

BY MICHAEL W. MARINARO, WN1M

THE SHADOW OF MARCONI

Part 1: Early Marconi Company Operations

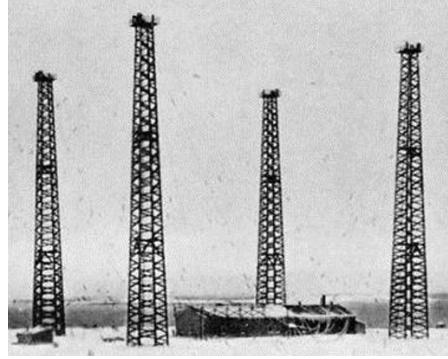
Contained within the boundaries of the town of South Wellfleet, Massachusetts is a beach that is of historic importance to British and American radio enthusiasts and amateur radio operators. The bluffs above this beach were chosen by the Anglo-Italian inventor Guglielmo Marconi and the Marconi Wireless Telegraph Company of America as the site for Marconi's first American radio station. This station was built in 1901 and was followed later by another in Canada at Glace Bay, Nova Scotia.

The two sites were similar in terrain characteristics and the facilities and antennas were of similar design. The intent was to construct a system to provide reliable transatlantic wireless radio communications with the principal Marconi Wireless Telegraph Station at Poldhu Cove on the Lizard Peninsula in Cornwall, England.

But it was at another site that Marconi had earlier received the first transatlantic wireless signal. The code letter "S" (. .) was keyed in by the operator at the Poldhu Cove station on December 12, 1901 and was copied on a coherer with a kite borne antenna at Signal Hill, overlooking the port of St. John's, Newfoundland.

Sent by spark gap transmission the signal traversed approximately 1,800 miles during a period of intense atmospheric noise to the temporary receiving location. The canvas kite stretched the receiving antenna wire up to approximately 600 feet. This event initiated progressively better transmissions, in both directions, between the newly constructed Glace Bay station VAS and Poldhu Cove ZZ.

Marconi chose the Cape Cod site not only because of the barrenness of this elevated tableland overlooking the ocean — he envisioned its radio horizons. To the east,



The Glace Bay Wireless Station, Nova Scotia.

north and the south the vista was clear across the Atlantic all the way to Europe, Africa and South America and the heavily traveled sea lanes in between.

This seemed to be the ideal location to pursue what the Company anticipated would be its principal endeavor — ship to shore wireless communications. At the time, land to land cable connections, principally between North America and Europe, accomplished adequate communications services.¹ Although the Marconi interests intended to provide similar competitive services, their vision went far beyond the scope of wired telegraph service.

The land parcel comprised eight acres, sizable enough to accommodate the antenna system planned. The terrain was sandy and sparsely sprinkled with salt grass. The elaborate antenna system first erected consisted of twenty 200-foot-tall ship's masts set in a 200-foot diameter circle. These constructions, as well as the identical installation at Poldhu were blown down in storms during the months of November and September, 1901 respectively.

This destruction just preceded Marconi's reception of the first weak transatlantic

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message at Signal Hill on December 12, 1901 ironically on a kite antenna. The chronology of these occurrences reveals the great confidence that Marconi and his associates had in the practicality of long distance wireless.

Though Marconi visited the Cape Cod site on several occasions, the construction of the station and its introduction to service were managed by English Marconi Company engineers R.N. Vyvyan, Chief, Percy Wright Paget, and Charles Henry Taylor.²

Upon completion in February, 1902, the station began transmitting on 1500 meters using the call letters CC. A spark of 20,000 volts was created — a spark so powerful that it could be heard in the neighboring village. From the beginning of operations, station CC maintained a set schedule. Later, the station was linked directly by telegraph line to the local land line telegraph station in the town of South Wellfleet and beyond that to the *New York Times* newspaper in New York City.³

Messages to be sent by radio transmission were received in this manner and likewise messages received by radio were so dispatched for delivery. The message traffic and relay activities were conducted on 600 meters. Daily news stories, primarily from Boston and New York, were accumulated and condensed into a newspaper format, punched into a paper tape, and transmitted to ships at sea three times each night on 1500 meters.

