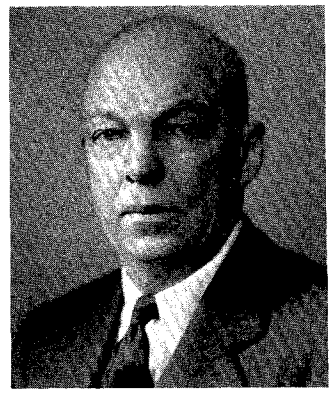

Fabian Bachrach

Edwin Howard Armstrong 1890-1954

On February 1 of this year, Major Edwin H. Armstrong passed away at his home in New York City. His passing marks the close of one of the most brilliant and colorful careers in the communications field. During his student days he was influenced by the ideas of the early experimenters in electricity and radio from Watt to Marconi. While at Columbia he studied under the physicist Michael Pupin. Some years later Armstrong was to be appointed to the academic position held by Pupin, Head of the Marcellus Hartly Research Laboratory, after serving as assistant to the physicist.

Armstrong was one of the early wireless pioneers in the United States, starting with an amateur radio station in 1905.

Armstrong was a great teacher as well as an inventor, and his lectures and public talks were notable for his care of presentation and patience in explaining the finer points of his presentation.

Armstrong developed the tuned regenerative circuit which provided the basis for the regenerative receiver and a wide variety of oscillators. This was done while he was still in college. Later he developed the superheterodyne circuit which is the basis of almost all modern radio receiving and radar equipment. Another of his ideas, the super-regenerative detector, opened the door to high-gain receivers for the frequencies above 30 megacycles. This circuit provides tremendous gain in a single tube circuit, and for many years it formed the heart of the police radio systems.

All of his earlier contributions were swiftly overshadowed by his disclosure and development of the principles of frequency modulation in the mid-1930's. Although the communications facility and fidelity of reproduction of FM were clearly demonstrated by Armstrong in broadcasts from a station he erected with his own money, commercial acceptance of FM was not great. The reasons are many, and even today because of restriction of FM stations to "single market" areas and limitation of station power, FM is not expanding rapidly. The fact that it enables the transmission of wide-range audio signals and provides static-free reception has not been able to overcome the commercial and regulatory hindrances to its growth.

Last fall Armstrong presented the results of his work in the field of multiplexing wide-range audio signals over an existing single-channel FM broadcasting station, in a paper presented before a joint meeting of the Audio Engineering Society and the Radio Club of America.

During both world wars Armstrong served his country in the field of communications. His FM system made possible reliable mobile radio equipment for our infantry and artillery forces throughout the world. Without FM, mobile force communications would have been hampered by a variety of problems.

Major Armstrong was an honorary member of the Institute of Radio Engineers, Australia, The Franklin Institute, and the American Institute of Electrical Engineers, and a noted member of the Radio Club of America.

He was the holder of three degrees of Doctor of Science and the recipient of more than a dozen awards for outstanding achievement.

He is survived by his wife, Marian MacInnis Armstrong.

It is with the greatest regret that we here must record the passing of Major Armstrong, a man whose dedicated example and brilliant work will remain as a living tribute.