

## Jack A. McCullough

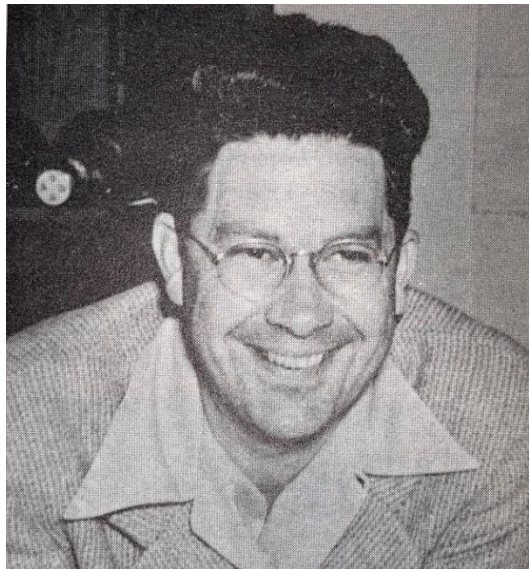
(1907-2001)

**Category:** Technology

**Criteria:** groundbreaker

**SMC Connection:** Lived and worked in San Bruno

**Text:** Jack A. McCullough was born in San Francisco, attended the local Lick-Wilmerding high school, and later, the San Mateo Junior College. While still at college he spent a lot of his time servicing radio sets for the San Francisco radio and music firm. In 1934 he co-founded the San Bruno transmitting tubes company Eitel-McCollough Inc. (EIMAC), now a division of Communications & Power Industries (CPI). Even after the great success of EIMAC, he pursued his passion for radio transmission and in 1941 moved with his family to Millbrae, San Mateo County, where he established his amateur radio station W6CHE.



**Innovator image:** EIMAC news, Feb. 1, 1946, SMCHA L2016.024  
(loan)

**Date on timeline:** 1934

## William W. Eitel

(1908-1989)

**Category:** Technology

**Criteria:** groundbreaker

**SMC Connection:** Lived and worked in San Bruno

**Text:** William W. Eitel grew up in Los Gatos, Santa Clara Count and spent most of his life in Northern California. A radio amateur and enthusiast, he was still in high school when he set the record as the first radio operator to contact Europe on the 10-meter band, a portion of the shortwave radio spectrum primarily used by amateur radio and amateur satellite. During his life, Eitel belonged to several radio ham clubs such as the San Mateo Radio Club and the Santa Clara County Amateur Radio Club, serving as president for that last one. In 1934, he co-founded the hugely successful San Bruno transmitting tubes company Eitel-McCollough Inc. (EIMAC), now a division of Communications & Power Industries (CPI).



**Innovator image:** EIMAC news, Sep. 9, 1944, SMCHA 739 Pamphlet

**Date on timeline:** 1934

## EIMAC

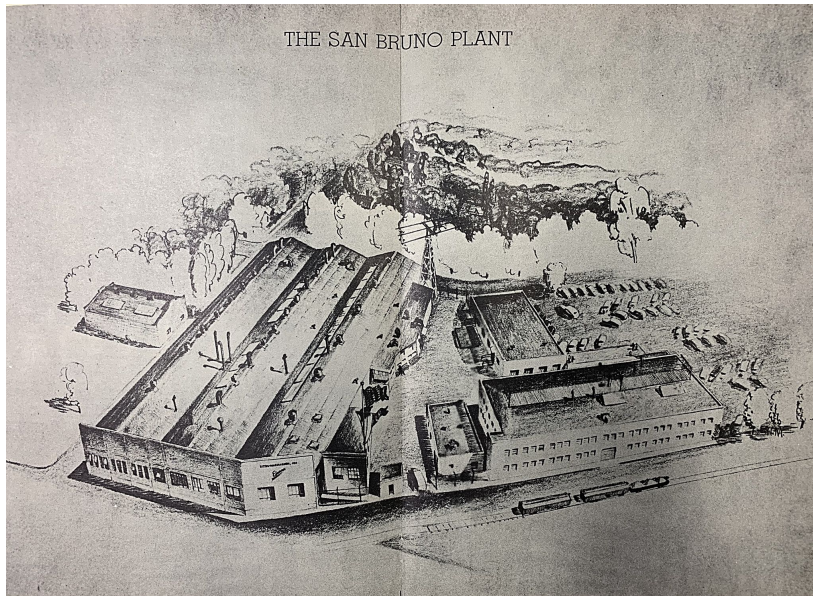
(1934-Present)

**Category:** Technology

**Criteria:** groundbreaker

**SMC Connection:** Located in San Bruno

**Text:** In the 1930s, William W. Eitel and Jack A. McCullough were both employees of vacuum tube company Heintz & Kaufman, Ltd., San Francisco, California, where they got the idea to change the business and produce tubes more powerful and reliable than those that were made at the time. During the period of their employment, Eitel and McCullough developed a series of inventions that later became the founding ideas of EIMAC, a San Bruno born company that would grow to become a leader in its field.



