Oct. 1st

Andrew H. Bobeck

Born: Oct. 1, 1926;

Tower Hill, Pennsylvania
Died: Dec. 14, 2017

Bobeck invented twistor memory in the 1950s, and bubble memory in the 1960s. Both were breakthroughs in memory design, but both were quickly supplanted by other technologies.

Twistor memory was similar to core memory, but replaced its circular magnets with magnetic tape. Unlike core memory, twistor production could be automated, which meant large cost reductions. However, the arrival of semiconductor memory proved its undoing.

Bubble memory used a thin film to hold small magnetized areas, known as bubbles, each capable of storing one bit of data. It offered comparable memory densities to hard drives, without the need for moving parts, and with enhanced performance comparable to core memory. Semiconductor memory also affected its commercial uptake, but the development of flash memory [Dec 20] finished it off.

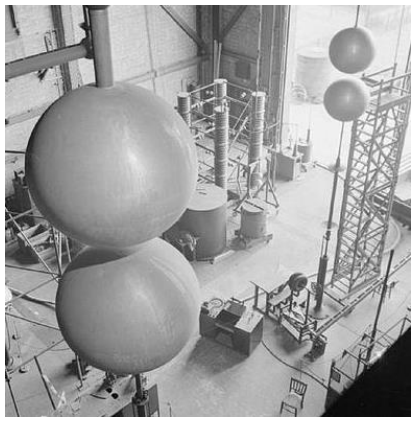
Turing at the NPL

Oct. 1, 1945

John Womersley [June 20] had persuaded Alan Turing [June 23] to become Senior Scientific Officer in the Mathematics Division of the National Physical Lab (NPL), which commenced on this day.

Three months later, Turing finished his first report, entitled "Proposed electronic calculator", which became the second substantially complete description of a practical stored-program computer. (The first being the EDVAC engineering report [Sept 30] by Eckert and Mauchly.)

Turing estimated his device would cost £11,200 to build, and take about a year to complete. Both of these estimates proved to be wildly optimistic.



The Electricity Division of the NPL (1944). Photograph D 22641 from the Imperial War Museums Collection.

Womersley named Turing's computer the ACE: the Automatic Computing Engine. The word 'engine' was a deliberate call back to Babbage's Analytical Engine [Dec 23].

Unfortunately, Turing continually modified his design [Feb 19] during 1946, and indeed wrote to a friend: "In working on the ACE I am more interested in the possibility of producing models of the brain than in the practical applications to computing."

The design didn't stabilize until Jan. 1947 when Harry Huskey [Jan 19] joined Turing's group. Huskey persuaded Womersley to build a prototype called the 'Test Assembly', but in September, Charles Galton Darwin – the Head of NPL – decided that work should stop, given the lack of progress.

In response, Turing took a year's sabbatical at Cambridge, and part way through accepted a position at the University of Manchester [June 16], leaving NPL permanently.

A prototype ACE, the Pilot ACE, was eventually completed on [May 10] 1950.

RAND Founded

Oct. 1, 1945

RAND (Research ANd Development) was set up by the US government under special contract with the Douglas Aircraft Company to help guide the development of military weapons.

The push to run the project as a separate organization grew, and on Nov. 1, 1948, the contract was transferred to the newly created RAND Corporation.

Thereafter, RAND expanded to inform US policy on multiple issues, such as the space race, nuclear arms, social welfare, and health care. Notable among the organization's computing contributions was its role in Paul Baran's [April 29] development of packet switching for the ARPANET. Other early hardware related work included the JOHNNIAC [Feb 00], JOSS [May 00], videographic terminals [Aug 00], and the RAND tablet [Aug 00]. Its involvement in programming included the simplex method [Nov 8], dynamic programming, IPL [Feb 26], and simulation languages (e.g., SIMSCRIPT [July 17]). This part of RAND, the System Development Division, eventually grew to be larger than the rest of RAND put together, and was split off in [Oct 00] 1956.

RAND has no connection to the Remington Rand Company [Jan 25].

