May 2nd

Herman Lukoff

Born: May 2, 1923;

Philadelphia, Pennsylvania
Died: Sept. 24, 1979

While still a student, Lukoff designed equipment to test components used in the ENIAC [Feb 15]. Later he helped develop innovative circuitry to control the mercury delay line storage [Oct 31] used in the EDVAC.

He followed the ENIAC co-inventors, J. Presper Eckert [April 9] and John Mauchly [Aug 30], to EMCC [Dec 8], and assisted them with the UNIVAC I [March 31]. Lukoff designed its I/O controls, and supervised the manufacture, testing, and installation of the first dozen UNIVACs.

In 1955, Sperry Univac put Lukoff in charge of the team building the UNIVAC LARC (Livermore Automatic Research Computer) [March 00].

His book "From Dits to Bits: A Personal History of the Electronic Computer" (1979) describes his career, with the title referring to how his interest in the Morse code dits [Oct 19] led to his working on computers.

Counting on the Thyratron

May 2, 1932

Charles Eryl Wynn-Williams published a paper in the *Proceedings of the Royal Society* on how thyratron tubes could be used as a high-speed binary electronic counter.

A thyratron is a type of gas-filled tube used as a high-power electrical switch, similar to a vacuum tube, but able to handle much larger currents. Similar devices (also with great names) are the krytron, the sprytron, and the ignitron.

The device was originally intended to be used in particle physics to count the observed particles at higher rates than previously possible.

During WWII, Wynn-Williams worked at Bletchley Park [Aug 15] on developing a high-speed bombe [March 18], dubbed the Cobra. However, because of his previous work in electronics, he was reassigned to a team at the Post Office Research Station at Dollis Hill that was building the Heath Robinson [June 1]. The Robinson was the forerunner of the Colossus machines [Jan 18].

Samuel Frederick Dabney Jr.

Born: May 2, 1937;

San Francisco, California
Died: May 26, 2018

Dabney was the co-founder, alongside Nolan Bushnell [Feb 5], of Atari [June 27], and developed the video circuitry used in "Computer Space" and Pong [Nov 29].

Dabney met Bushnell at the electronics company Ampex in 1969 when they were working on early video disk products.

For "Computer Space", Dabney built a motion system made up of analog and digital components salvaged from a standard TV set. Not only was this much cheaper than buying a computer (e.g. the comparable "Spacewar! [May 17] relied on a PDP-1), it also meant that "Computer Space" could be housed in a relatively small cabinet that could be slid in next to pinball machines in bars. Bushnell designed the case and worked with Nutting Associates to manufacture the game at scale.

Later, a new Atari employee, Al Alcorn [Jan 1], reused Dabney's motion circuit ideas to implement Pong. Dabney meanwhile constructed the coin slot mechanism portion of the cabinet.

Some sources state that Alcorn extended Dabney's work, creating his own logic designs. For instance, he added features to vary the ball's angle of return from a paddle.

When Dabney learnt that Bushnell had patented his motion circuit work (as US 3793483: "Video Image Positioning Control System For Amusement Device") without including him, he left the company in March 1973, selling his share to Bushnell. However, Dabney continued to help Bushnell out with his Pizza Time Theater (the predecessor of his "Chuck E. Cheese" restaurant chain).

After leaving the computer industry, Dabney and wife managed the "Mountain Market" grocery store in Crescent Mills, California.

Computer Space videogame. Photo by Carlo Nardone. CC BY-SA 2.0

In 2009, he gave an interview where he noted, "I'm sure [Bushnell] had no desire to even acknowledge that I ever existed" and "He wouldn't give me any credit even while I was still there".

A-0 and Beyond

May 2, 1952

The A-0 system (Arithmetic Language version 0) written by Grace Hopper [Dec 9] in 1951

and 1952 for the UNIVAC I [March 31] was probably the first compiler, although it functioned more as a loader and linker.

An A-0 program was specified as a sequence of subroutines and their arguments. The system read the sequence, copied the corresponding machine code subroutines into the program, and adjusted any address offsets so the code would work as a single entity.