**Innovator image:** San Bruno Plant, EIMAC News, Sep. 9, 1944, SMCHA 739 Pamphlet

**Date on timeline:** 1934

## EIMAC

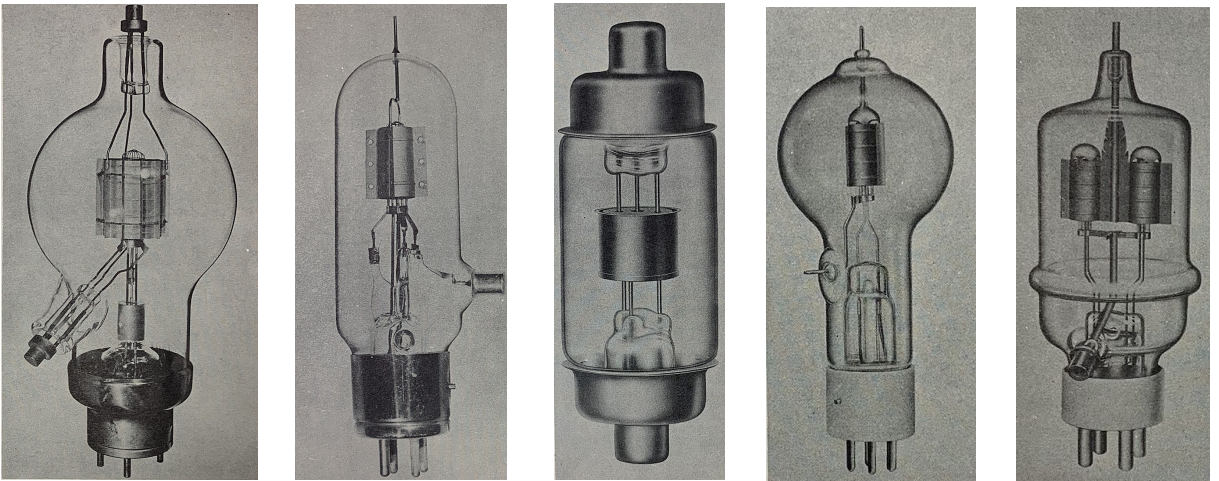
(1934-Present)

**Category:** Technology

**Criteria:** groundbreaker

**SMC Connection:** Located in San Bruno

**Text:** Vacuum tubes were investigated by great minds such as Thomas Edison, John Fleming, Lee de Forest and two San Mateo County innovators, Eitel and McCullough. These devices created to control and amplify flow of electric current use metallic elements to direct electron movement within a vacuum sealed tube. This groundbreaking technology ultimately made possible TV, radio and wireless communication.



**Innovator image:** EIMAC tubes, EIMAC News, Sep. 9, 1944, SMCHA 739 Pamphlet

**Date on timeline:** 1934



## EIMAC

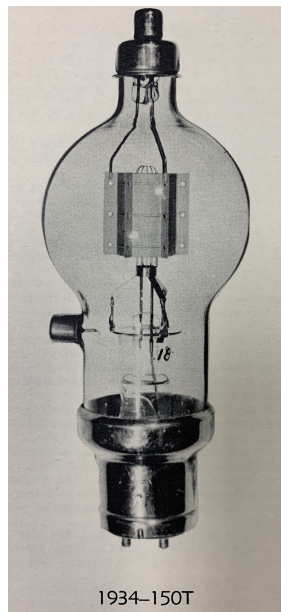
(1934-Present)

**Category:** Technology

**Criteria:** groundbreaker

**SMC Connection:** Located in San Bruno

**Text:** EIMAC, the acronym for Eitel-McCullough Inc., was founded in 1934 in San Bruno, California. In September of that year Eitel and McCullough, together with one employee, Carl Porter, began to design their first tube, the 150T. After fixing a few problems in the first model, they finally managed to build tubes that were durable, efficient, and could handle power overloads, differently than those that were currently on the market. Many models followed that first one as EIMAC tubes were becoming increasingly well known among airline companies, radio equipment firms and amateur radio operators.



**Innovator image:** 150T, EIMAC News, Sep. 9, 1944, SMCHA 739 Pamphlet

**Date on timeline:** 1934

## EIMAC

(1934-Present)

**Category:** Technology

**Criteria:** groundbreaker

**SMC Connection:** Located in San Bruno

**Text:** In 1940, EIMAC received its first sizable order for American military communication purposes. A contract from Western Electric for 10,000 tubes pushed the company towards considerable changes San Bruno plant doubled in size, hand-made methods were converted to mass production techniques and the number of employees increased 10 times in just one year. Women employees were also hired for production work, a progressive action in those days.



**Innovator image:** Glass department, EIMAC, San Bruno, EIMAC News, Sep. 9, 1944, SMCHA 739 Pamphlet

**Date on timeline:** 1934

## EIMAC

(1934-Present)

**Category:** Technology

**Criteria:** groundbreaker

**SMC Connection:** Located in San Bruno

**Text:** After the World War II, EIMAC continued to grow providing larger tubes for radio, television, and radar technology. In 1958, EIMAC produced a giant klystron tube, an improvement on the tubes created by the brothers Russell and Sigurd Varian to amplify radio frequencies. Using that tube, a radio signal was bounced off the moon in the same year. In 1965, the company merged with Varian Associates. Since 1995, EIMAC has been part of Communications & Power Industries (CPI), a global manufacturer of electronic components and subsystems focused on communications and defense markets.



**Innovator image:** X626 tube, EIMAC News, 1958, San Jose History Perham Collection (image also on SMCHA 2016.027.002 but with poor quality)

**Date on timeline:** 1934

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John Ambrose Fleming

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