Texas Instruments

Oct. 1, 1953

Geophysical Service Inc. (GSI) was founded on May 16, 1930 to hunt for oil and gas using seismic signal processing. In 1951, GSI changed its name to Texas Instruments (TI), and on this day its stock was listed on the NYSE. In 1954, the company jumpstarted the semiconductor industry by releasing the first commercial silicon transistor [May 10], followed by the first integrated circuit on [Sept 12]

1958. TI also produced the first transistor radio [Oct 18], the first prototype handheld pocket calculator [Sept 29], and the first handheld scientific calculator [Jan 4]. It marketed the first single-chip 4-bit microcontroller, the TMS 1000 [Dec 2] in 1974, and the first single-chip 16-bit microprocessor in [June 00] 1976. The company's speech chip [June 11] enabled toys such as its Speak & Spell to talk.

Fairchild

Oct. 1, 1957

Fairchild Semiconductor was founded by eight former Shockley Semiconductor [Feb 13] scientists, sometimes known (unfairly) as the "Traitorous Eight" [Sept 18]: Gordon E. Moore [Jan 3], C. Sheldon Roberts, Eugene Kleiner [May 12], Robert N. Noyce [Dec 12], Victor H. Grinich, Julius Blank, Jean A. Hoerni [Sept 26], and Jay T. Last (who must therefore be listed last). The company was named after Sherman Fairchild, founder of Fairchild Aircraft and Fairchild Camera, who provided a startup loan of $1.38 million.

On Dec. 8, 1957, the fledgling company moved out of Grinich's garage at 615 Georgia Avenue, Palo Alto into a new building at 844 East Charleston Road, which has since been designated a California Historical Landmark (no. 1000).

844 East Charleston Road, Palo Alto (2006). Photo by Dicklyon.

Fairchild became profitable within just six months, with the help of its first sale to IBM of 100 transistors, at $150 a piece. The order was shipped out in a Brillo Pad carton picked up from a local supermarket

The company's main goal was to develop a new method for cheaply mass-producing silicon transistors, with Moore, Hoerni, and Last leading three teams working on alternative approaches. Moore's research resulted in the highest yield of operational transistors, and in July-September 1958, his process went into production.

In 1961, Fairchild marketed the first commercial integrated circuit [Sept 27], and in 1967 introduced the first ALU implemented as a chip, the 8-bit Fairchild 3800.

In March 1968, Moore and Noyce left Fairchild to found NM Electronics (later known as Intel [July 18]). Indeed, Fairchild alumni have been credited with the creation of dozens of corporations (often known as "Fairchildren"). A 1980 survey of over 100 large Silicon Valley firms found that almost all of them had links to Fairchild.

Intergalactic Networks

Oct. 1, 1962

After J.C.R. Licklider [March 11] was appointed the first director of DARPA's Information Processing Techniques Office (IPTO) on this day [Feb 7], he focused on three goals: the creation of computer science departments at universities, the promotion of time-sharing computing, and research on networking.

One way that he encouraged network development was through a series of memos, some of which were addressed to "Members and Affiliates of the Intergalactic Computer Network" [April 25]. A practical goal was to interconnect the DoD's computers at the Pentagon, Cheyenne Mountain, and the Strategic Air Command.

Even after Licklider had left the IPTO in 1964, Ivan Sutherland [May 16] and Bob Taylor [Feb 10] carried on promoting network research, and it was Licklider's focus that inspired the formation of the ARPANET [July 29] in the late 1960's, and so the Internet [Oct 29].

Boole & Babbage

Oct. 1, 1967

The company "Boole & Babbage" was founded by neither Boole [Nov 2] nor Babbage [Dec 26], but by Ken Lolence and David Katch , and was called K&K Associates until this day, so that each founder could claim that their name came first.

The renamed B&B became the first software products company in Silicon Valley when it started selling software for the IBM System/360 [April 7], and was also the first to wrangle venture capital funding.

The company's first inhouse product was the "Problem Program Evaluator" which reported on the timing hotspots in code. The second was the "Configuration Utilization Evaluator", which analyzed the communication times between peripherals and their mainframe.

