

The Submarine Telegraph Cable System and Horta, Faial

In the late 19th and early 20th centuries Portugal played a strategic role in the international system of telegraph communications. British companies dominated the extensive global cable sector. The well-known submarine cable station at Carcavelos was inaugurated in 1870 and provided undersea cable connections linking Portugal to the global telegraph network. The British presence left a cultural imprint on Carcavelos that continues until today.¹ But there was another important cable station in Portugal, in Horta, Faial, the Azores. Indeed, Horta was, for a time, one of the principal centres for cable communications in the world. British companies played a major role in the establishment and in the operations of the Horta hub.

By Curtis Stewart

“Of all the marvelous achievements of modern science the electric telegraph is transcendently the greatest and most serviceable to mankind ... The whole earth will be belted with the electric current, palpitating with human thoughts and emotions ... How potent a power, then, is the telegraphic destined to become in the civilization of the world! It is impossible that old prejudices and hostilities should longer exist, while such an instrument has been created for an exchange of thought between all the nations of the earth.”²

Introduction

Horta, on the island of Faial in the Azores, is strategically located in the middle of the Atlantic. Because of the submarine cables, this small city became a world centre of reception and transmission of telegraphic communication between the European and the American continents. The first cable to Horta became operational in 1893, connecting Carcavelos to the Azores. Additional cables were laid and by 1928 there were fifteen submarine telegraph cables in Horta connected to England, the USA, Canada, Ireland, France, Cape Verde, Italy and Germany, with British, German and American telegraph companies being the principal operators.³ The last of the cable companies ceased operations in Horta in the 1960s.

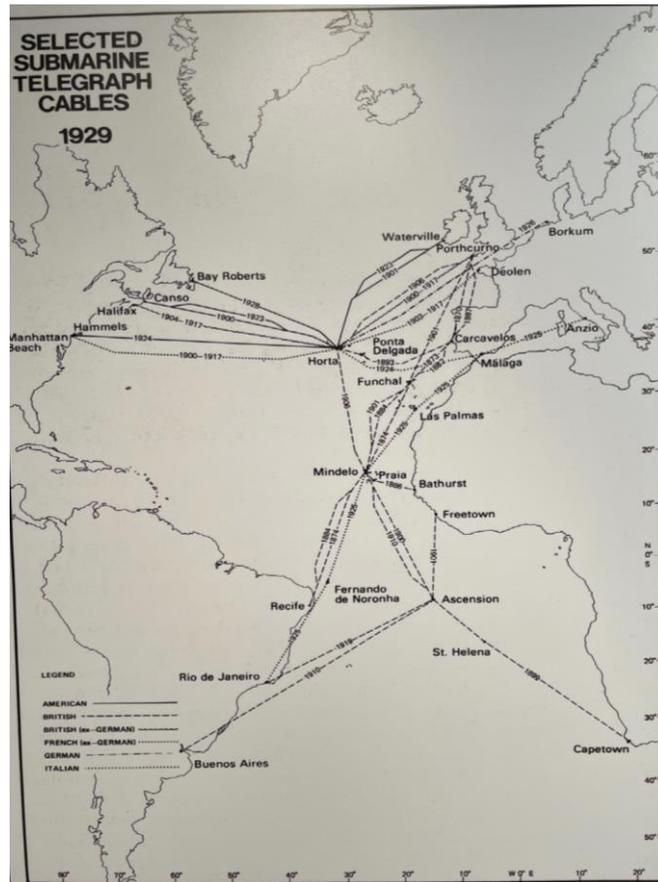
The first cable company in Horta was an English company, the Europe and Azores Telegraph Company. This became part of the Eastern Telegraph Company and, ultimately, part of Cable & Wireless. The Europe and Azores company held the concession to operate the telegraph facility from the Portuguese government; all other companies that later operated in Horta were considered sub-concessionaries of the Europe and Azores company. This effectively put the entire operation under the control of the English firm.

¹ Lisboa, Mário Eurico, *The Eastern Telegraph Station at Carcavelos*, BHSP Annual Report 42, 2015.

<https://www.bhsportugal.org/library/articles/the-eastern-telegraph-station-at-carcavelos>

² Briggs, Charles F. and Maverick Augustus, *The Story of the Telegraph*, Rudd & Carleton, New York, 1858, p. 13.

