

TRACING THE BIRTH OF RCA

The creation of the powerful Radio Corporation of America was the culmination of a complex series of events that also resulted in an unusual involvement by the United States Navy in radio matters, including implications for amateur radio.

In 1914, as the war in Europe escalated, the United States was determined to remain neutral. But it was confronted with the serious complication presented by the existence of foreign-owned commercial radio telegraph stations within the jurisdiction of the U.S. These stations provided essential and sometimes critical communication of messages and press to and from stations abroad, particularly in Europe, and ships at sea. The Government took steps to minimize the possibility of these stations handling any traffic which could compromise the neutrality of the country.

Addressing the dilemma of maintaining the neutrality of the content of radio traffic on August 5, 1914 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 rather than to the Department of Commerce's Bureau of Navigation. Since the former was empowered by the Congressional Radio Act of August, 1912,¹ it was heretofore responsible for all licensing and radio regulation. In turn, execution was delegated to the Naval Radio Service, which was advised to cooperate with the Bureau of Navigation.

The Navy, as a facet of war, wanted the ability to regulate, monitor and if necessary silence radio communica-

tions involving the United States.

The Navy moved quickly to disseminate the conditions of the executive order to all interested parties and to establish enforcement procedures. At the time, the Navy was the predominant U.S. user of radio—with extensive ship and coastal facilities. This new authority was the achievement of the Navy's ambition to control all radio activities in a military manner.

The surveillance of the dominating foreign-owned commercial radio stations within the jurisdiction of the United States was a priority undertaking. Navy censors were stationed at the German stations at West Sayville, Long Island, New York and Tuckerton, New Jersey; and the American Marconi² stations at Siasconsett, Nantucket; South Wellfleet, Massachusetts; and New Brunswick, New Jersey.

All operators, with the exception of the American Marconi Company, accepted the regulations. American Marconi vigorously protested the legitimacy of the censorship. While American Marconi sought legal relief their station at Siasconsett received and forwarded an obviously un-neutral message from the British Cruiser *Suffolk* to New



David Sarnoff with Guglielmo Marconi at Radio Central Rocky Point, 1933.

York chandlers requesting that supplies be delivered off Sandy Hook circumventing the censors.

In response the Navy closed this station for almost ninety days at the end of 1914. Under duress, American Marconi agreed to conform to the Navy regulation and did so throughout the war under stringent Naval control. The Navy also took over control of the Homag,³ German station at Tuckerton for the U.S. Government designating it as the clearing station for all questionable messages.

Despite the precautions in May, 1915 the German station WSL at Sayville⁴ managed with subterfuge to transmit two decidedly not neutral messages in diplomatic code. The first informed submarines of the location of *SS Lusitania*, enabling the U-20 to torpedo the liner off Ireland with the loss of 1,198 lives, 128 of whom were American. This action played a significant role in turning public opinion against Germany.

The second incident was the relay of a message from German Foreign Minister Zimmermann to Mexico asking that country to join with Japan and attack the United

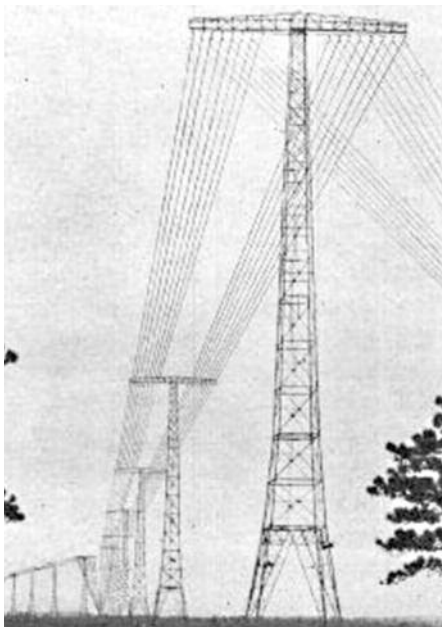
States. Additional violations were transmissions, recorded by amateur 2MN, concerning allied and neutral shipping to POZ, the base station at Nauen, Germany. Consequently the Navy took over the operation of the station. The station's principals, Dr. George Karl Frank, general manager and Dr. J. Zennick engineer and operations manager were interned.

