

ALEXANDER POPOV

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Popov, Alexander Stepanovitch (1859-1905) was a prominent mathematician and physicist whom Russia claims to have invented the radio before the Italian scientist Guglielmo Marconi did. Determining who was the official "inventor of the radio" is complicated by nationalistic pride, inadequate documentation of events, and differing interpretations of what constitutes "inventing" the radio. By what most persons in the West consider "objective" analysis of the facts known, however, Marconi's work invariably is recognized as having priority over Popov's. However, Popov's numerous achievements do merit both recognition and respect. Popov was the chair of the Department of Physics at St. Petersburg University in 1901 and director of the St. Petersburg Institute of Electrical Engineering in 1905. On May 7, 1895 Popov demonstrated that a receiver could detect the electromagnetic waves produced by lightning discharges in the atmosphere many miles away. Popov's receiver consisted of a "coherer" made of metal filings, together with an antenna, relay, and bell. The relay was used to activate the bell which both signaled the occurrence of lightning and served as a "decoherer" (tapper) to ready the coherer to detect the next lightning discharge. The value this instrument could have in weather forecasting was obvious. In 1865 the Scottish physicist James Clerk Maxwell had predicted that electromagnetic waves existed. In 1888 a German

scientist Heinrich Hertz had proven seven years later that electromagnetic waves definitely did exist. Still, no one had yet found any practical use for these electromagnetic or "Hertzian" waves.

Almost a year after his first experiment, Popov conducted another public experiment on March 24, 1896 that demonstrated the transmission and reception of information by wireless telegraphy. On that day the Russian Physical and Chemical Society convened St. Petersburg University. Wireless telegraph signals, transmitted a distance of over 800 feet from another building on the campus, were audible to all in the meeting room. One professor stood at the blackboard and recorded the alphabetical letters represented by the Morse code signals. The letters spelled out the name "Heinrich Hertz."

Unfortunately this experiment was never officially recorded. Meanwhile Guglielmo Marconi filed an application for the patent on wireless telegraphy on June 2, 1896, and his first public demonstration occurred in July of that year. Although both of Popov's experiments took place before Marconi filed the patent, it is widely known that Marconi had already made considerable breakthroughs prior to Popov's March 24, 1896 experiment, including the transmission and reception of simple messages. Nevertheless, Popov's achievements were recognized. In 1900 he was awarded a Gold Metal at the Fourth World Congress of Electrical Engineering.

Bibliography

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