

Preventing **Wireless Anarchy**

Customs officials regulate the airwaves during the dawn of radio

For the 30 years of radio communication that followed Guglielmo Marconi's wireless transmission between stations in 1896, customs officials worked in partnership with the Bureau of Navigation to regulate the use of the airwaves. From the establishment of protocols for ship-to-shore communications to assigning call letters to stations to licensing radio operators and ensuring neutrality of the airwaves during the advent of World War I, customs officials were the frontline of implementing procedures that enabled clear communications via radio.

During the last years of the 19th century, radio transmissions revolutionized

communication by allowing telegraphy from almost anywhere. Its possibilities captured the popular imagination. And since messages were transmitted on public airwaves, they were easily intercepted or interrupted. Indeed, students at the Marconi School of Wireless Telegraphy learned their trade by listening in and transcribing ship-to-shore transmissions.

In addition, the creation of radio devices to transmit and receive messages was cheap, and the equipment was easy to operate. This quickly led to a clogging of the airwaves. This situation was summarized in an article originated in the New York Herald

and republished in newspapers across the country that stated:

The apparatus for imparting impulses to the air was easily and cheaply acquired. A \$2 induction coil, a small staff, a little wire for antennae . . . There are thousands of low power sets scattered through the eastern country . . . which are a means of annoyance, if not of menace, to vessels at sea.

And it was the communications with ocean-going ships that first involved customs officials in enforcing regulations for radio transmissions.

1902

- ★ The introduction of wireless telegraphy enabled communications from virtually everywhere. The U.S. Signal Corps used pack mules to carry their radio equipment to remote locations.



photo from George Grantham Bain Collection, Library of Congress, date unknown

- ★ Students at the U.S. Naval Academy constructing a wireless apparatus illustrate the popularity of the technology among the youth during the early 20th century. Local YMCAs and youth camps also sponsored classes in wireless telegraphy operation.



photo by Frances Benjamin Johnston, Library of Congress, ca. 1902

1911



- ★ Future Secretary of State William Jennings Bryan was one of the passengers on a stranded ship whose radio distress signals were not picked up by other vessels. When he returned to Washington, he lobbied for more stringent regulation of radio communications.

Congress gave this role to collectors of customs in the Radio Act of 1910, which also required a wireless apparatus and radio communication on ocean-going freighters with 50 or more crew and passenger ships. The regulations were to be developed by the Bureau of Navigation and “enforced by collectors of customs and other officers of the government.” Customs officers were the logical choice for this duty since they routinely boarded incoming ships and had a large presence at the major ports. After the enactment of this law, customs officials expanded their duties to ensure that both outgoing and incoming ships had the appropriate radio equipment and operators.

But this law did not provide for consistent radio operations while at sea. Ships generally employed a single operator, so messages could only be sent or received when the operator was on duty. The issue with this practice was after-hours emergencies. Two incidents at sea led to greater regulation and a larger role for customs officials.

On Nov. 23, 1911, the steamer Prinz

Joachim ran aground on a reef in the Bahamas. Its radio operator sent distress signals that were received by land stations, but were not picked-up by nearby ships because their operators were off duty. Onboard the stranded ship was the prominent politician and future Secretary of State William Jennings Bryan, who started lobbying Congress to require continuous staffing of onboard radio stations while at sea. Within six months of this incident, the H.M.S. Titanic sank. Its distress calls were missed by a nearby ship because the radio operator had gone off duty.

The international community was outraged, and the U.S. Congress responded with the Radio Act of 1912, broadening the role of customs officials and the Bureau of Navigation in the regulation of radio. The act was both a response to recent sea catastrophes and to the growth of radio usage worldwide. The powers of the act were supplemented in 1913 with a law that dealt with “preventing or minimizing interference with communication” between public and private stations. Both acts

specified that collectors of customs were to enforce the law.