Ocean liners such as the Cunard Lines RMS *Lusitania* and RMS *Mauretania*, subscribing to the service, presented their passengers with a ship-published newspaper the following morning. This news service was the main activity of the station throughout its existence.

Shortly after the station was in full operation a momentous exchange of messages took place. On January 18, 1903 a message was successfully sent by CC from President Theodore Roosevelt addressed to King Edward VII. The message was received by ZZ at Poldhu and a response from the King, then residing at Sandrinham House,



Principal Marconi Station at Poldhu Cove, Cornwall, England.

was received in turn at the Cape Cod station.

It is purported that Marconi, who was in attendance at the station, actually keyed in the message. This was the first instance of a two way transatlantic communication and the first wireless telegram exchange between America and Europe.

Advances in technology and the forces of nature were threatening to doom the long-term existence of the station. However it continued routine operations, transmitting and receiving passenger “Marconigrams” despite early reports of the rapid erosion of the bluffs.

In 1908 the call letters were changed to MCC “Marconi Cape Cod” and in late 1912 or early 1913 the call letters were changed to the final WCC. It is claimed by some that WCC directed the RMS *Carpathia* to the rescue of survivors of the RMS *Titanic* iceberg collision in April of 1912.

Actually, the *Carpathia* operator contacted *Titanic* to inform the operator that a batch of messages was being transmitted to them from MCC. *Titanic* responded that they had struck a berg and to come at once.

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Marconi at Signal Hill Receiving Station.

in 2011. He trained at the Royal Academy of Dramatic Art. Rickman later gained fame in the BBC-TV production of *The Barchester Chronicles* (1982).

LARRY ROSEN, 75, (10-9-16) music producer. Rosen will best be remembered as the founder of the record label GRP. (The initials stood for Grusin-Rosen Productions.) It was founded in 1978 under the auspices of Arista Records. In 1987 GRP signed a distribution agreement with MCA and three years later it was sold to them. GRP's roster included flutist Dave Valentin, Patti Austin, Diane Schuur, Diana Krall, the Yellow Jackets, the Brecker Brothers and others. GRP was an early proponent of digital recording and released its entire catalog on CDs. One of its commercial successes was *In a Digital Mood*, a 1983 album of selections from Glenn Miller's repertoire. Rosen began his career as a drummer. He attended the Manhattan School of Music and played with the Newport Youth Band. In 1960 Rosen joined singer Andy William's touring ensemble and remained with him until 1966.

GARRY SHANDLING, 66, (3-24-16) comedian, actor and writer. Shandling starred on *It's Garry Shandling's Show*, a situation comedy seen on FOX from 1988 to 1990 and also on Showtime Cable Network from 1986 to 1990. Other television credits include: *The Larry Sanders Show* (HBO 1992 to 1998) and guest appearances on *The Ben Stiller Show* (FOX 1992-1993). Shandling and Peter Tolan received an Emmy Award for Outstanding Writing for "Flip," *The Larry Sanders Show* (HBO) in 1998. Shandling hosted the Grammy Awards in 1990, 1993 and 1994 and the Emmy Awards in 2000 and 2004. He also appeared in and did voices for films, including *Iron Man 2*, *Captain America*, *The Winter Soldier*, *Dr. Doolittle* and *Zoolander*. Shandling guest-hosted on *The*

Tonight Show Starring Johnny Carson and was in consideration to become Carson's replacement.

FRANK SINATRA, JR., 72, (3-16-16) vocalist. Sinatra was the senior Sinatra's musical director and conductor until his death in 1998. After Sinatra senior died he provided a link to his father by singing his music and arrangements on tours and in Las Vegas. Sinatra appeared as a regular on *Dean Martin Presents* on NBC Television in 1968 and guest starred on *The Love Boat* (ABC) and *Marcus Welby, M.D.* (ABC). He also provided his own voice for two episodes of *Family Guy* (FOX). In 2015 Sinatra performed the national anthem at Los Angeles Dodgers and New York Yankees games in celebration of his father's birth. His real name was Francis Wayne Sinatra but professionally he was known as Frank Sinatra Jr.

