This Day in History… February 15, 1946

Unveiling of ENIAC

On February 15, 1946, the Electronic Numerical Integrator and Computer (ENIAC) was unveiled to the public. It's considered the first general-purpose electronic digital computer.

Since ancient times people have used calculating devices, but it wasn't until the 1900s that the first general-purpose digital computers were developed. Early computers built during this period include John Atanasoff and Clifford Berry's ABC computer and Max Newman and Tommy Flowers's Colossus Mark I.

In 1938, John Mauchly needed a way to make complex computations for an article he was writing on meteorological data analysis. His article was rejected because it didn't have enough data analysis. Mauchly, who'd studied electrical engineering in college, began building different circuits to explore the possibilities of digital electronic computing.

With the onset of World War II, the ballistic research laboratory at Aberdeen Proving Ground needed a more advanced way to prepare firing and bombing tables for the Army and Army Air Corps. Until that time, these calculations had been carried out by human computers and a continuous variable calculator, which was not only extremely slow, but also subject to frequent breakdowns.

Issued to commemorate the 50th anniversary of ENIAC, this stamp features an 18th-century engraving of a brain. It's partially covered by small blocks containing parts of circuit boards and binary language.

These bombing tables were a necessity. Factories were producing new long-range guns – and gunners usually couldn't see their targets over hills. How far this artillery would travel depended on number of conditions – wind speed and direction, humidity, temperature, elevation above sea level, and temperature of the gunpowder. Most guns had tables accounting for 500 different sets of conditions. New guns and new shells required new firing tables.

ENIAC was initially funded by the Army to calculate long-range gun trajectories.

Professor and lieutenant Herman Goldstine was charged with finding a faster way to develop these tables. At first, he concluded the task was impossible. Then one day he met graduate student J. Presper Eckert that asked if he'd heard about John Mauchly, a new teacher at Pennsylvania's Moore School of Electrical Engineering who had what many considered crazy ideas about computing. Mauchly had written a seven-page article, The Use of High-Speed Vacuum Tube Devices for Calculation. Mauchly's proposed machine would be faster and more accurate than mechanical devices. The school's administration ignored his idea, but it was widely circulated among the students.

Goldstine contacted Mauchly and explained the situation and Mauchly was thrilled, realizing the Army could help make his idea a reality. Goldstine then presented the idea to the Army, who granted them a contract. In June 1943, Mauchly and Eckert began developing the Electronic Numerical Integrator, which they later renamed the Electronic Numerical Integrator and Computer (ENIAC).

Eckert was considered a genius and took the lead on the project. They spent 200,000 hours building the ENIAC at a total cost of $487,000. Work on ENIAC was completed in the fall of 1945, too late to fulfill its original purpose. However, the Army was still able to use it in the development of the hydrogen bomb. It was officially dedicated and unveiled to the public on February 15, 1946. ENIAC is considered the world's first programmable electronic, general-purpose digital computer.

ENIAC weighed more than 30 tons and occupied more than 1500 square feet. ENIAC could complete 5,000 addition cycles in one second, doing the work of 50,000 people. ENIAC could calculate a trajectory in 30 seconds that would take a person with a desk calculator 20 hours or the Differential Analyzer 15 minutes.

Eckert and Mauchly applied for a patent in 1947 (which they received in 1964) and started their own company, Eckert and Mauchly Computer Corporation. Working together, they developed the first commercial computer, the UNIVAC. ENIAC remained in continuous use until October 2, 1955. ENIAC was disassembled and portions of it sent to various schools and institutions including the Smithsonian and West Point. Since 2011, February 15 has been celebrated as ENIAC Day or World's First Computer Day.

ENIAC helped pave the way for modern personal computers.

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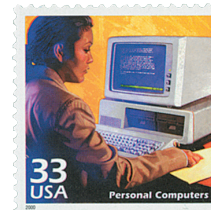
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