First CT Scan

Oct. 1, 1971

Godfrey Newbold Hounsfield and Allan McLeod Cormack won the 1979 Nobel Prize in medicine for developing X-ray computerized tomography (CT). A CT scan combines computer-processed X-ray measurements taken from different angles to produce a single cross-sectional image of a scanned object.

The first commercial CT scanner was built by Hounsfield at the EMI Central Research Lab in the UK, and performed its first brain-scan at the Atkinson Morley Hospital in Wimbledon on this day. Acquiring the data took about 4 minutes, and image construction (using a Data General Nova [April 15])

another 7 minutes. Even so, the resulting image resolution was quite low, consisting of just 80 × 80 pixels.

Both the lab and Hounsfield's research was funded by the EMI Group, *The Beatles*' record company [Oct 8].

NAG Library Released

Oct. 1, 1971

The NAG (Numerical Algorithms Group) library is a collection of over 1,900 mathematical and statistical algorithms, covering areas such as linear algebra, differential equations, and time series analysis. But the first version, released today, contained a mere 90 routines, coded in a mix of ALGOL 60 [Jan 11] and Fortran [Dec 00].

NAG originally stood for the Nottingham Algorithms Group, which had been founded by Brian Ford and others in 1970 as a collaboration between the universities in Birmingham, Leeds, Manchester, Nottingham, Oxford, and the Atlas Computer Lab [Dec 7]. In 1973, the project moved to Oxford, where "Nottingham" became "Numerical".

The First CD Player

Oct. 1, 1982

Sony launched the CDP-101 in Japan, making it the first consumer CD player. At the time, just 130 albums were available on CD, with "52nd Street" by Billy Joel the first one issued. Also, due to delays at Philips, Sony's partner [Aug 17], it was another 7 months before the player arrived in the US.

Nevertheless, even at prices ranging from $700 to $1,000, Sony sold over 20,000 players by year's end, and the company couldn't keep up with the demand for disks, which cost $15 - 20 each.

The Sony CDP-101. Photo by Atreyu. CC BY 3.0.

GEnie

Oct. 1, 1985

GEnie (General Electric Network for Information Exchange) was an online service founded by Bill Louden, which ran from 1985 until the end of 1999. It grew into the first serious commercial competitor for the giant CompuServe [Sept 24], perhaps because Louden had been CompuServe's product manager for computing.

In particular, GEnie gained a reputation for excellent online games and active online forums (known as RoundTables). For example, the Science Fiction RoundTable became the official forum for the Science Fiction Writers of America.

However, GEnie's popularity began declining when it failed to keep up with the graphics-based online services offered by Prodigy [Feb 13] and AOL [Oct 2].

W3C

Oct. 1, 1994

The World Wide Web Consortium (W3C) is the main standards organization for Web formats such as XML [Feb 10], HTML 4.01 [Dec 24], HTML 5 [Oct 28], PNG [Oct 1], and Cascading Style Sheets [Oct 10].

It was founded on this day by Tim Berners-Lee [June 8] at MIT with support from the European Commission, CERN (Berners-Lee's old boss [June 23]) and DARPA [Feb 7]. The first meeting was held on Dec. 14, 1994. As of October 2020, it had 439 members.

Things have not always run smoothly in the organization. On [June 2] 2004, the breakaway WHATWG was founded in response to the W3C's change of focus towards XML. Current criticism is centered on its plan to add DRM-specific Encrypted Media Extensions (EME) to HTML 5. This led to the Electronic Frontier Foundation's [July 10] resignation from the consortium in Sept. 2017.

Visual J++ Released

Oct. 1, 1996

Microsoft Visual J++ was a Java [May 23] development environment that 'extended' the capabilities of Java on Windows 95 [Aug 24] and NT by allowing applets to use ActiveX components. More controversially, Microsoft also left out some features present in the official Java implementation, including the Java Native Interface (JNI). Instead of JNI, Microsoft's new J/Direct allowed J++ applications to circumvent Java's class libraries to access Windows directly. This made J++ code more efficient than ordinary Java using JNI, but broke Java's specification.