Information for this column was obtained from *The Boston Globe*, *Clarion Ledger*, *The Complete Directory of Prime Time Network and Cable TV Shows 1946-Present* (9th edition), *The Encyclopedia of Jazz*, *The Hartford Courant*, *On the Air: The Encyclopedia of Old-Time Radio*, *The Philadelphia Tribune*, *The Washington Post*,

www.imdb.com,
www.insidetucsonbusiness.com,
www.jacksonfreepress.com,
www.latimes.com,
www.legacy.com,
www.marjorielord.com,
www.nascar.com,
www.wapt.com,
www.scpr.org,
www.variety.com, and
www.wikipedia.com.

The writer wishes to express his appreciation to Ted Hannah, K3CL and Dr. A. David Wunsch for additional source material.

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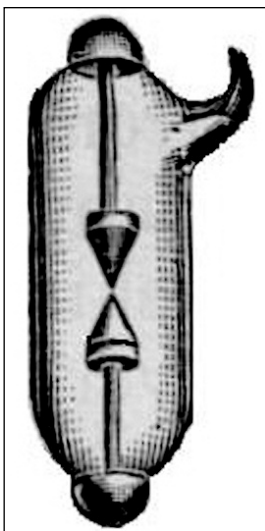
The principal station involved in the incident was VCE the Canadian Marconi Company station at Cape Race, Newfoundland. Doubtless, MCC was involved in receiving and relaying traffic to and from the rescue

vessels and stations

The sea cliffs were eroding at a rate of three feet each year. Heeding the cautions of the firm's engineers Marconi determined to move
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electrode cartridge-type protector, available with either "vacuum" or neon fill. The 1926-27 Graybar Electric Co. catalog offers vacuum protectors of unspecified make, with (apparently) metal bodies, in two-and three-electrode versions, for use on railroad signal lines.

The ads and catalog listings unhelpfully omit a discussion of the firing voltages of these units. These protectors must have been an impressive sight when doing their job. Imagine a 20-conductor open-wire telephone line equipped with, say, 10 three-electrode VAC-Ms. As a lightning storm rolled in from the west, every direct strike or near miss would flash all the protectors in unison — in either small glows or bright flashes — with the intensity grow-



Vacuum protector used by British post office on telegraph circuits.

ing as the storm center approached.

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2. T. E. Herbert, *Telegraphy* (London: Whittaker & Co., 1907), p. 570.
3. D. McNicol, *American Telegraph Practice* (New York and London: McGraw-Hill, 1913), p. 122.
4. Advertisement, *Telephony*, Sept. 2, 1916.

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the station operations inland. By then, operations had begun from two new locations. A receiving site was situated at sheltered Chatham, Massachusetts at the "elbow" of Cape Cod, 34 miles south of Wellfleet. To reduce the overloading of the then poorly selective receivers and permit simultaneous receiving and transmitting, the transmitters were located separately at a location forty miles west in Marion, Massachusetts.

The two sites were linked by telephone and telegraph. As this transition was underway, war was raging in Europe — which was soon to have a profound influence on the global radio operations originally set in motion by Guglielmo Marconi.

REFERENCES

- 1 The nearby Nauset Light Beach at Eastham was the entry point of "Le Direct," the 3,200 mile transatlantic cable set by the French Cable Company (Compagnie Francaise du Telegraphe de Paris a New York) in 1898. The cable terminated at a station in the central Cape Cod town of

Orleans. This was only one of many intercontinental cables operating at the time.

The first Atlantic cable was laid in 1858. By the end of the 19th century, British, French, German, and American owned cables linked Europe and North America in a sophisticated web of telegraphic communications. These entities dominated the intercontinental communications market reducing the potential for wireless entry.

- 2 The station included three buildings and four 210-foot wooden towers. The towers were set on square concrete slabs, the two most easterly of which were placed about 165 feet from the edge of the bluff.
- 3 This activity required the presence of operators competent in both the Morse Telegraphic code and the International or Continental code. The latter format was standardized for wireless communication in 1912 by international agreement. Operators in these early days tended, as a matter of pride, to distinguish themselves as either telegraphers or wireless men.