³ Horta Tourism, *Submarine Cables*. <http://turismo.cmhorta.pt/index.php/en/history/submarine-cables>



15 cables converged at Horta in the 1920s⁴

Early Telegraph Communications

The technology of communication by telegraph developed in the first half of the 19th century. In 1837, the British inventors, Sir William Fothergill Cooke and Sir Charles Wheatstone, obtained a patent on a telegraph system. Then, in 1843, Samuel Morse in the United States, built a demonstration telegraph system between Washington, D.C., and Baltimore, Maryland. Morse devised Morse code to facilitate the sending of messages. The first undersea telegraph cable was laid in 1851, under the English Channel from Dover to Calais. Transmitting electric signals over longer distances underwater presented many technical challenges, a transatlantic cable laid in 1857 failed within a few months, but in 1866 a successful transatlantic cable was completed. Initially, transmission capacity was limited, and signals became weak over long distances, requiring the use of relay stations to help overcome the problems of long-distance transmission. Over time, innovations were made and, by the 1920s, multiplex systems allowing the simultaneous transmission of five frequencies over a single line were in use.

Among the early technical challenges was finding a material to use as an insulator for underwater cables. In July 2022, the BBC released an interesting video about the identification of gutta percha,

⁴ The principal companies were CCC (Commerical Cable Company, later Cable and Wireless), WU (Western Union), and DAT (Deutsch-Atlantische Telegraphengesellschaft). <http://www.aalsh.pt/Projectos/Cabos%20Submarinos/17.pdf> p. 54

which proved to be an ideal substance to insulate underwater cables.⁵ The use of gutta percha allowed for the expansion of undersea cables around the world, but it had serious environmental consequences.

British Dominance of the International Cable Network

The expansion of the system of international telegraphic cables was of great national interest to Britain and strongly supported by the government, although most of the investment was made by private companies.⁶ British companies dominated the most important markets. In 1896, there were 30 cable-laying ships in the world, 24 of which were British owned. In 1892, British companies owned and operated two-thirds of the world's cables and, by 1923, their share was still 42.7 percent.⁷ Britain had an effective monopoly on gutta percha insulation. British investors were willing to invest enormous amounts of capital necessary to build, lay and maintain these cables. The network, once established, served the far-flung Empire, as the cable companies served news agencies, trading and shipping companies, and the British government.

British policy was to keep control of the cable system in British hands. To this end, the creation of a worldwide network within the empire was encouraged, which became known informally as the All-Red Line, (from the common practice of colouring the territory of the British Empire red or pink on political maps).⁸ The policy was summed up by the British historian of science, Ken Beauchamp, "...a route was needed which would pass mainly under the sea, be controlled from Britain, incidentally be operated without the payment of way-leaves to foreign states."⁹ In practice, the All-Red Line encircled the world, coming ashore only on British territories, with the one exception of Portugal.¹⁰ The geographic location of British territory was also an advantage as it included both Ireland on the east side of the Atlantic Ocean and Newfoundland in North America on the west side, making for the shortest route across the ocean. As part of their plan of control, the British prepared strategies to quickly interrupt enemy communications. Within minutes of declaring war on Germany in World War I, Britain cut the five cables linking Germany with France, Spain and the Azores, and through them, North America.¹¹ This left Germany reliant on communicating by wireless messages, which the British could intercept.

The map below, showing the All-Red Line in 1902, is a wonderful example of Imperial promotion, but conveniently does not show Portugal as part of the system; for example, the cable from England via Carcavelos to Gibraltar is missing. By the 1920s Horta was effectively integrated into a global network under British control. Cable communications passing through the territory of England's oldest ally were effectively controlled by British companies with, as previously noted, all other companies present in Horta being sub-concessionaries. Whether by denying access, pre-empting competitors, or obtaining exclusive concessions, the British policy worked to keep control of the undersea cable network and the global telegraph system. The British government needed cables to maintain administrative

⁵ *Gutta Percha: the tree that shrunk the world*. Video BBC Reel, July 2022. Available on BBC Reel.

<https://www.bbc.com/reel/video/gutta-percha-the-tree-that-shrunk-the-world>, and YouTube.

⁶ Neves, Kataja. *A Dual Coiled Phenomenon: Atlantic Telegraph Companies and the Dynamics of Cosmopolitanism in Horta – Azores*, p. 85.

