Feb. 11th

Thomas Alva Edison

National Inventors Day

Born: Feb. 11, 1847;

Milan, Ohio
Died: Oct. 18, 1931

Edison (aka "The Wizard of Menlo Park") was America's most prolific inventor, responsible for (amongst many others) the phonograph [Dec 6], the phonograph doll [April 15], the motion picture camera, the Kinetoscope [May 20], a practical incandescent light bulb, the Sextuplex, the stock ticker [Dec 29], an electronic Ouija board, the alkaline storage battery, a mechanical vote recorder, cockroach and elephant electrocution [Jan 4], wireless "psychic" energy [Dec 29], electrical power distribution, concrete houses, and electric cars.

One of his many innovations was the first industrial research lab, "The Invention Factory" [March 25] in Menlo Park, and hence his nickname, although his first lab was located in the basement of his family's home, set up when he was 10 years old.

Edison's last breath is reportedly contained in a test tube at The Henry Ford museum in Detroit; the museum also possesses one of his hats and a pair of shoes.

Two famous quotes: "Genius is 1 percent inspiration and 99 percent perspiration. As a result, genius is often a talented person who has simply done all of his homework."

"There is no expedient to which a man will not go to avoid the real labor of thinking."

Emil Leon Post

Born: Feb. 11, 1897;

Augustów, Poland; although his family emigrated to the US in 1904.
Died: April 21, 1954

Post was a pioneer in computability theory, most famously developing the Post machine as a model of computation, independently of Turing's better known work [Nov 12]. However, the two approaches turn out to be essentially equivalent, so the design is sometimes called the Post-Turing machine.

Emil Leon Post.

Post also created the tag machine, which utilizes production rules to rewrite input strings. It became the basis for many forms of transformational grammars in linguistics, and is also used for programming languages and rule-based AI. As in the case of the Turing machine, this approach is often solely credited to someone else , Noam Chomsky [Dec 7], who probably knew of Post's work.

Continuing the theme: Post also developed work similar to Kurt Gödel's [April 28] theorems on incompleteness. Most of Post's discoveries were made in 1920-21, a decade or more before those of Gödel, Alonzo Church [June 14], Turing, and others. However, Post didn't get around to publishing his ideas until after these authors had caught up. Part of the reason was his recurring problems with manic-depression.

As a child, Post wanted to study astronomy, but lost his left arm in a car accident. This discouraged him, and he became interested in mathematics instead.

Richard Wesley Hamming

Born: Feb. 11, 1915;

Chicago, Illinois
Died: Jan. 7, 1998

Hamming is renowned for his 1947 invention of error-detecting and correcting codes, known as Hamming codes. Such a code can find and correct a single error in a stretch of data, or find two errors and correct one of them. His classic paper on the topic, which appeared in the *Bell System Technical Journal* in April 1950, created the field of coding theory.

The work was inspired in part by his frustration with the Bell Model V, an electromechanical relay-based machine, with cycle times in seconds, that he was forced to use in the 1940's. It could detect errors in its punched tape input, but responded by simply stopping.

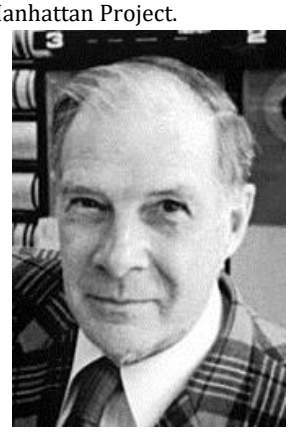
In an interview, Hamming remembered thinking, "Damn it, if the machine can detect an error, why can't it locate the position of the error and correct it?".

At the time he shared an office at Bell Labs with Claude Shannon [April 30], and was part of the Math Research Department which also included John Tukey [June 16] and Manhattan Project veterans Donald Ling and Brockway McMillan. Shannon, Ling, McMillan and Hamming were known as the "Young Turks". "We were first-class troublemakers," Hamming recalled.

Hamming is responsible for several other important concepts in computing, all of which conveniently bear his name: the Hamming window,

Hamming numbers, the Hamming bound, and the Hamming distance.

His first involvement with large-scale computing came at the end of WWII, as a computing maintenance man – a computer janitor, he called it – for the Manhattan Project.



Richard Hamming. (c) Bell Labs.

Unlike most other awards named after pioneers, the very first IEEE "Richard W. Hamming Medal" was deservedly awarded to Hamming himself in 1988.

Two quotes: "The purpose of computing is insight, not numbers."

"Typing is no substitute for thinking."

Andrew Donald Booth

Born: Feb. 11, 1918;

Weybridge, UK
Died: Nov. 29, 2009

Booth invented one of the earliest magnetic drum stores. A small brass drum, two inches long and two inches wide, coated with nickel, making it capable of holding 10 bits per square inch. In total it could store 256 words of 21 bits, and was first used in Booth's ARC computer in 1948.

Incidentally, the first magnetic drum was due to Gustav Tauschek [April 29], who patented his ideas back in 1932.