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THE SHADOW OF MARCONI

Part 2: The Fate of the Wellfleet Station Compound

With war raging in Europe, the U.S. was anxious to remain neutral. On August 5, 1914, addressing the dilemma of maintaining the neutrality of radio traffic handled by foreign-owned commercial stations, President Woodrow Wilson issued a proclamation of radio neutrality. The proclamation specifically prohibited radio stations from receiving or transmitting any messages compromising the position of the United States or aiding the warring parties.

The order was directed to the Secretary of the Navy, and in turn execution was delegated to the Naval Radio Service. The Navy, as an outcome of the war, had the authority to regulate, monitor, and if necessary silence radio

communications involving the United States.

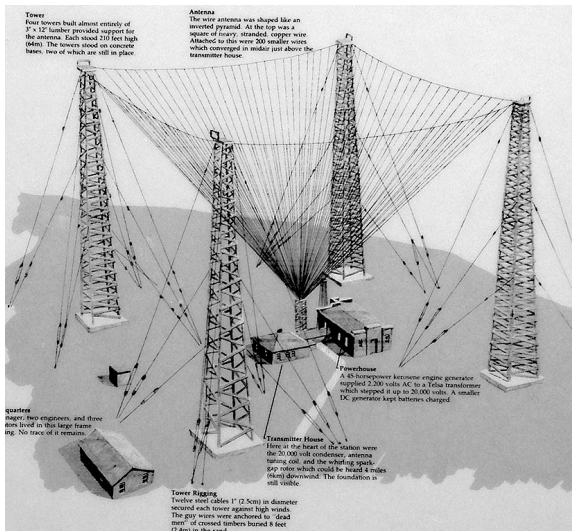
The Navy moved quickly to disseminate the conditions of the executive order to all foreign commercial stations and established enforcement procedures. At the time, the Navy, with its extensive ship and coastal facilities, was the predominant United States user of radio. This new authority was the achievement of the Navy's ambition to control all radio activities in a military manner.

The surveillance of the major foreign-owned commercial radio stations within the jurisdiction of the United States was a priority undertaking. Navy censors were stationed at the German-owned stations and British Marconi Company stations in the U.S., including the waning South Wellfleet

location and the intensifying Chatham operation.

When the U.S. entered the war in 1917 and with the Chatham station now fully operational, the South Wellfleet facility was shut down and abandoned for security reasons. Actually, this was fortuitous, as the two most eastern towers were in danger of collapsing over the bluff edge at any time even after their seaward guy wires had been relocated further inland. The distinctive, crisp and melodious tone of the WCC spark was silenced forever¹.

The Navy assumed ownership of the South Wellfleet site, and in 1920 local contractors were engaged to dismantle some of the buildings and take down the wooden towers. The operating equipment was salvaged or scavenged.



Drawing of the original Marconi station compound. Buildings from lower left to upper right were: Headquarters (living quarters for the staff), Transmitter (housing tuned circuits and rotary spark gaps), and Power House (housing 45-hp, 2,200-volt, kerosene-driven generator stepped up to 20,000 volts).

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The deserted site deteriorated for twenty years until the advent of the Second World War. The Navy had sold the property to private individuals, but in 1943 the land was condemned and conveyed to the U.S. Army. Integrated into a total land parcel of 1,738 acres, the site became a part of the Army training Camp at Wellfleet. The beach area was utilized for anti-aircraft and anti-amphibious attack training.

The Camp continued in sporadic use as a training post for active duty and reserve personnel through the Korean War era. In August of 1961

President John F. Kennedy, resident of the nearby Cape Cod town of Hyannis, created the Cape Cod National Seashore under the auspices of the National Park Service. The Seashore includes 43,500 acres of beaches, dunes, ponds and woods and stretches along almost 40 miles of Atlantic shoreline. It is one of the world's finest seascapes.