Sun Microsystems [Feb 24] (then owners of Java) initiated litigation against Microsoft for trademark violation on [Oct 7], 1997 based on the fact that Sun's license for Java insisted that all implementations be "compatible". On Jan. 23, 2001, this and other Sun/Microsoft lawsuits were settled with Microsoft agreeing to pay Sun $20 million and to phase out products that included J++.

Microsoft discontinued support of J++ in Jan. 2004, replacing it with the totally different J#

(which was itself axed in 2007) and later C# [July 15] (which is still alive).

PNG

Oct. 1, 1996

Portable Network Graphics (PNG) is a raster graphics file format that supports lossless data compression. Version 1.0 of its specification was released on this day.

PNG's creation was triggered when the Lempel-Ziv-Welch (LZW) data compression algorithm used in the aging Graphics Interchange Format (GIF) [June 15] was patented by Unisys on [Dec 24] 1994. Additionally, there were other problems with the GIF format that made a replacement desirable, notably its limit of 256 colors when computers able to display far more were becoming common.

The format's name was due to Oliver Fromme, author of the DOS JPEG viewer QPEG, who proposed "PING" (standing for "PING is not GIF") during a Jan. 1995 discussion in the "comp.graphics" USENET newsgroup.

Happily, GIF was freed from its patent servitude on [June 20] 2003.

4chan

Oct. 1, 2003

From his bedroom command post, Christopher "moot" Poole launched 4chan.net as an American sister-site to the Japanese image-posting 2chan.net.

4chan was originally split into six categories: Japanese culture, interests, creative, Adult (18+), other, and misc (18+). Crucially for its popularity (and notoriety), 4chan didn't use a registration system, allowing its gregarious users to post anonymously. As a result, 4chan provided fertile ground for the growth of lolcats [June 14], Rickrolling [Nov 16], Pedobear, and more.

A typical incident in 2012 saw 4chan users attack a *Mountain Dew* campaign which had asked people to submit name ideas for a new green apple flavor of the drink. 4chan entries included "Diabeetus", several variations of "Gushing Granny", and "Hitler did nothing wrong".

On Jan. 21, 2015, "moot" stepped down as the site's administrator, citing stress from controversies such as Gamergate. He joined Google the next year, starting in its social media arm but eventually taking a role in Google Maps [Feb 8] after Google Plus [June 28] was shuttered in 2018.

IARPA Begins

Oct. 1, 2007

IARPA (Intelligence Advanced Research Projects Activity; or "yarpa") is modeled after DARPA [Feb 7] but focuses on national intelligence needs. Despite this, most IARPA research is openly published.

In 2013, *The New York Times* columnist David Brooks called IARPA "one of the government's most creative agencies." Renaissance men attracted to the organization included former director, Jason Gaverick Matheny, an agricultural biotechnologist and art history major.

In the late 2000's, IARPA provided a significant portion of the funding for research on quantum computing. It has also been involved in neuromorphic computation as part of the BRAIN Initiative. Its MICrONS project seeks to reverse-engineer one cubic millimeter of brain tissue to gain insights for improving machine learning.

The Social Network

Oct. 1, 2010

Columbia Pictures released "The Social Network", directed by David Fincher and adapted by Aaron Sorkin from the 2009 book "The Accidental Billionaires: The Founding of Facebook, A Tale of Sex, Money, Genius, and Betrayal" by Ben Mezrich.

The film portrays the founding of Facebook [Feb 4] and the ensuing lawsuits. It stars Jesse Eisenberg as Mark Zuckerberg [May 14].

Zuckerberg stated that the film inaccurately portrayed his motivations for creating Facebook. According to the youthful CEO, it wasn't at all about an effort to "get girls", but because of his wholesome enjoyment of "building things." However, Zuckerberg did admit that the filmmakers got his clothes right.

Mark Zuckerberg (2005). Photo by Elaine Chan and Priscilla Chan. CC BY 2.5.

Facebook co-founder Dustin Moskovitz remarked: "A lot of exciting things happened in 2004, but mostly we just worked a lot and stressed out about things; the version in the trailer seems a lot more exciting."