

Melville Eastham

Workplace Innovator Crafts Early Electronic Products



Melville Eastham isn't well known today, yet his breakthrough technical, business, and social achievements in the first half of the 20th century were highly influential and helped create the modern electronics industry.

Born in Oregon City, Ore., on June 26, 1885, Eastham entered a world that little resembles today's continuously connected planet. In 1885, the year AT&T was incorporated, the telephone and telegraph were the only high-speed communications options, primarily used by governments, businesses, and only the wealthiest individuals. Yet by 1964, the year Eastham died, telephones could be found in nearly 83% of U.S. homes. Radio images were being transmitted from the moon. And, AT&T was demonstrating its Touch Tone dialing and Picture Phone technologies at the New York World's Fair.

For most of his professional life, Eastham led General Radio, which initially offered a wide range of radio and electrical products, but eventually focused on test instruments, such as vacuum tube voltmeters (VTVMs) and oscilloscopes. But it wasn't the equipment that set Eastham apart from his competition.

Eastham's greatest long-term contribution to the electronics industry was the care and attention he lavished on his company, employees, and products. In all of these areas, Eastham set benchmarks that can still be used to measure the success of an electronics company, even in an era of smart phones, flat-panel televisions, and unmanned aerial drones.

EARLY CAREER

In 1905, after leaving school and working for a time as an electrician for a Portland, Ore., streetcar company, Eastham moved to New York. Upon arriving in what was then the nexus of a rapidly growing U.S. electrical industry, Eastham joined the Ovington X-Ray Company.

The next year he partnered with a pair of Ovington employees, J. Emory Clapp and W.O. Eddy. Together they founded the Boston-based Clapp, Eddy and Eastham Company, which also marketed x-ray components, such as spark coils.

The business, which was renamed Clapp-Eastham following Eddy's departure, continued to offer x-ray parts. But the company eventually found a lucrative new niche by selling its spark coils to wireless experimenters who were eager to use the components in their primitive spark-gap transmitters.

Eastham left Clapp Eastham in 1915 to organize General Radio, based in Cambridge, Mass. The new company would serve the rapidly growing ham radio market, as well as a steadily increasing number of commercial and government customers, with a variety of radio-related products, including test instruments. With amateur radio experimentation silenced upon the nation's entry into World War I, the company turned its attention to military sales, offering transmitters, receivers, test devices, and various radio components.

After experiencing a business downturn at the end of the war, General Radio's sales slowly revived as the company began cashing in on the 1920s radio boom. The firm sold radio transmitters, receivers, and related equipment to hams as well as commercial and government customers. By the late 1920s, as the radio boom subsided, General Radio backed out of the transmitter/receiver market to focus on what Eastham felt was his company's core competency: precision test instruments.

In a crowded, boisterous market filled with hundreds of part-time garage-based businesses and financially shaky startups, Eastham realized there was a growing need for a company that would supply high-quality instruments and stand behind its products. His hunch proved correct and sales of General Radio's test equipment and related products quickly soared.

Over the next few decades, General Radio produced exquisitely engineered test instruments. The early models in particular seemed more suitable for an executive's office or parlor than a test bench.

"The original designs were wooden cabinets made of beautiful walnut or oak, lined with sheet metal copper to prevent electronic interference, and 1/4-inch aluminum panels with a proprietary, distinctive, black-crackle finish, with German-silver knobs and dials and white meters," recalled William Thurston,

MELVILLE EASTHAM: IRE MEDAL OF HONOR WINNER

When Eastham won the IRE Medal of Honor in 1937, he joined an impressive roster of engineers that continues to grow. In 1963, the award became the IEEE Medal of Honor when the IRE merged with the American Institute of Electrical Engineers (AIEE) to form the IEEE. It represents the IEEE's highest recognition.

General Radio's president from 1972 to 1988, in an oral history given in 1993. Thurston joined the company in 1941.

SOCIAL INNOVATOR

With his business prospering, Eastham could afford to turn his attention to General Radio's workforce. Feeling that employee respect and support was essential to General Radio's long-term success, Eastham instituted a series of new employee policies designed to boost worker morale and performance.

In a May 1965 speech to the Newcomen Society, Donald B. Sinclair, General Radio's president, observed that Eastham was a pioneering social innovator. "He felt strong that a company exists not just for the stockholders, but for the employees as well," Sinclair said.

In 1917, General Radio launched a profit-sharing plan. The following year, it took out \$1000 life insurance policies on all of its employees, making it one of the first businesses to provide a group insurance plan. In 1919, working hours were cut from 44 to 40 a week, at a time when the industry average was 46.3. Paid holidays were increased to nine. "[General Radio had] a reputation of being a very paternalistic company in the best sense of the word," Thurston said.

General Radio's employee model was eventually adopted in one form or another by most of its competitors. Eastham's basic philosophy continues to be reflected in industry employee compensation packages to this day.

As word of his technical, business, and social accomplishments spread, he began gaining industry recognition. Serving as treasurer of the Institute of Radio Engineers (IRE) from 1927 to 1940, he became an IRE Fellow in 1927 and received the IRE Medal of Honor in 1937 for his "pioneer work in the field of radio measurements, his constructive influence on laboratory practice in communication engineering and his unflinching support of the aims and ideals of the Institute."

LATER YEARS

During World War II, Eastham set aside commercial work to focus on military research. Recognizing his ability to organize and motivate project teams, he was tapped by the government to lead

radio navigation research at the Radiation Laboratory at the Massachusetts Institute of Technology (MIT).

His team's efforts resulted in the development of LORAN (LONG RANGE Navigation), a low-frequency location system that was widely used by both military and commercial ships for more than a half century until it was gradually displaced by satellite technology.

With the nation still at war, Eastham gave up his position as General Radio president in 1944. Yet he kept the title of chief engineer until his full retirement in 1950. Engineer Henry Hall, who began working at General Radio in the late 1940s while still a student, remembers Eastham as a quiet, unassuming man.

"Many kids there didn't know who he was," Hall recalls. Eastham was so low-key and understated that some new hires assumed the older gentleman pattering around the premises was a lab assistant or perhaps a maintenance worker. "He wandered around in a white lab coat."

Eastham's low-key approach and concern for employee welfare earned him the respect and admiration among industry colleagues and competitors, including Hewlett-Packard co-founder William R. Hewlett. In an August 1983 letter to Thurston, Hewlett recalled Eastham's willingness to share his company's processes and discoveries.

"Melville always took the position that he welcomed competitors' visits to the plant and he did not hesitate to show them the work that was going on in the lab," Hewlett wrote. "As I remember, he used to say in his shy sort of way, 'If they copy us, they will only be following; it is what we are thinking that is important.'"

Hewlett added that Eastham's mindset eventually spread to other companies. "As I have seen and observed most of the instrument industry in this country, this freedom of exchange [attitude] still exists," he wrote.

Since Eastham stubbornly avoided self-promotion to place his company, staff, and products in the spotlight, it isn't surprising he remains largely unknown even within the industry. Yet his technical, business, and social accomplishments helped transform a nascent U.S. electronics industry into a world leader. Sometimes, good guys do win. **ee**

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