

## Major Edwin Howard Armstrong Newsletter

Amateur radio has been around ever since the late 19<sup>th</sup> century and due to some pioneering inventors in the early 20<sup>th</sup> century, amateur radio persists till this day. Major Edwin Howard Armstrong is one of those early inventors who helped amateur radio enormously and he is arguably one of the most influential inventors in amateur radio. His contributions enlarged the capabilities of what we now know that the amateur radio can do. According to PBS “this brilliant engineer advanced both AM and FM radio, turning them into viable broadcast technologies, and innovated military radio uses in [both] World Wars.” In addition to this, he enlisted in both wars and utilized his ingenuity to truly create a communication network that could enrich the lives of many during and years after the wars. However, many people do not know the remarkable service driven life of Major Edwin Howard Armstrong. His early life is fascinating and his later life is remarkable, inspiring as well, and tragic all at the same time.

When Major Edwin Armstrong was born, he was given the name Edwin Howard Armstrong and he was born on December 18, 1890 and grew up in a home overlooking the Hudson River in Yonkers, New York. He had an interesting childhood where he was already building and inventing radio equipment. The reason for his interest early on in radios could be said to have originated because of a book called “*The Boys Book of Inventions.*” This book had many ideas for inventions for boys and this sparked a fire in Edwin to dedicate his entire life to inventing new technological gadgets and to also learn and be a respected electrical engineer. In fact, according to the National Park Services Edwin’s childhood home had “his homemade radio equipment [that] eventually filled his bedroom, and during high school, he built a 125-foot tall radio antenna on the lawn of his house.”

After high school, Armstrong enrolled in Columbia University studying as an electrical engineer. In addition, it was in his undergraduate years at Columbia that Armstrong made his first major invention, which was the regenerative circuit, which he patented in 1914. The regenerative circuit was so useful that during WWI, Major Edwin Armstrong utilized it as a viable and usable communication technology and gave it to the military free to use during the war. According to Wikipedia “[the regenerative circuit] was widely used between 1915 and WWII [because the] advantages of regenerative receivers include increased sensitivity with modest hardware requirements, and increased selectivity because the Q of the tuned circuit [was increased.]” During his time as well during WWI, Edwin Armstrong first became a captain and then later became a major in the Signal Corps.

He was not done with making inventions in radio communication after WWI and in 1919, Major Armstrong made another patent request for the superheterodyne circuit. It was issued the following year and Armstrong sold it to Westinghouse. The superheterodyne circuit superseded the regenerative circuit and made the regenerative circuit obsolete. However, due to patent legal disputes years afterward, Armstrong lost his case for the superheterodyne circuit. Nevertheless, Major Armstrong kept on working on improving radio communication and in 1933, he created the FM radio system (Lemelson-MIT).

Major Edwin Armstrong was such a prolific inventor that in 1941 he received the Franklin Award and in 1942 he received the Edison Medal. Besides these accolades, according to Columbia University (2020) “he held 42 patents and received numerous awards, including the first Institute of Radio Engineers now IEEE Medal of Honor, and the French Legion of Honor [besides being] a member of the National Inventors Hall of Fame and the International Telecommunications Union’s roster of great inventors.” His life was a remarkable success with

his life dedicated to serving others for the betterment of his fellow man and that's how he should be remembered for. In later years due to his widow's efforts after his death, "FM was established as the superior radio system, and is even used in earth-to-space communication" (Lemelson-MIT).

## References

- Columbia Entrepreneurship Innovation and Design. (2020) *Edwin Armstrong*. Columbia University. <https://entrepreneurship.columbia.edu/startup/edwin-armstrong/>
- Lemelson-MIT Program. *Edwin H. Armstrong*. Historical Inventors. Lemelson- MIT <https://lemelson.mit.edu/resources/edwin-h-armstrong>
- Lienhard, J. H. (1997) *No. 317: Edwin Armstrong And FM Radio*. Engines of Our Ingenuity. <https://uh.edu/engines/epi317.htm>
- National Park Services. (2019, July 18). *Edwin H. Armstrong House*. National Historic Landmarks. <https://www.nps.gov/subjects/nationalhistoriclandmarks/edwin-h-armstrong-house.htm>
- Wikipedia. (2020, July 24). *Edwin Howard Armstrong*. Wikipedia. [https://en.wikipedia.org/wiki/Edwin\\_Howard\\_Armstrong](https://en.wikipedia.org/wiki/Edwin_Howard_Armstrong)
- WGBH History Unit. (2004) *Who Made America? They Made America*. PBS [http://www.pbs.org/wgbh/theymadeamerica/whomade/armstrong\\_hi.html](http://www.pbs.org/wgbh/theymadeamerica/whomade/armstrong_hi.html)