⁷ Headrick, D.R., & Griset, P. (2001). *Submarine Telegraph Cables: Business and Politics, 1838–1939*. *The Business History Review*, 75(3), 543–578.

⁸ https://en.wikipedia.org/wiki/All_Red_Line

⁹ Silva, Ana Paula. *A Horta no Triangulo Estratégico no Atlântico -1955-1939*. P. 76. Quoting Beauchamp, Ken. "History of Telegraphy" London: Institute of Electrical Engineers. 2001, p. 167.

¹⁰ Tello, António José. *A Importância Estratégica do Porto da Horta do Seculo XIX ao XXI*, p. 18

¹¹ Winkler, Jonathan Reed, *Nexus: Strategic Communications and American Security in World War I*, pages 5–6, 289, Harvard University Press, 2008 [ISBN 0674033906](https://doi.org/10.2307/4033906).

Finally, in 1893, the first undersea cable from Carcavelos to Horta was inaugurated. The opening of the new cable was a major event and received the attention of the highest figures in government. The royal family participated in ceremonies on August 27, 1893, going to Carcavelos to inaugurate the cable. It was observed that from that date on "the mother country is linked by a bond almost as close as thought", with the Azores now bound more closely to the continent. Among other benefits, the new link provided better meteorological information from the Azores and helped to improve weather forecasting.



The royal family arriving at Carcavelos on 27 August 1893¹⁸

Operations in Horta

With the installation of the first cable link from Carcavelos in 1893, Horta was set to grow into an important centre. Its strategic mid-Atlantic location was evident, and cables were soon connected to England, the USA, Canada, Ireland, France Cape Verde, Italy and Germany. The three main companies in Horta were the British Eastern Telegraph Company (ETC), which, as mentioned earlier, held the concession from the Portuguese government, the American Commercial Cable Company (CCC), and the German *Deutsch-Atlantische Telegraphengesellschaft* (DAT). Various mergers and reorganizations occurred over time. The Eastern Telegraph Company became part of Cable and Wireless in 1933. The American CCC became part of Western Union. By 1928 there were fifteen submarine telegraph cables connected at Horta, turning it into one of the largest communication centres on the planet.

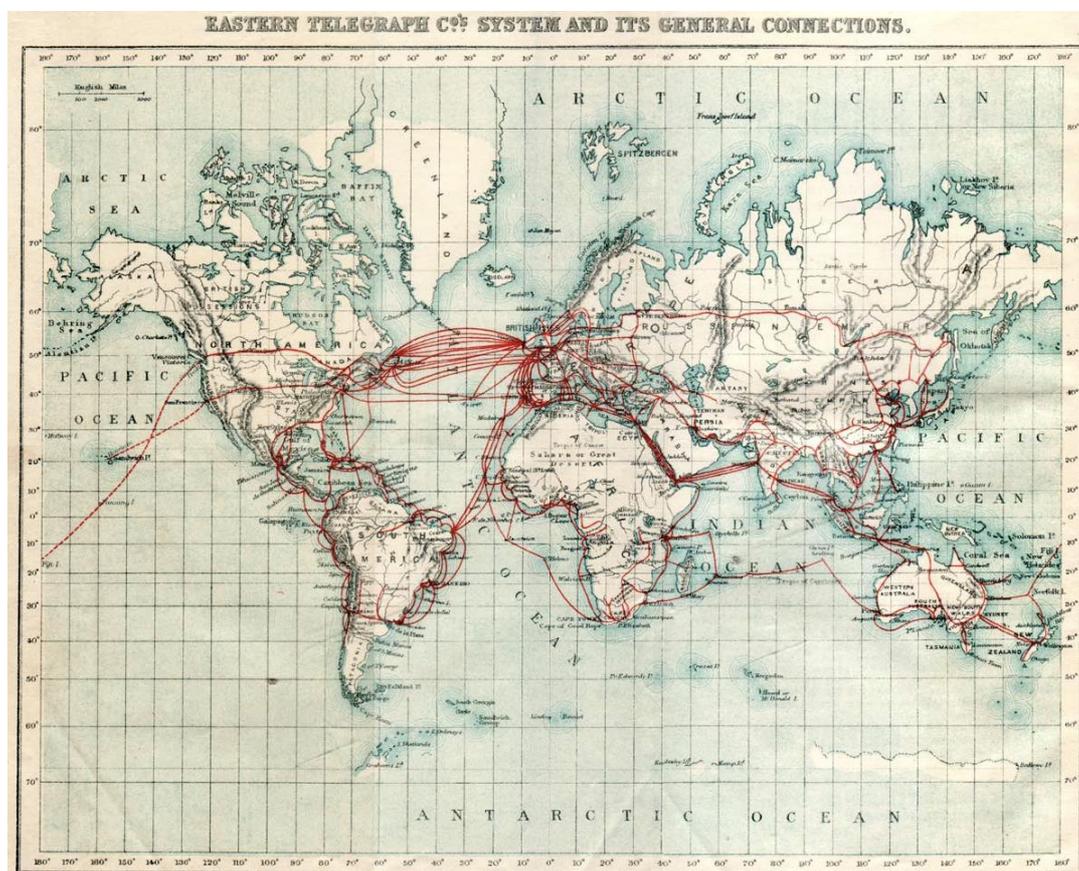
The initial undersea cables in the 19th century only allowed for slow transmission of a single signal in one direction. But, by the 1920s, technology had advanced and the communication hub in Horta was using multiplex equipment, which permitted the simultaneous transmissions of five signals on different frequencies and in both directions. Horta was ideally located to switch messages among the 15 cables and to direct cable traffic to and from any part of the world.

