

A Journey to the Birthplace of Trans Atlantic Communications

by Ivor Hughes

212 Rotax Rd.

N. Ferrisburg, VT 05473

Recently I took a trip that I have wanted to make for many years and visited the Atlantic Maritimes, an area rich in the history of communications. Being the closest landfall to Europe, it became the Trans Atlantic gateway for the first telegraph cable and wireless communications.

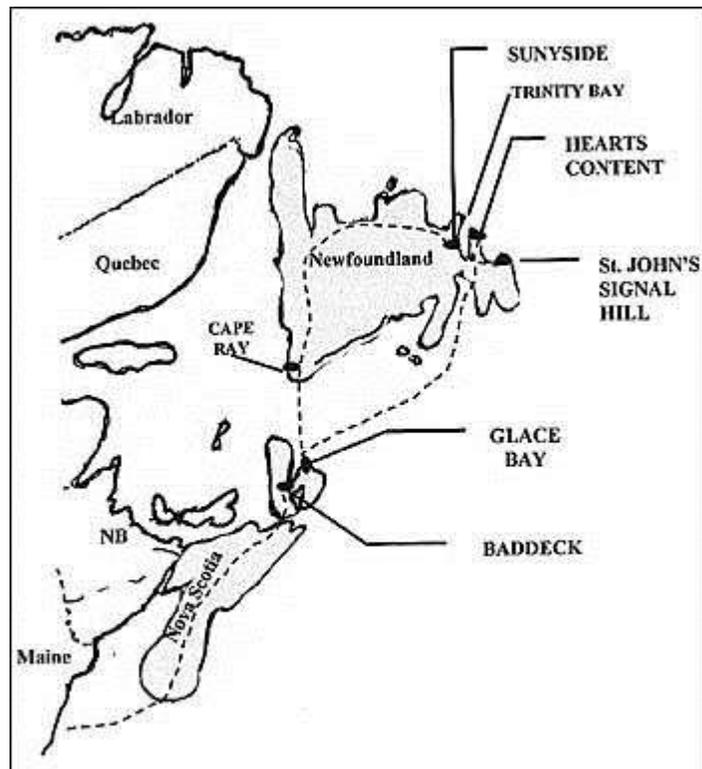
With map in hand I set off by car from Vermont and headed for Nova Scotia. This is a memorable drive that culminates in a bracing ferry ride across the 90-mile Cabot Strait to Newfoundland. Even though it was mid June, it was noticeable cooler stepping off the ferry at Port-aux Basques and snow still lingered on the nearby mountains.

My first destination was to be Trinity Bay, where the first Trans Atlantic telegraph cables came ashore. It is located west of Saint John's, the capitol, and about 500 miles across the island from where the ferry docked.

The Trans Canadian highway cuts a swath through the black spruce forests that seem to stretch from horizon to horizon.

I was starting to get an appreciation for the vastness of the interior wilderness that I had read about. This is a land where the population still lives predominantly around, or close to, the rugged coast.

Arriving at Trinity Bay after spotting large icebergs off the northern coast and setting my watch forward by one and a half-hours made me realize how far north and east I had now traveled. I made a stop at the small village of Sunnyside, which is situated at Bull Arm, one of the Bay's deep-water inlets. It was here in 1858 that a telegraph cable from Valencia, Ireland, was brought ashore--connecting Europe and America for a few tumultuous months. An informational sign provides visitors with a brief history of the event, but the telegraph building depicted in many books has long since disappeared.



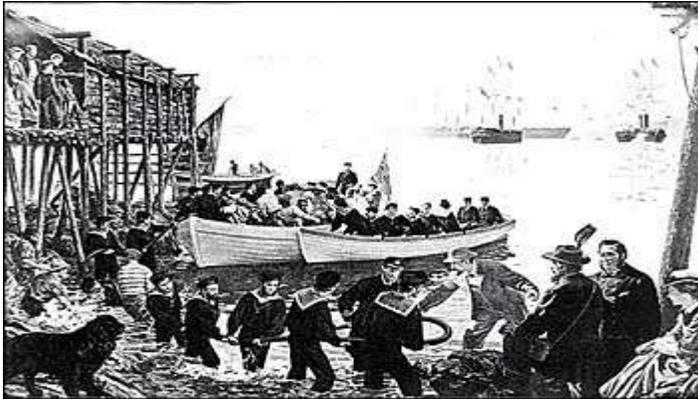
Map tracing the author's journey to Newfoundland and back.