On April 7, 1917 the U.S. entered the war and the Government began the process of establishing radio as a Government monopoly and the ultimate establishment of American radio supremacy. All commercial as well as amateur use of radio was banned. The Navy literally ruled the air waves and looking to the future, purchased the Federal Telegraph Company⁵ plus several of American Marconi's stations. However, the Congress upon discovery of these purchases ordered the Navy to return the stations to their original owners. These events underscore the determination of the Navy to have radio and international communications fully under their U.S. domination.

On the eleventh hour, of the eleventh day, of the eleventh month of 1918 the "war to end all wars" ceased and the warring parties set about establishing the terms of the armistice. The Navy persisted in its reign over all radio in the United States aggressively seeking to place all wireless communication interests in the control of American companies even though none existed and this would be monopolistic.

The dominant Marconi Wireless Company of America continued extensive operations and sought anxiously to obtain exclusive rights to purchase Alexanderson generators⁶ from the General Electric Company. Perceiving an opportunity, the Secretary of the Navy with the subtle approval of the President, encouraged the General Electric Company to purchase all the British owned stock of American Marconi.

The purchase was accomplished with an intricate exchange of preferred stocks and cross-licensing agreements, and resulted in the 1919 creation of the patriotically named and, importantly, entirely American-owned Radio Corporation of America (RCA). The



Part of the huge antenna system at Radio Central.

new company was soundly founded possessing all the property, contracts with maritime operators, licenses, patents and facilities of the former entity.

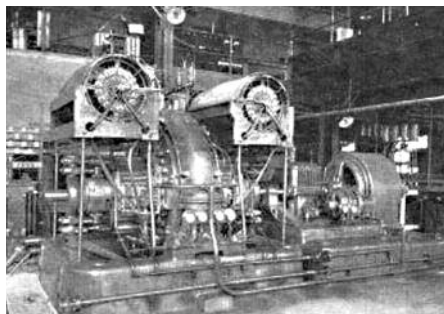
The creation of the new firm was not contested and it was privileged by certain Navy licenses and rights. Shortly afterward, RCA purchased the International Radio Telegraph Company owned by The Westinghouse Electric & Manufacturing Company which in turn had licensing agreements with the Western Electric Company. Consequently, General Electric and Westinghouse became corporate partners in RCA. The Radio Corporation was now not only the dominant radio telegraph entity worldwide but was positioned to succeed in the coming boom of broadcast radio with David Sarnoff at the helm.

However, as far as amateurs were concerned, the radio world was dim, literally and figuratively. The Navy treated amateurs with ambivalence; they were both a source of trained operators and a nuisance to be contended with on the air—causing interference and using valuable spectrum.

There was a movement in Congress to sustain the Navy's control of radio, which was stifled in committee partially by a letter campaign encouraged by the American Radio Relay League. But the League was in crisis, struggling to survive the effects of the war on its membership base. However, with strong leadership the League reorganized, put itself on sound financial footing and continued to apply influence to have amateur privileges restored.



Hiram Percy Maxim.



An Alexanderson high frequency alternator capable of putting 700 amperes of high frequency current into the antenna.

The results came in quick succession. On April 12, 1919, five months after the Armistice, the Navy lifted the ban on amateurs receiving; the first post war issue of *QST* was printed in June; last ditch efforts attempts by the Navy to sustain its control by Congressional action were defeated; and finally on September 26, 1919 the Navy announced the lifting of all restrictions on amateurs. The announcement was accompanied by the Executive statement that the Department of Commerce-Bureau of Navigation was to resume authority over the radio services as before the war.⁷

On August 31, 1921 President Hiram Percy Maxim convened the first ARRL National Convention in Chicago. He termed the amateurs “pioneers” and exhorted them to be steadfast in their faith and loyalty to one other. Secretary of Commerce Herbert Hoover sent the gathering of more than nine hundred amateurs a radio message stating that the Department of Commerce was by Congressional action the legal “Patron Saint” of amateur wireless operators—a far cry from the attitude of the Navy and a measure of the progress of amateur radio.

