Dec. 17th

Joseph Henry

Born: Dec. 17, 1797;

Albany, New York
Died: May 13, 1878

Henry's work on self-inductance is the reason the unit of electrical inductance is named the henry (or H). He also invented the electromagnetic relay in 1835 (or perhaps in 1837), which became the basis of the electrical telegraph developed by Samuel Morse [Oct 19] and Charles Wheatstone [June 2]. Another possible inventor of the relay is the Englishman Edward Davy, at around the same time.

For most of the second half of the 1800's Henry was America's most renowned scientist, and bronze statues of Henry and Isaac Newton are used to represent science in the main reading room of the Library of Congress.

The room holds 16 statues of historical figures, consisting of eight pairs representing the eight pillars of civilization (i.e. philosophy, art, history, commerce, religion, law, poetry, and science).

Meredith ("Med") Wooldridge Thring

Born: 17 Dec. 1915;

Melbourne, Australia
Died: Sept. 15, 2006

At the University of Sheffield and Queen Mary College, Thring developed a range of novel robots, including one that could climb stairs, a walking tractor, an autonomous fire-fighter, and one for clearing a table.

He was also interested in telechirs – the remote control of robots by humans. A joint study with the National Coal Board showed that telechiric mining could extract coal without miners having to go underground.

Kenneth Eugene Iverson

Born: Dec. 17, 1920;

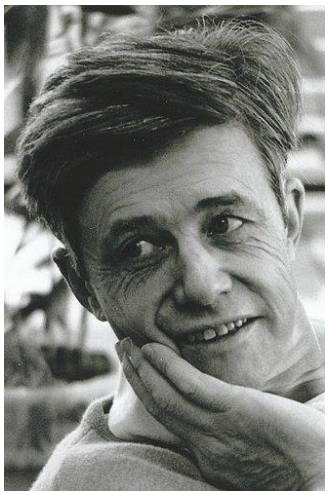
Camrose, Alberta, Canada
Died: Oct. 19, 2004

Iverson is particularly remembered for his development of "A Programming Language" (APL) with Adin D. Falkoff [Dec 19]. His research on a mathematical notation for manipulating arrays is closely related since APL supports a wide variety of functions and operators for acting on arrays.

These operations are written using a non-standard graphical character set, which has led it to being called a "write-only" language. As a taster, the one-liner below implements Conway's [Dec 26] Game of Life, a cellular automaton:

$$life \leftarrow \{\uparrow 1\ \omega \vee .\wedge 3\ 4 = +/,^{-}1\ \emptyset\ 1\circ.\ominus^{-}1\ \emptyset\ 1\circ.\phi\ \subset \omega\}$$

By comparison, a version coded in Java is over 300 lines long.



Kenneth Iverson. Kenneth E. Iverson Estates. CC BY 4.0.

As a consequence, a key APL side-project was the introduction of a dedicated IBM Selectric typewriter typeball [June 31]containing all the APL characters. Indeed, IBM was chiefly responsible for introducing APL to the commercial marketplace, as a programming tool for the IBM System/360 [April 7]. APL ended up being widely used in scientific, financial, and especially actuarial applications.

One of APL's advantages is that it lends itself to parallelism because of its use of arrays.

APL had an important influence on the development of functional programming [April 8], and computer math packages [June 23]. Later versions even supported a more standard character set, to make the language appear less esoteric, and make it more portable.

"He was a natural teacher," said his widow Jean. "He couldn't change a light bulb without showing the kids how it was done."

Herbert Gelernter

Born: Dec.17, 1929;

Brooklyn, NYC
Died: May 28, 2015

Gelernter developed the first large AI program, to prove theorems in plane geometry, based on an idea of Marvin Minsky's [Aug 9] that he'd presented at Dartmouth [June 18]. One of its results: "If the segment joining the midpoints of the diagonals of a trapezoid is extended to intersect a side of the trapezoid, it bisects that side."

As a side-effect, it necessitated the creation of a FORTRAN list processing language (FLPL). When John McCarthy [Sept 4] visited in 1958, he suggested adding conditional expressions and recursion to the language, and Gelernter's reluctance to do this acted as a strong motivation for McCarthy to go it alone, and develop LISP [April 15].

Gelernter also developed the SYNCHEM expert system to help with the synthesis of organic molecules. It probably helped that he possessed undergraduate degrees in mathematics, physics, and chemistry. Nevertheless, as a young man he almost decided to pursue a career as a violinist.

One of his sons, David Gelernter [March 5], is known for his contributions to parallel computation.

Lester Donald Earnest

Born: Dec. 17, 1930;

San Diego, California

Earnest was responsible for developing the first pen-based computer system that reliably recognized cursive writing (1962). The software was called "Curse" apparently because that's what it made Earnest do when it malfunctioned.

He also developed the first spell checker (1961), which was used widely during the 1960's. It utilized a list of 10,000 words taken from "The Teacher's Word Book of 30,000 Words" by Edward Thorndike and Irving Lodge (1944). The spell checker went through several versions until Earnest persuaded his graduate student, Ralph Gorin [Oct 19], to write SPELL in the early 1970's.