The Radio Act provided for radio inspectors from the Bureau of Navigation to be stationed in nine districts that collectively covered the U.S. The district headquarters were primarily located in customhouses. The radio inspectors shared duties with customs officers. While there was no distinct division of labor, most customs officers concentrated on the regulation of commercial and shipping communications. The radio inspectors monitored airwaves for unauthorized interference, provided licensing examinations for amateur and commercial operators and, when available, accompanied customs officials to inspect radio equipment onboard ships.

The extent of this symbiotic relationship between customs officials and radio inspectors is illustrated by production of Radio Service Bulletins by the Bureau of Navigation. These bulletins provided updates to regulations and pertinent information

1912

1915



photo by Underwood and Underwood, Library of Congress

★ Students at the Marconi Wireless School in New York transcribe the messages from the shipping traffic in 1912.

★ Dudley Field Malone served as the collector of customs for New York from 1913 to 1917. He was responsible for implementing President Woodrow Wilson’s executive order for neutrality of the radio airwaves at the Port of New York.



★ Front page of the first issue of the Radio Service Bulletin, January 1915. Published by the Bureau of Navigation in the Department of Commerce, the bulletins describe changes in regulations, additions of stations and other pertinent information used by radio operators and by customs officials that enforced federal regulations relating to wireless transmissions.

ranging from the listing of call letters for new stations to the change of ownership of stations from Marconi Wireless Telegraph Company to the Radio Corporation of America. It is significant that the leading page of each bulletin addresses “collectors of customs, radio inspectors and others concerned.”

Unfortunately, unrest in Europe would break into war and thereby change the role of customs officials. To ensure neutrality of the airwaves, President Woodrow Wilson issued an executive order relating to the radios for ocean-going ships. As of Jan. 1, 1915, radio equipment on “ships of belligerent countries” was disconnected while they were docked in U.S. ports or in the waters outside the ports. Customs officials’ role in this process was described in a “Report of War Work at the Port of New York” in the chapter titled “Neutrality Period”:

All merchant vessels flying the flag of a belligerent country...were required to lower the antenna of the radio installation to deck and to disconnect it from the radio station of the ship. The receiving and transmitting apparatus

was sealed by an Inspector of Customs until December, 1915; after that date, the sealing was affected by a naval officer...The antenna was required to remain lowered and disconnected and the apparatus to remain sealed during the time the vessel remained within the limits of the port. Permission to hoist and connect the antenna and to break the seals in order to have the radio installation in operating condition was obtained from the Collector.

When the U.S. entered into World War I, much of radio regulation enforcement activities was temporarily transferred to the U.S. Navy.

The war also meant a suspension of all amateur licenses. But soon after hostilities ceased, amateur licenses could be reinstated. An article in the June 1919 issue of the *Electrical Experimenter* advised all amateur operators who wanted their licenses reinstated to contact the “Custom House of Your District for Further Particulars.” This article also described an innovation in radio that would lead to changes in customs

officials’ role in regulation enforcement. During the war years, radio had gone from transmitting Morse code to the broadcast of voice and sound:

And wonder upon wonder! When we put our sets away two years ago we were accustomed to hear nothing but the crisp dots and dashes in flute-like, staccato sounds...But the war has changed everything—even radio, for now the *radio telephone* has come into its own...the ether is now filled with the human voice flung far and broad over the land—nay, over the oceans...

Soon most newspapers had a daily feature like the *Evening World’s* “Radio Phone Service” column that listed broadcasts of concerts, public speeches and church services. These columns also addressed the amateur operators, advising them to secure their licenses by addressing the radio inspector at the customhouse in the district.

1917

- ★ Helen Campbell was the first wireless operator for the National League for Women’s Service, an auxiliary organization that worked in conjunction with the American Red Cross during World War I. In this period before woman’s suffrage, the position of wireless operator was one of the few professions where females had equal footing. The regulations governing radio communication from 1913 stated, “Women are eligible as applicants for licenses of any class or grade upon the same conditions as men.”



photo from George Grantham Bain Collection, Library of Congress, 1917

1921



- ★ Dai Buell broadcasts a piano performance over the airwaves in 1921. The expanded use of radio for entertainment leads the government to diminish the role of customs officials in the enforcement of regulations and to establish the Federal Radio Commission.