While Cyrus Field's name is synonymous with the Trans Atlantic cable, his involvement had its roots in a project started by Fredrick Gisborne. In 1854-5 Gisborne was struggling with an ambitious project to run a telegraph line across Newfoundland and the Cabot Strait. It was to connect up with a line down through New Brunswick and Maine and hence to Boston and New York.

His incentive to take on this ambitious project was based on the premium paid by the newspapers to be first with the European news. By intercepting Trans Atlantic ships at, or off, Saint John's days before they reached their destination, he would

have the latest news to the cities in a couple of hours.

But the rugged Newfoundland terrain defeated Gisborne. He ran out of money after only completing only 40 miles (approx. 10 percent of the distance from St. Johns to Cape Ray). I could understand this when I saw the rugged coastline and realized that there were no roads on the cable route. All supplies had to be brought in by sea. Even today the south coast has few



Landing the Trans Atlantic cable at Heart's Content in 1866.
Artist: Rex Woods.

roads and many of the communities can only be accessed from the sea.

Gisborne's plight came to the attention of Cyrus Field, a self-made millionaire by the time he was 36. Already involved in the telegraph business, he became intrigued with Gisborne's plan. Field is reported to have gone over to his world globe, traced a path from New York to Saint John's, and, to his amazement, saw that he was already a third of the way to England.

He decided go the rest of the way and the rest is history. Laying the Atlantic telegraph cable became Fields' great legacy and is, of course, a story that spans several years and numerous unsuccessful attempts.

Laying a 2000-mile cable at a depth of 2 miles below the ocean seemed impossible to many. While an 1857 attempt failed, a renewed attempt in 1858 was successful, but only briefly. The world had to wait until 1866 for the next success. This cable was landed on the other side of Trinity Bay at Heart's Content.

Messages were transmitted in Morse code, using positive and negative polarity signals to represent the dots and dashes. These were detected by a very sensitive "Thompson mirror galvanometer." The cable exhibited long propagation delays, resulting in a fairly low message speed of about eight words per minute.



The cable station at Heart's Content is now a museum.

The whole operation of

deciphering the incoming signals was far from easy. Charges were \$5 per word.

I next headed over to the cable station at Heart's Content, which had been in operation for nearly 100 years. It finally closed in 1965, when it became the cable museum, and a Provincial Historic Site. On display there is a wide range of equipment dating back to the earliest days. Some of the old cables can still be seen down on the shoreline and near by stands a memorial commemorating the event.

By the late 1800s a new technology was starting to make an appearance. Marconi had been experimenting with wireless communications and by 1899 he was transmitting across the English Channel. In 1900, at the age of 26, he boldly proposed making an attempt to communicate across the Atlantic with a spark transmitter of unprecedented power. One site was to be at Poldhu in Cornwall, England and the other in America on Cape Cod, Massachusetts.

Unfortunately the massive 200-ft high aerial array at Poldhu blew down in a heavy gale. Undeterred, Marconi hurriedly replaced the Poldhu aerial with a simpler fan configuration. He also decided to be slightly less ambitious and concentrate on a one-way transmission over the shorter distance of 2000 miles to Saint John's Newfoundland (at the time a British Colony). His change of plan was fortuitous for, as he departed for Newfoundland, he learnt that the Cape Cod aerial array had suffered the same demise as that at Poldhu.

My next stop was to be where Marconi received his first Trans Atlantic wireless signals at Signal Hill, Saint John's. This is an impressive but exposed bastion on top of which sits Cabot Tower, overlooking Saint John's harbor.

In December, 1901 Marconi and his assistants Kemp and Paget set up the portable receiving equipment in an unused building close by the tower. The experiment was shrouded in secrecy so as not to alert any competition.

Marconi first tried to raise the aerial using a 14-ft. diameter hydrogen balloon. But the strong wind blew it away, nearly taking Kemp with it. The following day, December 12th, they switched to a large (9x7ft.) kite. After losing the first one, they launched a second to support the 500-foot aerial wire.



Marconi's group struggling to get an antenna kite into the air. Signal Hill, St. John's Newfoundland, December, 1901.