In the late 1960's, Earnest created numerous mobile robot systems, including the Stanford Cart [Nov 30]. He also built the first computer-controlled vending machine, the Prancing Pony [July 11], which sold on credit and offered buyers a "Double or nothing" option. His work for the ARPANET committee included the Finger protocol (RFC 742 [April 7]).

When confronted with a problem, Earnest was known for putting his hand to his chin, furrowing his brow, and saying "hmmmm." He later obtained a license plate that read "MUMBLE."

In 1980, he founded Imagen Corp. to market the first Desktop publishing program geared towards laser printer output. This was four years before the appearance of PageMaker [July 15].

Earnest is a long-time bicycle enthusiast, and has served as an official in several cycling associations including the US Cycling Federation. This involved him co-starring with Kevin Costner (for approximately 2 seconds) in the movie "American Flyers" (1985).

As a 12-year old, he was naturally fascinated with cryptography, and devised an ellaborate code that he carried around secreted inside his glasses case. After he lost the case on a streetcar, his mother reported it missing. Meanwhile, someone had found the case and code, and concluded it must belong to a Japanese spy (this was during WWII), turning it over to the FBI.

A few weeks later, two agents showed up at the Earnest's front door demanding an explanation. His mother was able to convince them that her son wasn't an enemy spy. but they nevertheless insisted that the government keep the code.

ASCI Red

Dec. 17, 1996

ASCI Red (aka ASCI Option Red) was built by Intel as part of the US Accelerated Strategic Computing Initiative (ASCI). It was officially switched on at the Sandia National Lab in Albuquerque on this day.

All four rows of ASCI Red (or is that White). Photo by Sandia National Labs.

The system consisted of 9,624 Intel Pentium Pro processors, 2 TB of disc storage, and 600 GB of memory. The processing nodes passed data to each other through message passing.

According to Intel, it was the first supercomputer to be built entirely from commonly available commercial components. It was also the first to score 1.06 TFLOPS (a trillion floating-point operations per second) on the LINPACK benchmarks [Dec 1], and was the world's fastest supercomputer [May 00] until June 2000. Later upgrades took it to 3.1 TFLOPS.

At the time of its decommissioning in 2006, Sandia director Bill Camp said that ASCI Red had the best reliability record of any supercomputer, and "was supercomputing's high-water mark in longevity, price, and performance."

Weblog

Dec. 17, 1997

On his "Robot Wisdom" website, Jorn Barger wrote: "I decided to start my own web page, logging the best stuff I find as I surf on a daily basis."

This statement would later be cited by "The Oxford English Dictionary" as the root of the term "weblog," and Barger is now considered to be the first blogger. (But for the origins of "surf" see [Feb 25].)

However, the short form, "blog," was coined by Peter Merholz, who jokingly broke the word "weblog" into the phrase "we blog" in the sidebar of his Peterme.com website in April or May 1999. However, it was probably the release of the Blogger software on [Aug 23] 1999, which popularized the term.

Although Barger and Merholz coined the names, most historians think that Justin Hall created the first blog post on [Jan 23] 1994.

Yadu Lawsuit

Dec. 17, 1999

The Beijing Number One Intermediate Court in China rejected a lawsuit filed by Microsoft against the Yadu Science and Technology Group which Microsoft accused of using pirated MS Office [Aug 1] and Windows 95 [Aug 24] software.

Law enforcement officers found 37 sets of illegally copied software installed on computers in the building where the company was based. However, these machine officially belonged to the Beijing Yadu Science and Technology Co., a completely separate firm.

Microsoft finally won its first major court battle in China against the use of unlicensed software by Chinese corporations in April 2010; it was awarded $318,000.

Meanwhile the US Business Software Alliance (BSA) had estimated that the financial losses due to Chinese piracy had reached $6.7 billion in 2008. A whopping 80% of the software used in the country was unlicensed, but that figure was actually down from the 90% estimated in 2004.

In Dec. 2011, China announced that its government offices would only be using legitimate software by the end of 2012. In 2014 the government set up special courts to handle IP cases in Beijing, Shanghai, and Guangzhou, with the result that a typical trademark case which had taken four years to be resolved previously was now processed in just over a year.

Windows for Submarines

Dec. 17, 2008

Windows for Submarines, officially known as Submarine Command System Next Generation (SMCS NG), is the programme run by the Royal Navy and BAE Systems to equip the UK's nuclear-propelled and nuclear-armed warship fleet with a MS Windows-based command system.

Four Vanguard-class ballistic missile submarines provide the UK's nuclear deterrent. Each submarine holds up to eight Trident II missiles and a total of 40 nuclear warheads. These deadly systems all run Windows XP [Oct 25], an OS that Microsoft ended security updates for in 2014.

Happily, the UK government has negotiated a Custom Support Agreement with Microsoft so departments and agencies could continue to use the much loved OS without worrying about critical errors being left unpatched.