From Wireless Telegraphy to Commercial Radio

As the commercial radio broadcast became more prevalent, overall responsibility for the regulation of the airwaves transitioned to the U.S. Commerce Department. Its secretary during the 1920s was future U.S. President Herbert Hoover, who organized annual conferences to secure cooperation among amateur, commercial and entertainment stations and communications networks. When his cooperative ventures foundered and his attempt to regulate the radio airwaves by reducing the number of licenses was blocked by the courts, Congress stepped in and created the Federal Radio Commission in 1927 to oversee the regulation of the airwaves. This commission was replaced by the Federal Communications Commission in 1932. ■

—David D. McKinney, Ph.D.
Chief Historian



1925

★ Former Customs Collector Dudley Field Malone and Former Secretary of State William Jennings Bryan occupy another milestone in radio broadcast history for their roles in the infamous “Monkey Trial.” The 1925 trial of John T. Scopes for teaching evolution was the first ever to be broadcast live. Bryan headed the prosecution with Malone serving as co-counsel for the defense with Clarence Darrow. Pictured in front of the WGN microphone is Malone with Bryan, Judge John Raulston and Darrow.

- 1896** Guglielmo Marconi sends messages between stations without a hard-wire connection.
- 1910** Act to require apparatus and radio communication on certain steamers requires certain ocean-going ships to have radio equipment when visiting U.S. ports. Section 5 states that the secretary of commerce and labor makes regulations that are enforced “by collectors of customs and other officers of the government.”
- 1911** Bureau of Navigation in the Commerce and Labor Department is charged with establishing regulations for wireless telegraphy.
- 1911** The steamer Prinz Joachim strikes a reef in the Bahamas. Radio calls are received by land stations, but ships do not respond because radio operators are off duty. The future Secretary of State William Jennings Bryan was on board and pushes for legislation to require more radio operators on ships.
- 1912** The ocean liner Titanic sinks and rescue efforts are delayed because distress signals are missed by ships whose radio operators were not on duty.
- 1912** Radio Act of 1912 (Public Law 238) requires auxiliary power supply for radios and presence of two or more operators for passenger ships and ships with 50 or more crew. The act establishes nine districts for the regulation of radio apparatus and transmission. Regional radio inspectors from Commerce Department are located at customhouses. The law also requires radio operators to be licensed.
- 1913** An Act to Regulate Radio Communication (Public Law 264) Section 4 states, “That for the purpose of preventing or minimizing interference with communication between stations...said private and commercial stations shall be subject to the regulation of this section. These regulations shall be enforced by the Secretary of Commerce and Labor through the collectors of customs.”
- 1914** American Radio Relay League connects the various 200 amateur radio clubs and stations from coast to coast.
- 1914** Department of Commerce announces the establishment of radio call letters.
- 1914** President Woodrow Wilson issues an executive order for neutrality of wireless transmission. Customs officials enforce order for ocean-going ships.
- 1915** David Sarnoff proposes “radio music boxes” in a memo. The memo anticipates the creation of radio broadcasts for entertainment.
- 1915** Ships of belligerent countries are prohibited from using radio while in U.S. waters or ports. Their equipment is sealed by customs officials when in ports.
- 1917** The U.S. enters World War I and restricts radio transmissions. Amateur licenses are suspended.
- 1919** The U.S. lifts restrictions on receiving stations following the cessation of hostility.
- 1919** General Electric, Westinghouse and AT&T form the Radio Corporation of America.
- 1921** First coverage of presidential elections and broadcast of the World Series baseball games.
- 1922** Commerce Secretary Herbert Hoover convenes the first National Radio Conference.
- 1922** Stations licensed by the Commerce Department broadcast farm reports produced by the Department of Agriculture.
- 1925** The Scopes “Monkey Trial” is broadcast live.
- 1926** National Broadcasting Company is established to provide programming via radios.
- 1927** Federal Radio Commission is established to regulate the airwaves.
- 1932** Federal Radio Commission is abolished and functions transferred to Federal Communications Commission by Executive Order 5892.