Booth also got very close to creating the first floppy disk. Unfortunately he experimented with "Mail-a-Voice" discs which were made of paper coated with magnetic oxide, and used in early dictating machines. They proved a little too floppy, deforming at the necessary rotation speeds of 3000 RPM. However, this failure led to his interest in drum storage.

In 1947, along with his collaborator and future spouse Kathleen Britten, he spent six months with von Neumann's [Dec 28] team at Princeton [June 10], which inspired him to start building stored-program computers for himself.

After returning to the UK, he developed three machines: the ARC (Automatic Relay Computer; 1947-49), the SEC (Simple Electronic Computer), and the APE(X)C (All Purpose Electronic (Sponsors name) Computer). Unlike many other hardware pioneers, he rejected the use of the Selectron tube [Aug 10] for storage as being too expensive and unreliable.

The first APEXC was built in a barn at Booth's home in Fenny Compton, Warwickshire. A visitor from British Tabulating Machine Company (BTM) [Feb 18], Raymond "Dickie" Bird, had clear memories of the place: "The barn was falling to bits. It was so rotten that the legs of the chairs we sat on sank in to the woodworm-eaten floor, and it was as cold as hell." Nevertheless, the BTM team used Booth's design to create the Hollerith Electronic Computer 1 (HEC 1 [June 16]) at the end of 1951.

Booth and his father later set up a small factory (Wharf Engineering Co.) to produce magnetic drums, and it probably ended up making more than any other company in the world, largely for export to the US. It continued in operation until Booth left England in 1962.

Armas Clifford "Mike" Markkula Jr.

Born: Feb. 11, 1942;

Los Angeles, California

Formerly of Fairchild Semiconductor [March 12] and Intel [July 18], Markkula came out of 'retirement' (at the advanced age of 35) to become Apple's first chairman in 1977. He supplied what *The New York Times* later described as "adult supervision" for Steve Jobs [Feb 24] and Steve Wozniak [Aug 11].

Jobs was put in touch with Markkula by the astute venture capitalist Don Valentine, who decided that Jobs was a "renegade from the human race," and declined to invest in Apple himself.

Markkula usually met with would-be entrepreneurs every Monday. On one of those days in Nov. 1976, he visited Jobs and Wozniak in Jobs' parents garage. Another version of the story has Jobs attending Markkula in his office.

Markkula helped Jobs write a business plan for the Apple II [June 5] which predicted sales of $500 million in ten years. He also invested $92,000 of his own money in the company to secure a $250,000 line of credit from Bank of America to finance the plan. He became a one-third owner of Apple.

Markkula is often called the third man at Apple, but that honor belongs to Ronald Wayne [May 17], who was the third founder, albeit for only 12 days.

Also, employee numbers were introduced by Scott when he joined the company, with him choosing #7 for himself, a reference to James Bond [May 22]. Wozniak was #1 and Jobs #2.

Markkula brought in Michael "Scotty" Scott as the first Apple president and CEO, and took the job himself from 1981 to 1983. He was also responsible for approving Jef Raskin's [March 9]

Sept. 1979 plan to start designing what (after many changes) became the Macintosh [Jan 24]. In addition, he prevented Jobs from killing the project in favor of his Lisa [Jan 19].

In 1985 Markkula took John Sculley's [April 6] side in a dispute with Jobs, causing the latter to leave the company [Sept 16], but helped force Sculley out [Oct 15] in 1993. Markkula retired from Apple after Jobs returned as interim CEO on [Sept 16] 1996.

IBM 1130 Launched

Feb. 11, 1965

The 1130 was IBM's least-expensive computer to date (it could be rented for less than $1,000 a month), and was specifically marketed to educational institutions. It replaced the earlier, Dijkstra-disparaged, IBM 1620 [Oct 21].

The advertising emphasized the machine's user friendliness, with an easy-to-use OS (the Disk Monitor System), and an extensive collection of scientific software: more than 250 applications collected together in 13 packages.

The system supported removable disk cartridges and a wide variety of I/O devices, including a vector graphics display, a color pen plotter, an optical mark reader, and IBM's cheapest line printer.

An IBM 1130 with numerous peripherals. Photo by Wolfgang Stief. CC BY 2.0.

The desk-sized computer was designed for individual use, but it could also be employed as a workstation connected to a System/360 mainframe [April 7].

The "360" link has been suggested as one reason why the computer was numbered "1130" –it's 360 multiplied by π [March 14], with the result being truncated. Not rounded, since that would give 1131.

Many notable computer scientists began their careers on a 1130, including Grady Booch [Feb 27], Alan Kay [May 17], Guy Steele [Oct 2], and Dan Bricklin [July 16].

The Forth language was so named because the 1130 on which it was implemented restricted file names to five characters, so FOURTH was out of the question [Nov 13].

The success of the 1130 may explain why there was never a PDP-11/30 [Jan 5]. The rumor is that the PDP-11/20 was originally assigned that name.