The site of the Marconi station was designated as a distinct park unit within the Seashore. The Camp was removed, the land was searched for unexploded ordnance and the dunes were planted with beach grass to stabilize them and curtail erosion. Meanwhile WCC continued to receive at Chatham with the Radio Corporation of America having assumed ownership in 1920.

The Marion operations continued until RCA, in 1948, built a modern ocean-front transmitting station in nearby South Chatham. This, the most active ship-to-shore operation on the East Coast, became part of MCI Communications when acquired in 1988. Beginning in 1993, the station was operated remotely from KPH in Point Reyes, California.



Memorial plaque at Marconi station site commemorates the first wireless telegram, which was sent to the King of England by President Theodore Roosevelt.

At the park, a Headquarters building was erected and a parking lot and amenities provided for visitors. Interpretative exhibits were mounted in 1974 chronicling the history of the site. However, the erosion continued its relentless progress. In the summer of 2013, the edge of the eroding dunes had reached within 32 feet of the shelter-pavilion which had been erected to protect the Plexiglas-enclosed model of the original station site and interpretative wayside panels. It was necessary to demolish the pavilion. The model and a striking bronze bust of Marconi are now safely on view in the Headquarters building. The explanatory



photo courtesy of Marconi Company, Ltd.

KM1CC

Marconi Cape Cod
 Memorial Radio Club
 Cape Cod National Seashore
 99 Marconi Site Road
 Wellfleet, MA 02667

FN 51
Barnstable County
USA
<http://www.nps.gov/caco>

CONFIRMING QSO WITH N3FHW			DAY MONTH YEAR 18 JAN '13		
UTC 19:53	FREQ 30M	RST 599	2-WAY CW	QSL PSE THX	

QSL card for Marconi Radio Club.

panels have been relocated inland.

This is the status of the Marconi Site today, but the memory of its former spark gap glory days is not forgotten. The memory is kept alive by the local amateur radio operators of the Marconi Radio Club², W1AA, which utilize a former Coast Guard station at an adjoining beach. The club commemorated the 75th and 100th year anniversaries of the establishment of the Marconi station, Marconi's 100th birthday and the Titanic disaster.

They also participate annually in International Marconi Day on the air with the symbolic call letters KM1CC. At this writing the group of dedicated volunteers, will be on the air again contacting fellow amateurs worldwide, marking Marconi's first transatlantic transmission on January 18, 1903.

Not far away, another group of amateurs have established the Chatham Marconi Maritime Center³ on the site of the Chatham receiving station. Here, members of the WCC Amateur Radio Association (WA1WCC) present a remarkable exhibit of the history of the Marconi ship-to-shore operations, comprising the premier wireless communications station of the 20th century.

International Marconi Day (IMD) is a 24-hour special amateur radio operating event that is held to celebrate the birth of the Nobel laureate on 25 April 1874. The event is initiated by, and is administered and coordinated by, the Cornish Radio Amateur Club G4IMD.⁴

Upon being introduced to Hiram Percy Maxim, the President of the American Radio Relay League, in 1925, Marconi was heard to remark: "Sir, I too am but an amateur." Fraternally, amateurs today perpetuate the memory of this man of radio and the accomplishments of the wireless era.

NOTES

- 1 During its existence the station had employed a diverse operating staff of both British and American nationality. Engineers, radiomen, telegraphers, mechanics, cooks, housekeepers, stewards et. al.—creating an almost self-sustaining

world under its own power. Some went on to be amateur radio operators. One was Irving Vermilya, 1ZE/W1ZE who was the last manager of the station. Now a legend, 1ZE was one of the first of the radio clan to be known as amateurs. He wrote installments for *QST* in 1916 to 1919 as "Amateur Number One" and later in February, 1942 he reminisced about WCC—Wireless Cape Cod—see <http://www.arrl.org/pubindex/search>

- 2 Marconi Radio Club, <http://www.facebook.com> (many images)
- 3 Chatham Marconi Maritime Center, <http://www.chathammarconi.org>
- 4 Cornish Radio Amateur Club, GB4IMD, <http://G4USB.net/IMD/>

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(continued, page 38)