

Harvard Mark III

The **Harvard Mark III**, also known as **ADEC** (for **A**iken **D**ahlgren **E**lectronic **C**alculator) was an early computer that was partially electronic and partially electromechanical. It was built at Harvard University under the supervision of Howard Aiken for the US Navy.

Contents

Technical overview

See also

References

Further reading

External links

Technical overview

The Mark III's word consisted of 16 bits. It used 5,000 vacuum tubes and 1,500 crystal diodes. It weighed 10 short tons (9.1 t).^{[1][2]} It used magnetic drum memory of 4,350 words. Its addition time was 4,400 microseconds and the multiplication time was 13,200 microseconds (times include memory access time). Aiken boasted that the Mark III was the fastest electronic computer in the world.

The Mark III used nine magnetic drums (one of the first computers to do so). One drum could contain 4,000 instructions and has an access time of 4,400 microseconds; thus it was a stored-program computer. The arithmetic unit could access two other drums – one contained 150 words of constants and the other contained 200 words of variables. Both of these drums also had an access time of 4,400 microseconds. This separation of data and instructions is known as the Harvard architecture. There were six other drums that held a total of 4,000 words of data, but the arithmetic unit couldn't access these drums directly. Data had to be transferred between these drums and the drum the arithmetic unit could access via registers implemented by electromechanical relays. This was a bottleneck in the computer and made the access time to data on these drums long – 80,000 microseconds. This was partially compensated for by the fact that twenty words could be transferred on each access.

The Mark III was finished in September 1949 and delivered to the U.S. Naval Proving Ground at the US Navy base at Dahlgren, Virginia in March 1950.^[3] Operational in 1951.^{[4][5]}

See also

- Harvard Mark I
- Harvard Mark II
- Harvard Mark IV
- Howard Aiken
- List of vacuum tube computers

References

1. *Harvard Magazine* (<https://books.google.com/books?hl=en&id=tiEvAAAAMAAJ&dq=Harvard+%22Mark+III%22+tons&focus=searchwithinvolume&q=%22Mark+III%22+ton>). Circulation Department. 1999. p. 81.
2. Magazines, Hearst (November 1949). *Popular Mechanics* (<https://books.google.com/books?id=WdkDAAAAMBAJ&lpg=PA112&dq=Harvard%20%22Mark%20III%22%20tons&hl=en&pg=PA112#v=onepage&q=Harvard%20%22Mark%20III%22%20tons&f=false>). Hearst Magazines. p. 112.
3. "1. Naval Proving Ground Calculators" (<http://www.dtic.mil/docs/citations/AD0694597>). *Digital Computer Newsletter*. **2** (2): 1. 1950-05-01.
4. *The sound of freedom: Naval Weapons Technology at Dahlgren, Virginia 1918-2006* (<https://archive.org/details/soundoffreedomna00dahl>). Government Printing Office. 2006. pp. 96 (<https://archive.org/details/soundoffreedomna00dahl/page/96>)–97. ISBN 9780160872488. "ADEC 1951."
5.
 - "3. Naval Proving Ground Calculators" (<http://www.dtic.mil/docs/citations/AD0694599>). *Digital Computer Newsletter*. **2** (4): 2. December 1950. "The Mark III Calculator has been reassembled and is undergoing tests. It is expected to be in a production status by January 1951."
 - "2. Naval Proving Ground Calculators" (<http://www.dtic.mil/docs/citations/AD0694602>). *Digital Computer Newsletter*. **3** (3): 2. October 1951.

Further reading

- *A History of Computing Technology*, Michael R. Williams, 1997, IEEE Computer Society Press, ISBN 0-8186-7739-2
- Staff of the Computation Laboratory (1952). *Description of a Magnetic Drum Calculator*. Annals of the Computation Laboratory of Harvard University, Vol. XXV. Harvard University Press, Cambridge, Mass.

External links

- BRL report, 1955 - see ADEC (<http://ed-thelen.org/comp-hist/BRL.html#index>)
-

Retrieved from "https://en.wikipedia.org/w/index.php?title=Harvard_Mark_III&oldid=942514524"

This page was last edited on 25 February 2020, at 03:40 (UTC).

Text is available under the [Creative Commons Attribution-ShareAlike License](#); additional terms may apply. By using this site, you agree to the [Terms of Use](#) and [Privacy Policy](#). Wikipedia® is a registered trademark of the [Wikimedia Foundation, Inc.](#), a non-profit organization.