The wind was described as "vicious," sending the kite on a wild roller coaster ride that must have resulted in constantly changing aerial characteristics. Marconi tried a number of his receiving devices and, at 12.30. p.m., he heard the first Trans Atlantic wireless signal, the test letter "S"(three

dots).

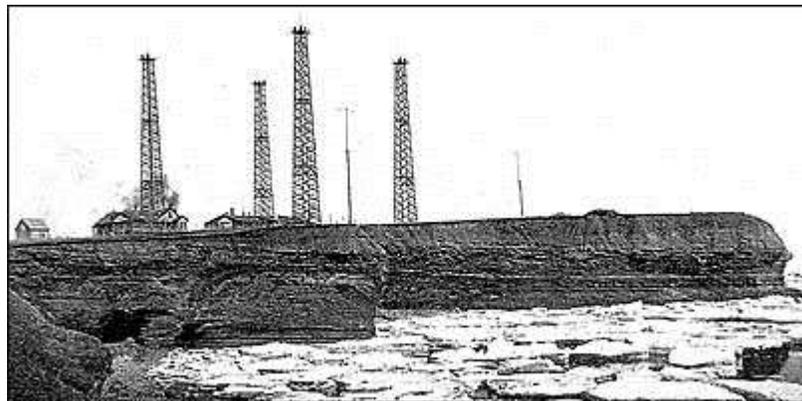
The exact detecting equipment used and the operating frequency, as well as whether Marconi had really heard those fateful three dots are still being debated today. At the time, the skepticism about Marconi's claim was related to the belief that a wireless signal could not possibly follow the contour of the earth and climb over the 100 mile high sea mountain.

Marconi dispelled those skeptics a couple of months later with a test made aboard the ship "SS Philadelphia." He received the test signal at a distance of 2099 miles from Poldhu, this time verified with independent witnesses.

Marconi telegraphed London with the good news from Newfoundland, the cat was out of the bag. Fearing competition from this new technology, the Anglo-American Telegraph Company told Marconi they had a monopoly on communications in Newfoundland and he was to cease and desist. Upon hearing the news, the Canadian Government and Nova Scotia welcomed Marconi to their shores. Alexander Graham Bell, who had an estate on Cape Breton, also offered his land. Marconi chose Table Head at Glace Bay, located on the northeastern side of Cape Breton.

Leaving Newfoundland, this time from Argentia, and returning across the Cabot Straits to North Sydney, Nova Scotia, I traveled the short distance to Glace Bay. Here there is a small museum with a model of the wireless station depicting the four huge wooden 200 ft. towers that supported the inverted cone aerial array.

Marconi obviously chose this site for its elevated flat expanse and unobstructed view out over the ocean. Some of the concrete footings for the massive towers can still be seen on the grounds.



Marconi antenna array, Glace Bay, 1902.

Glance Bay operated with Poldhu in 1902 and with the rebuilt station on Cape Cod in 1903. By 1907 a new station, known as Marconi Towers, had been built close to Glance Bay. There were also new stations on the west coast of Ireland at Clifden. Later, to facilitate duplex operation, two more stations were built: one further south of Glance Bay at Louisburg, which communicated with its counterpart in Ireland at Letterfrack.

My next stop was Alexander Graham Bell's Cape Breton estate, located at Baddeck not far from Glance Bay. There is an excellent museum, commemorating Bell's life's work, in an idyllic location overlooking the Bras d'Or Lakes. Though mostly known for his telephone invention, Bell also carried out research and experimentation in aeronautics and hydrofoils. His 60-foot-long, 70-mph, hydrofoil is the subject of a spectacular display.

As I headed home, I reflected on the significant accomplishments made by these pioneers. It was good to walk and kick the dirt where they had once been and to think about their struggles and hopes in these fairly remote places.

Gisborn's determination to string a telegraph cable across Newfoundland and the Cabot Strait is mind boggling when you actually see the terrain, travel the distance and contemplate the logistics that must have been involved in the mid 1800's.

Field was a true entrepreneur with big-picture vision. He wanted not only to span the continents but also, once the transatlantic cable was in place, to amalgamate the American telegraph companies to improve the message flow. He never gave up and had an infectious enthusiasm that kept investors on board throughout his five attempts.

Marconi had a vision that wireless technology was the next great leap forward. He pushed the state of the art, transmitting and receiving over greater and greater distances. His projects were high risk ones. But he succeeded, seeing the realization of his dreams and receiving big payoffs.