Cromemco Cyclops

Feb. 11 1975

The Cyclops Camera was the first commercial digital camera for a microcomputer. It was developed by Terry Walker, Harry Garland, and Roger Melen, and their design first appeared as a hobbyist project in the Feb. issue of *Popular Electronics*. One month earlier the MITS Altair [Dec 19] had been introduced in the same magazine.

The camera's sensor was a modified MOS 1K chip, with its opaque cover replaced by glass. Light shining on the exposed grid of memory cells would cause their contents to change to 0s, thereby recording the image. It was a clever approach but only offered a resolution of 32 × 32 pixels.

Garland and Melen founded Cromemco [Dec 11] to build Altair add-ons and other devices. On this day they received Altair computer #0002, which allowed Walker to start interfacing their camera design to the machine. The company released the Cromemco Cyclops as their first Altair peripheral in Jan. 1976, nearly a year later.

4 Computer Buffs

Feb. 11, 1985

Channel 4 TV in the UK began airing the programme '4 Computer Buffs' in which data was transmitted to the viewers via a pulsating patch displayed in the bottom right of the TV screen. The encoding used two brightness levels corresponding to 0 and 1.

A user had to attach a photoreceptor (a modified light pen) to their screen, linked to the computer via a small interface board.

The idea was developed by Mike Thorne of University College Cardiff. who was also one of the show's presenters. A video of Thorne explaining how to build the receiver can be found on YouTube. One drawback was the slow transmission rate: a 2 or 3 KB program could take 15 minutes to be delivered.

A more commonly used approach at the time was to transmit software as audio, as pioneered by Hobbyscoop [Aug 00].

Anna Kournikova

Feb. 11, 2001

The Anna Kournikova virus aimed to trick users into opening an email message purportedly containing a picture of the tennis player Anna Kournikova. It actually held a Visual Basic Script (VBS) that forwarded itself to everybody in the MS Outlook address book on the machine.

The virus was created using the widely available Visual Basic Worm Generator (VBSWG), and was quite similar to the ILOVEYOU worm that appeared on [May 5] 2000.

Anna Kournikova (2009). Photo by Felicia Juenke.

A 20-year old Dutch "script kiddie" was arrested a few days later and sentenced to 150 hours of community service. He came from the town of Sneek.

In the Friends episode, "The One in Barbados, Part One" (2002), Ross Geller's laptop is infected by the Kournikova virus. The episode's version is nastier than the real virus, as it deletes Ross' entire hard drive. Moreover, his computer was a PowerBook G4, so would have been unaffected by the Windows virus.

The Agile Manifesto

Feb. 11-13, 2001

At "The Lodge" located in the exclusive Snowbird ski resort in the picturesque Wasatch mountains of Utah, seventeen programming luminaries, including Kent Beck [March 31], Ward Cunningham [May 26], Robert C. Martin, and Martin Fowler, met to devise an alternative to documentation driven, heavyweight software development processes.

United in a determined search for principles that would underpin a broad range of frameworks based around iterative and incremental development, the "Agile Software Development Manifesto" emerged.

While there is much anecdotal evidence that agile practices improve the effectiveness of software professionals, teams and organizations, empirical evidence has proved hard to find.

At the time of the meeting, the main concern came from Fowler (a British citizen) who believed that most Americans didn't know how to pronounce the word 'agile'.

In 2014, Dave Thomas, one of the manifesto signatory, wrote:

"Once the Manifesto became popular, the word agile became a magnet for anyone with points to espouse, hours to bill, or products to sell. It became a marketing term."

Nuclear Passcodes

Feb. 11, 2004

Bruce G. Blair, a former US Air Force officer who manned Minuteman [Nov 17; Aug 5] silos, wrote an article revealing that from 1962 to 1977, all the Minuteman nuclear missiles in the US used the same eight-digit numeric passcode to enable their warheads: 00000000.

US Strategic Command generals had the code set to 00000000 to ensure that the missiles were ready for use regardless of whether the President was available to give the authorization.

Blair stated that that the code was known to all the crews manning the silos. "Our launch checklist in fact instructed us, the firing crew, to double-check the locking panel in our underground launch bunker to ensure that no digits other than zero had been inadvertently dialed into the panel,"

Blair later founded "Global Zero" – a movement that urges the total elimination of nuclear weapons.

Ten years later (in 2014), officials from the Pentagon denied to Congress that it had ever set a nuclear missile launch code to 00000000.

Podcasting Named

Feb. 11, 2004

Ben Hammersley wrote a column for *The Guardian* newspaper called "Audible revolution" describing a boom in amateur radio on the Internet. He proposed three terms for the new kinds of shows: Audioblogging, Podcasting, and GuerillaMedia. This article was the first known publication of the term "podcasting".

Hammersley later admitted that he's made up the name to pad out the piece. It was a portmanteau of "iPod" and "broadcasting".

Hammersley was at one time the UK Prime Minister's ambassador to Tech City, London's Internet Quarter, also known as Silicon Roundabout [Jan 11].