

RCA Formation

At the start of the War, patent litigation surrounding the vacuum tube stymied U.S. radio technology growth. Bensman at 11. This was an obstacle for the Navy, which sought better radio technology and equipment during the War. Id. On April 7, 1917, a presidential proclamation broke the patent impasse by handing over all commercial radio to the Navy, motivating research and development by offering indemnity for patent infringements. Id.; Douglas at 278. Three companies – General Electric, Westinghouse, and Western Electric – made the most technological contributions. Bensman at 12.

By the end of the War, nationalist sentiment was high. Douglas at 279. Many sensitive technological developments had been made under the Navy's stewardship. Id. The Navy had long endured tense relations with the British-owned Marconi Company,¹ of which it had increasing suspicion. Id. Accordingly, the Navy sought governmental control of radio. Id. In 1918, Congressman J.W. Alexander proposed a bill that would put wireless under the Navy's control. Id. at 282. The public, however, disliked the idea of government ownership of a previously private industry. Id. When by 1917 Congress did not agree to establish government control, the Navy urged General Electric to buy out the Marconi Company. Bensman at 13.

Before the War, G.E. had been negotiating to sell Alexanderson alternators to American Marconi. Douglas at 285. When the War ended, and it was clear that the Navy would not retain control over radio, G.E. and Marconi resumed negotiations in February 1919. Id. Marconi not only wanted a large order of alternators, but sought exclusive rights to the equipment. Archer at 160. A letter from the Navy, [no specific date

¹ A decade earlier the Marconi Company had embittered the U.S. and many other governments by refusing to relay other companies' radio signals. Douglas at 119-24; Bensman at 4.

available], however, requesting that G.E. provide a report about a high-frequency alternator that had been installed at one of its stations, complicated G.E.'s sale of the alternator. *Id.* Owen Young wrote to Franklin D. Roosevelt, then Acting Secretary of the Navy, explaining that G.E. would like to cooperate with the government's request, but it was negotiating with the British and American Marconi Companies over licensing rights to the alternators. *Id.* at 161. Young's March 29, 1919 letter was forwarded to Captain Sanford Hooper who, along with Commander George C. Sweet, urged Admiral W.H.G. Bullard to persuade G.E. about the importance of having an American company retain the rights to the alternator. *Id.* at 161-62. That same day, April 3, 1919, Hooper called G.E. to set up a meeting between the Navy and the company. And on April 4, Roosevelt wrote to G.E., explaining that, "Due to the various ramifications of this subject, it is requested that before reaching any final agreement with the Marconi Companies, you confer with representatives of the [Navy] department." *Id.* at 163.

On April 8, 1919, Hooper, Bullard and Roosevelt² met in New York with G.E. representatives Edwin W. Rice, Jr., President, Owen D. Young, Albert G. Davis, Charles W. Stone, and Edward P. Edwards. Douglas at 285; Archer at 165. They expressed their desire to keep American technology out of foreign control, and Bullard suggested that an American company could be formed to buy out American Marconi. Douglas at 285; Archer at 166-67. The Navy officials also assured the G.E. representatives that, if such a company were formed, the Navy would cooperate with it. *Id.* Accepting the importance of protecting sensitive technological developments from foreign-owned companies, and seeing that creating a wireless communications company could improve their business opportunities as electrical equipment manufacturers, General Electric agreed. Douglas at

² Correct about FDR? Archer doesn't list FDR as attending

286; Archer 167 [No source cited, but see Dec. 9, 1929 testimony of Owen Young before interstate commerce committee]. On April 9, G.E. broke off negotiations with Marconi over the alternator, leading the way to the formation of RCA. Douglas at 286; Bensman at 14.

Young recognized that creating a strong American communications company posed a significant challenge. Once the government reinstated patent rights to their owners, no single manufacturer had rights to a complete radio system. Archer at 168.

In May, Young met with E.J. Nally of American Marconi to discuss creating an all-American company. Douglas at 286. They reached an agreement over the summer leaving G.E. to negotiate further details with British Marconi. And in October, 1919, RCA was incorporated.

Patent Pooling

Between 1920 and 1921, RCA reached cross-licensing agreements with General Electric, AT&T, AT&T's subsidiary Western Electric, and Westinghouse concerning 1200 patents, effectively ending the radio patent war. Bensman at 15; Starr at 226; Barnouw at 60. Captain Hooper, the individual who had urged the Navy to suspend patent rights during the War so that needed technology could be manufactured, similarly urged RCA to enter cross-licensing agreements as a way to continue the patent moratorium. Archer at 180, 185. At Hooper's suggestion, the Navy had signed a patent release to get radio equipment built since neither the companies nor the Navy knew who owned which patents. Archer at 185 (citing Hooper's testimony before the Senate Committee on Interstate Commerce in December, 1929). Hooper knew that a patent

release wouldn't work after the War, so he contacted G.E. and AT&T by a letter dated January 5, 1920 "appeal[ing] to them to get together and make some arrangement, so that the Navy could buy radio equipment without having to take the patent responsibility." Id.

The first agreement was between RCA and G.E. when RCA was formed. They licensed their patents to each other November 20, 1919. Douglas at 289. RCA and AT&T signed a cross-licensing agreement concerning the vacuum tube on July 1, 1920. Sobel at 32; **Douglas at 289**; Archer 194-95. And RCA and Westinghouse reached a cross-licensing agreement involving International Radio on June 21, 1920. Sobel at 34-35; Archer at 210. Then, in March 1921, RCA and Westinghouse reached a cross-licensing agreement. Douglas at 290. The RCA board was restructured with four members from the former American Marconi – Edward J. Nally, James R. Sheffield, Edward W. Harden, and John W. Griggs – four from G.E. – Edwin W. Rice, Jr., Owen D. Young, Albert G. Davis, and Gordon Abbott – three from Westinghouse-International Radio, two from AT&T, and one from United Fruit. Sobel at 35; Archer at 179-80 [no names of other companies' board members].

These cross-licensing agreements gave RCA the rights to the Marconi patents, the Alexanderson alternator, the de Forest patents on the triode valve, the Westinghouse Fessenden and Armstrong patents relating to heterodyne, regeneration and feedback, and the United Fruit Company patents regarding crystals and other detectors. W.J. Baker at 181. These agreements enabled all three companies to manufacture the vacuum tube without worrying about infringement. Bensman at 15. Under the terms agreed to by the Radio Group, GE would manufacture 60 percent of RCA radio sets and Westinghouse the other 40 percent. Starr at 226-27. RCA would distribute them and provide

radiotelegraph services, and AT&T would have exclusive rights to wired and wireless telephone service and to interconnection of wired and wireless systems. *Id.*