NOTES

- ¹ Public Act No.264.
- ² Although termed “American” the Marconi ownership and management was largely British. At this point Britain was a combatant and not yet an ally.

- ³ Hochfrequenz-Maschinen Aktiengesellschaft für Drahtlose Telegraphie (Homag) built this station for the French entity Compagnie Universelle de Telegraphie et Telephonie (C.U.T.T.) but never turned it over, maintaining operation and communication with its sister station in Eilvese, Germany.
- ⁴ This station was owned and operated by the Atlantic Communication Company, a New York corporation with no visible connections to Germany. However, the station was of “Telefunken” design and its sister station was in Nauen, Germany.
- ^{4&5} Above. The sister stations at Eilvese and Nauen, Germany were both operated by the German National Post Office.
- ⁵ A U.S. company and the leading commercial operator on the west coast.
- ⁶ The then “state of the art” radiotelegraph transmitter. An AC alternator run at extremely high speed—could put out 200 kW or 100 amperes of current at 2,000 volts with a frequency of 18,000 cycles.

This output was fed to a transformer stepping up the voltage to 7,000 volts which was then fed to the antenna system. In 1921 the Radio Corporation opened its “Radio Central” facility at Rocky Point, Long Island, New York with two of a planned ten alternators feeding a immense circular antenna system comprising twelve towers and one and a half miles long. The long wave system provided reliable international transmissions until it was discovered shortly after the station went into service that short waves transmitters could provide better results at considerably less power and cost. The transmitter was developed by Swedish engineer and radio pioneer Ernst Alexanderson, who was employed at General Electric in Schenectady, New York, and was later chief engineer at the Radio Corporation of America.

- ⁷ DeSoto, Clinton B. Two Hundred Meters and Down. West Hartford, Connecticut, American Radio Relay League, September, 1936.

DE FOREST, continued from page 44

- ⁱ & Follet Co., Chicago, 1950) p. 11-13.
- ⁱⁱ The stylized logo “de Forest,” which always appeared in cursive writing, was a registered trademark that was often used in advertising, but the de Forest spelling was rarely used for the names of the companies.
- ⁱⁱⁱ Three alterations in quotes in de Forest’s *Father of Radio* appear on p. 43 (*Electronic in Industry*, 1943), p. 228, (*New York Daily Tribune* (3/1/1907), and p. 255 (*Evening Journal*, *Jersey City* 2/20/1909).
- ^{iv} It is axiomatic that the first letter in a sentence is capitalized regardless of the actual spelling.
- ^v The reference appearing in this book was cited as: “De Forest Radio Company advertisement in *QST*, Jan. 1926, 10:1.” The author was describing the time period between 1923 and early 1926
- ^{vi} The De Forest system was based on four patents: U.S. No. 716,203 filed by L.

De Forest & E. H. Smythe on Sept 1, 1900, U.S. No. 773,069 filed by C. E. Freeman on Jan. 14, 1901, U.S. No. 720,568 filed by L. De Forest on March 6, 1901, and U.S. No. 716,000 filed by L. De Forest & E. H. Smythe on July 5, 1901.

- ^{vii} “Vacuum Tubes in Another Legal Tangle,” *Radio Broadcast*, Vol. 7, May 1925, p. 41.
- ^{viii} Thorn Mayes, T. Mayes, *Wireless Communication in the United States*, (New England Wireless and Steam Museum, 1989) pp. 29-56.
- ^{ix} See both spellings in American DeForest Wireless Telegraph Co. certificates in T. Mayes, *Wireless Communication in the United States*, pp. 31 & 32.
- ^x Perham de Forest Papers, History of San Jose, Box 10.
- ^{xi} This phrase often appears in its financial documents, for example, in its 1914 10K financial reports.