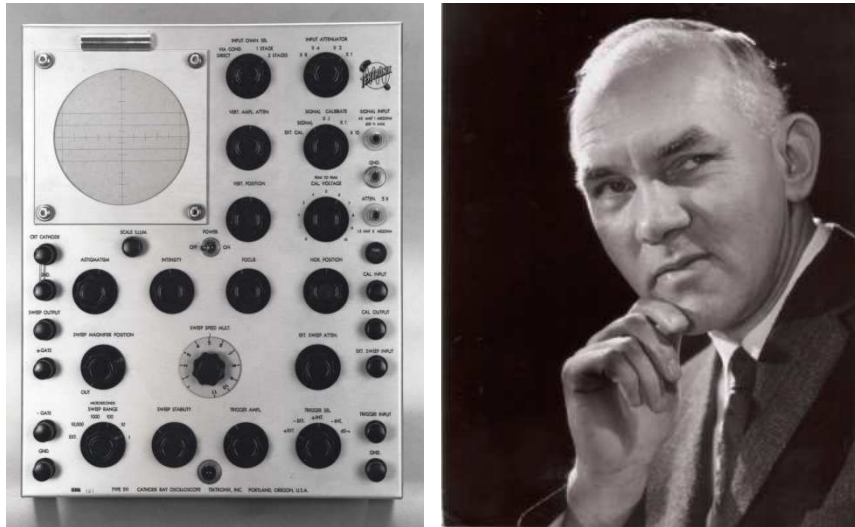


## **Happy 100th Birthday, Charles Howard Vollum!**

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Tektronix 511 Oscilloscope and Charles Howard Vollum (Courtesy VintageTEK)

Charles Howard Vollum was born in Portland, Oregon, on May 31, 1913 and died 27 years ago on February 5, 1986, at age 72. He enrolled at the University of Portland (which was then called Columbia University) in 1931 and completed a two-year program in engineering in 1933. He then transferred to Reed College where he majored in physics, graduating in 1936. Following his graduation, in the midst of the "Great Depression," Vollum worked as a radio technician building, repairing radios until he got inducted into the U.S. Army in 1941 during World War II. Vollum served as an officer in the U.S. Army Signal Corps from 1942 to 1945 serving in England and New Jersey on artillery fire control radar. Vollum's wartime experience gave him the opportunity to study the state-of-the-art technology on Cathode-Ray-Tube (CRT) Displays and to collaborate with other experts in this field.

In 1946 Vollum co-founded a company with Jack Murdock and two others to design, manufacture, and market laboratory oscilloscopes. The company was first named Tekrad, but a month later changed its name to Tektronix (drawn from "technology" and "electronics"), due to a trademark conflict. Tektronix built its first high-performance, low-cost oscilloscope, the 511, using electronic parts purchased from government surplus sales. When released in 1947, the 511 oscilloscope was superior to any oscilloscope on the market. Over a period of forty years, Tektronix became a \$1.5 billion-per-year electronics company with over 20,000 employees. Tektronix engineers built many types of electronic instruments including television monitors and computers. Tektronix instruments are used in a variety of high-tech applications including space technology, biomedical, internet, robotics, and wireless communications. Today, when

you view a web site, click a mouse, make a cell phone call, or turn on a TV you touch the work enabled by Tektronix.

Vollum's technical brilliance combined with his emphasis on quality, performance and innovation played a phenomenal role in turning a small Oregonian company into a recognized world leader in electronics. The success of Tektronix had a significant impact on the growth of Oregon's high-tech industry which later got the nickname, Silicon Forest. Workers with different talents got attracted to the region and innovations achieved at Tektronix served as a seed for many other spin-off firms. By many, Vollum is considered to be the "father" of Silicon Forest.

Vollum was also a philanthropist and made significant contributions to Oregon's education, business and culture. His achievements and contributions to both his profession and community resulted in many honors, such as honorary doctorate degrees from the University of Portland, Lewis and Clark College, Pacific University and Oregon Graduate Center. He was named a Fellow of the Institute of Radio Engineers (IRE) in 1955. In 1973, he received Portland's First Citizen Award, the Morris Leeds Award, and the Howard N. Potts Award. The government of Finland named him First Officer of the First Order of the White Rose in 1982. Vollum received the Institute of Electrical and Electronics Engineers (IEEE) Centennial Medal and Oregon Pioneer Award in 1984 and he and his wife Jean received the 1985 Ecumenical Humanitarian Award from the Ecumenical Ministries of Oregon.

This Friday, May 31st, 2013 marks Vollum's 100th birthday. In his honor, I constructed the following fun numerical brain twisters as a centennial birthday gift for him.

1. If Vollum's 100th birthday is expressed as 5312013, interestingly enough, this number equals  $21 \times 443 \times 571$  where the reverses of these three numbers add up to 531, that is, his birth date, May 31st.
2. The product of the digits of Vollum's full birth date, May 31, 1913, written as 5311913 equals 405 and the reverse of one-third of this number is also 531.
3. If Vollum's birth year 1913 is split in the middle as 19 and 13, one plus the sum of the squares of these two numbers also yields 531.
4. If letters of the English alphabet are assigned numbers 1 to 26 as A = 1, B = 2, etc., the numbers assigned to the letters of "TEKTRONIX" add up to 136. Interestingly enough, the reverse of one less than 136 also equals 531.
5. The numbers assigned to the letters of "CHARLES HOWARD VOLLUM" add up to 230 and the reverse of half of this number yields 511, that is, the model number of the first commercial Tektronix oscilloscope.
6. Vollum died on February 5, 1986, 115 days before his 73rd birthday, where the reverse of 115 is 511. Also, the sum of the digits of 115 times 73 yields 511!

7. In addition, the 115th prime number is 631 and the reverse of 631 is 136, which represents "TEKTRONIX".
8. Vollum's birth date May 31st is the 151st day of each non-leap year where switching the places of the leftmost two digits of 151 yields 511.
9. Also, May 31st happens to be the 215th day of each year if the days are counted backwards (that is, December 31st is counted as one, December 30th is two, etc.) where one less than reverse of 215 again gives 511!
10. The letters of the word "OSCILLOSCOPE" add up to 143, where the 143rd prime number is 823. The reverse of 823 is 328 and interestingly enough, half of this number equals 164, that is, the sum of the numbers assigned to "HOWARD VOLLUM".
11. The reverse of one less than Vollum's birth year is 2191 and this number equals 205 plus 1986, where these two numbers put side-by-side as 2051986 represents Vollum's death date.
12. Vollum's 111st birthday expressed as 5312024 is divisible by 136 (representing "TEKTRONIX").
13. Lastly, Vollum's 222nd palindrome-number birthday to occur in 2135 will be extremely special, why? Its full date will be 5312135, i.e., a truly palindrome day.

Happy 100th birthday, Charles Howard Vollum!