Tel. Co. engineers in charge of assembling Radio-Telegraphic stations at the Colonies.

world,” and it would also be the “[...] first nation in Europe to establish radiotelegraphy communications with Brazil.”²⁰ The first condition of the new deal was that Marconi’s Wireless would organize a Portuguese company to exploit this network. This company would own exclusive rights over the facilities and commerce of the wireless posts in the Mainland, Azores, Madeira, Cape Verde, Angola, Mozambique and S. Tomé and Príncipe, excepting the Portuguese State, which could at any time build other stations for sea and ports service. The concession contract was finally signed on November 8th, 1922, and it heralded the creation of the *Companhia Portuguesa Rádio Marconi* (CPRM).²¹

In the 1920’s, at the same time as the commercial net was being built, the Portuguese Navy developed its own radio communications system. In 1923 the Wireless Service Division was created. It answered to the Navy’s Majority General, meant to keep track of the system’s scientific and technological advances, to promote its study, experiences and development. The head of the service was trusted to Commandant Nunes Ribeiro, who had been in 1912 a member of the commission that had reported on the first contract signed with MWTC, and argued in favor of the technical superiority of the system. The Navy was always ahead of the game, especially as far as information was concerned. In 1924, while the opening of the Portuguese Marconi network was expected, the Navy made its post available for commercial service. From then on, Lisbon had a direct wireless link to England, Switzerland, Yugoslavia, Germany and Spain.

Communications seize the power: the rise of fascisms during the 1930’s

Although marked by a spirit of social and economic development, the post-war Portuguese Republic had to face a scenario of permanent political crisis, full of growing political party dissensions. On a daily basis, new controversies were launched against the government, and were always led, in 1926, by António Maria da Silva, a representative of the Democratic Party “right-wing faction” and chief manager of *Correios e Telégrafos*. The frail economy and the Nation’s growing foreign dependency, worsened by the after-effects of the Great War, reinforced the mistrust felt towards possible monopolies by foreign capitals. The CPRM faced this period with some difficulties, and its concession was even threatened, because of delays in building the network.

When the opening difficulties were overcome, the Portuguese company started its radiotelegraphy service in December 1926, with a political background far different than the one that had allowed its creation, four years earlier. Portugal had entered its first year under the Dictatorship.

On May 28th, 1926, the Republican regime was overthrown by a military coup that, at the beginning of the 1930’s, would give rise to the creation of the fascist-type New State. During the months following the coup, Portuguese Marconi

20. *Diário da Câmara dos Deputados*, 134, August 16th, 1922, 4.

21. Contract published in *Diário do Governo*, II Série, 264, November 16th, 1922.

lived unpredictable times, because of the political uncertainty spread throughout the country. The first radio circuits were opened on December 15th the same year, linking Lisbon to the Azores, Madeira, England and North America and, in 1927, to the colonial territories. And, finally, the mistrust towards wireless telegraphy was gradually converted into surprise, as the transmission speed was transforming an abstract science into a visible technological prodigy.²²

From 1927 on, the CPRM started a strong publicity campaign, trying to fight the traditional use of submarine cable telegraphy.

A net... made of obstacles...

In fact, during the last years of the 1920's, the company faced several barriers to its economic development. Not only a significant part of the sea traffic was blocked, having to make a detour by the Navy's coastal posts, but also the colossus of submarine cables, the Eastern Telegraph group, was unwilling to give up its traditional exclusive role.

CPRM was then left with the role of a second choice when compared to submarine telegraphy, though progressing slowly in the field of Portuguese colonial communications. Meanwhile, the cable companies had the tacit support of the Portuguese State, even beyond the creation of Imperial and International Communications, Ltd. in 1929, a company that grouped the British network businesses of submarine cables and radio communications. In Portugal, where both groups had their concessions, this fusion was not feasible, the choice then being to establish traffic agreements that would bring harmony in the rapports between the groups.²³ In 1932, the Portuguese government authorized the transfer of the rights conferred to British cable companies to the Imperial group,²⁴ and British Marconi's capital in Portugal, through CPRM, was also transferred to this new holding.