¹⁸ <http://www.aaalh.pt/Projectos/Cabos%20Submarinos/17.pdf>. p. 34. The former Carcavelos cable station is now St. Julian's School

The operations of the German company, DAT, were shut down at the outbreak of World War I and the cables taken over by British and French companies. In 1923 the German company returned to Horta. In the Second World War Portugal was neutral. However, the German operations were again taken over with the British arrival in the islands to build an airfield in 1944.

As the systems became more automated, fewer personnel were needed. Many of the local people who worked for cable companies during the 20th Century eventually emigrated in the service of these companies.¹⁹

Over time, alternative means of communications developed. Wireless telegraphy and airmail became much more available to the public from the 1920s. Undersea telephone cables reduced demand for telegrams. Telegram traffic declined and by the 1960s the undersea telegram cable system had come to an end. The last telegraph cable company in Horta closed in 1969.



The global cable network of the Eastern Telegraph Company in its heyday²⁰

A Proud Cosmopolitan City²¹

While nationalism, commercial competition, international negotiations, and political manoeuvring between empires characterized the construction of the cable system in the early 20th century, the

¹⁹ Lisboa, *op cit.* p. 89.

²⁰ https://en.wikipedia.org/wiki/Submarine_communications_cable#/media/File:1901_Eastern_Telegraph_cables.png

²¹ Horta was elevated to the status of a city on 4 July 1833 as a reward for its support of the Liberal side forces during the Portuguese Liberal Revolution.

relations between the various nationalities on the ground who were operating the system in Horta were characterized by a sense of international cooperation and friendship. In terms of population, the city of Horta is quite small²² and the arrival of dozens of foreigners working for the cable companies must have been something of a novelty to an island principally concerned with farming and fishing. However, a social atmosphere described as “cosmopolitical” soon emerged. “Cosmopolitan” has been described as a condition in which individuals “focus on the realization of shared political, moral, economic and cultural projects rather than on differences that would keep them apart.”²³ The individuals from various countries involved in the cable business shared a common purpose that transcended nationality. One Portuguese who worked for the cable companies noted that “we were citizens of the world”.²⁴ Especially in the interwar period, the international community in Faial established a lifestyle full of opportunities for shared cultural and social activities. The author, Yolanda Corsépius, wrote an interesting and rather nostalgic booklet highlighting the socio-cultural aspects of Faial. With photos of young men and women enjoying sports, such as tennis and croquet, a picture is painted of a carefree, peaceful, optimistic and modern society.²⁵ The overall impression is of group of mostly young men, from countries around the world, working together in a high-tech industry, but enjoying a lifestyle characterised by sports and leisure and, despite the language barrier, enjoying a good social relationship with the resident Portuguese. Within the expatriate community different languages were taught and spoken. Orchestras were created and performed regularly. Jazz became a favourite. Films were shown, games of bridge were arranged and excursions to visit the sights of the Azores islands were organized.



Booklet by Yolanda Corsépius

²² The population of Horta today is about 8,800 and the entire island of Faial is about 15,000. In the 1940s the population of the island was about 23,000.