During the 1930's, the New State's principles of self-sufficiency and nationalism reinforced the option in favor of a greater support to consolidate the imperial network "by radio," although submitted to the rigid control of the authorities. On top of this institutional construct arose strategically a three-dimensional network, linking the Mainland and the islands, the Nation and the World, the Metropolis and its colonial domains.

The usual CPRM traffic growth was indeed affected at several levels. An agreement signed in 1927 between the company and the Navy Ministry transferred to the latter the concession rights over the Mainland's commercial sea traffic, giving the radiotelegraphy coastal traffic to the Navy's posts, in Lisbon, Porto and Algarve. However, the permanent traffic detour to Navy stations and the unfair competition regarding communications with the Azores and Madeira posts led

22. See as an example: "As comunicações radiotelegráficas", *O Século*, December 16th, 1926, 4.

23. Companhia Portuguesa Rádio Marconi – *Actas das Reuniões do Conselho de Administração*, Acta nº 74, July 29th, 1929.

24. Decree n. 22 021, published in *Diário do Governo*, I Série, nº 300, December 23rd, 1932.

Marconi to break the agreement in 1932. This conflict about circuits was definitely cleared up at the beginning of the 1940's, through a bill of law, but until then it subtracted an important part of the company's traffic resources.

In the establishment of direct circuits with other countries, one of the most significant examples of the difficulties faced by CPRM during its first years of activity was the connection with Italy. The Portuguese company presented a proposal to establish the first radiotelegraphy circuits on July 1927, at a time when the CPRM services with London, Paris, Berlin, the Azores, Madeira and Cape Verde archipelagos, Luanda, Lourenço Marques and Rio de Janeiro were already operational. The opening of negotiations to establish radiotelegraphy links between Portuguese and Italian circuits was all the more justified, as far as the Portuguese company was concerned, because of the existence of a large volume of traffic that was sent to Italy by Marconi central, but that until then had to go through Paris.²⁵ Besides, a direct radiotelegraphy service between Portugal and Italy would include, according to the Portuguese company's proposal, the European and extra-European traffic between Italy and Portuguese colonies in Africa, South African Union and Brazil, thus compensating for the absence of a direct Italian service with this last country.²⁶

As compensation, the Italian company suggested that the Italian circuit could be used for Portuguese communications with Hungary, Czechoslovakia and Greece.²⁷ On December 1927, the bases were set for the creation of the Lisbon-Milan circuit. Its opening deadline would eventually be extended by a few months, due to the negotiations over the traffic agreement, only concluded June of the following year,²⁸ the circuit having been started experimentally on the 19th of June. However, the arrival in the Azores, in 1929, of the first cable belonging to the Italcable company, to ensure communications with South America, quickly resulted in a strong diminishing of the traffic negotiated by CPRM for the Italian circuits.

During the 1930's, CPRM gradually imposed its own dynamics within both the national and international framework: surviving its first years' financial losses, it would eventually consolidate its growth from 1937 on, namely thanks to the introduction of radiotelephonic communications. It managed to maintain links with Europe in spite of the earth lines communications cut, during the Spanish Civil War, and accepted in its board of directors men that had the political trust of Oliveira Salazar, the head of Government. The process of articulation between the company and the State was then consolidated.

25. The archives of the Companhia Portuguesa Rádio Marconi. Circuito Italiano. November 1926 to June 1940. 003498. Copy of letter G-850, sent July 8th, 1927, by the manager of CPRM, Sidney John Slingo, to the board of directors of Compagnia Italo-Radio – Società Italiana per i Servizi Radioelectrici.

26. *Id.*

27. *Id.* Letter TII/IV, July 18th, 1927, from the Serviço de Tráfego da Compagnia Italo-Radio – Società Italiana per i Servizi Radioelectrici [undecipherable signature] to the CPRM board of directors.

28. *Id.* Letter G. 1667, June 12th, 1928, sent by CPRM to the General Management of Correios e Telégrafos.

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