²³ Neves, Katja Grotzner. “A Dual Coiled Phenomenon: Telegraphic Cable Companies and the Dynamics of Cosmopolitanism in Horta-Azores”, In *Porto da Horta na História do Atlântico: O tempo dos cabos submarinos*, 81-93. Journal of the University of the Azores, 2011, p. 88.

²⁴ *ibid*

²⁵ Corsépius, Yolanda. *Algumas Notas Sobre Aspectos Sócio-culturais na Horta no Tempo dos Cabos Submarinos*, 1999, Self published.

Sports played a prominent role in the cable company society and sports clubs were founded. Sports new to the island appeared, such as football, rowing, sailing, water polo, and tennis. The Fayal Sport Club was founded in 1909 and is still operating; its website notes its English origins. Nearly all the foreigners at the cable companies were male, the majority of them single. The level of social interaction between the residents and the cable company employees can be judged by the number of marriages that took place between foreigners and residents. In her book, Corsépius provides a list of the marriages between foreign men associated with the cable companies and Portuguese women. Between 1894 and 1967 she found there were a total of 44 marriages, 23 with Englishmen, 11 with Germans, four Americans, three Irish, two Scots and one Canadian.

The employees of the cable companies were relatively well educated and well paid. Completion of secondary school was required, along with a good recommendation from one's school. Candidates had to complete, at company expense, a one-year course in radiotelegraphy, which could be done in Liverpool, Penzance, London or Waterville, Ireland. Enthusiasm for sports was also expected, as was the ability to swim. A written exam was given to confirm the candidate's knowledge and suitability. A medical examination was also required. This was followed by an interview with the director to evaluate not only the sporting ability of the candidate but also to assess their sociability.²⁶ The employees were entitled to 30 days of holiday per year and the normal shift was 8 hours. The nature of the work required that they work at all hours and on Sundays and holidays, but overtime hours were compensated with free time off. Most of the staff were British. The historian Francis Rogers noted that, "...in the Azores, the American companies employed, not Americans, who demanded high wages out of line with the going scale, but Canadians, Newfoundlanders, Irishmen and Scots".²⁷

The presence of the international community and the operations of the cable companies seems to have changed the self-perception of the residents of Faial. Portuguese often see themselves as on the periphery of Europe and out the mainstream of world affairs. But the residents of Faial viewed themselves as being at the centre of the world. A postcard from the 1920 proudly proclaims the city to be the "Telegraph Cable Center of the World".



Horta was proud of its central role in cable communications, as this postcard shows²⁸

²⁶ *ibid.* p.5

²⁷ Rogers, Francis M., *Welcome to the Cable Trail – and the Contributions to Trans-Atlantic Communications made by Horta*, pamphlet published by Delegação de Turismo de Horta, undated. Regional Archives Horta, p. 10.

²⁸ <http://www.aalh.pt/Projectos/Cabos%20Submarinos/17.pdf>

Although the cable companies ceased operations in the 1960s, there are still reminders of their historical presence and memories in the urban, architectural, social and cultural fabric of Faial.²⁹ Some imposing buildings still remain, such as the Trinity House, so-called because it used to house all three companies, as well as administrative and residential neighbourhoods, such as the German Colony (still called “Colónia Alemã”), which today is owned by the Regional Government and formerly was home to the Conservatory of Music of Faial. The facilities of the American company, Western Union, have been repurposed and are now the Faial Resort Hotel. The Fayal Sport Club is still fielding football teams, and the International Café, and Peter’s Café Sport, which once served the staff of the cable companies, are now frequented by tourists from around the world. The local newspaper in Horta is *O Telegrafo*. There is even the curious cultural influence that wedding cakes in Faial are often made using a recipe for English fruitcakes. The local tourism office provides information on the old buildings that may be visited, including the buildings on the beach near Porto Pim, where the cables came ashore.



The author at the point where the undersea cables came ashore at Porto Pim, near Horta.

— ooOOoo —

Curtis Stewart is a retired American diplomat living in Portugal. He enjoyed overseas assignments with the Department of State in more than a dozen countries, primarily in Africa. His posting in the Azores helped in research for this article. In the course of his career, he worked in the areas of economics, energy, mineral resources and science. He met his wife while serving in the Azores and has lived in Portugal since 2002. He is the Secretary of the BHSP.

²⁹ *Os Açores na Encruzilhada dos Comunicações*, 2012. Conference in Horta.