On this day, Hopper gave a talk about A-0 at an ACM national meeting in Pittsburgh, but it took some time for the usefulness of the compiler idea to be accepted.

"I had a running compiler," recalled Hopper," and nobody would touch it because, they carefully told me, computers could only do arithmetic; they could not do programs."

Hopper followed the A-0 by the A-1, A-2 (which became quite popular), A-3 (released as ARITH-MATIC), AT-3 (released as MATH-MATIC in 1957) and B-0 (released as FLOW-MATIC, also in 1957).

The letter change to "B" was to indicate that FLOW-MATIC was aimed at business rather than arithmetic. Enquiring minds must also wonder if the name change was also influenced by the other meaning of B.O?

Other possibilities for the first compiler are Alick Glennie's Autocode [Dec 14], the Laning and Zierler system [Jan 00] and IBM Speedcoding [Sept 9].

Although A-0 had a compiler, it wasn't the first high-level language, which is usually deemed to be John Mauchly's Short Code [July 00].

Dave Winer

Born: May 2, 1955;

Queens, New York City

Winer is noted for his contributions to weblogs, podcasting, outlining, and web content management.

He released the first popular word processing outliner, called ThinkTank, for the Apple II [June 5] in 1983, although it was promoted more grandly as an "idea processor."

While working as a columnist for HotWired [Oct 27] in Feb. 1996, Winer organized the "24 Hours of Democracy" event, an online protest against the recently passed Communications Decency Act [Feb 8].

Winer's "Scripting News" was launched in Feb. 1997, and has been described as one of the oldest blogs, and so naturally earnt him titles such as "protoblogger" and "forefather of blogging". However, most historians think Justin Hall created the first blog [Jan 23].

Winer is credited with the invention of the podcasting model when he added the "enclosure" element to RSS 0.92 [March 15] to hold the address of a media file. He first demoed the feature on Jan. 11, 2001 by adding the Grateful Dead song "Touch of Grey" to his "Scripting News" weblog. This is considered by many to be the first ever podcast [Aug 13].

Odyssey on Tour

May 2, 1972

Magnavox kicked off a national promotional tour, the Magnavox Profit Caravan, to promote the Odyssey, the first commercial home video game console. The device went on sale in Sept., selling between 69,000 and 100,000 units by year's end.

Ralph Baer [March 8] had the idea for a console in Aug. 1966, and over the next three years Baer, Bill Harrison, and Bill Rusch built several prototypes. The seventh, known as the Brown Box, was shown to a few potential manufacturers before Magnavox agreed to produce it in Jan. 1971. The machine utilized around 40 transistors and 40 diodes.

The Odyssey was only capable of displaying three moving objects at once, but was sold with colored plastic overlays to place on the TV screen, thereby creating different play areas. Magnavox also included an assortment of board game accessories, like dice and play money, which Baer thought were pointless. The games themselves were implemented on plug-in printed circuit boards.

The Magnavox Odyssey.

One important change to Baer's original design was the removal of support for color, which reduced the manufacturing costs, and meant a standard B&W TV would be sufficient for game play.

One of the console's original 28 games, Tennis, became an inspiration for Atari's Pong [Nov 29]. On [May 24], Atari's Nolan Bushnell [Feb 5] played Tennis at the Magnavox Profit Caravan when it stopped in Burlingame, California.

Trenton Computer Festival

May 2, 1976

Allen Katz, Sol Libes, and the ACGNJ [June 13] organized the first Trenton Computer Festival (TCF) – the first ever personal computer show. It featured about 45 exhibitors, including MITS [Dec 19], IMSAI [Dec 16], Processor Technology [Aug 28], OSI [May 2], SWTPC [Nov 00], and Cromemco [Dec 11], and attracted an estimated 1500

people, with some coming from California, Florida, and Canada.

The second festival in 1977 was substantially bigger – more exhibitors, and with John Mauchly [Feb 15] as the keynote speaker. Within a few years, attendance rose to almost 20,000, and the show moved to the New Jersey Convention and Exposition Center.

The event is still held each year, and holds the title as the longest continually running technology festival in the world.

The second PC show was Personal Computing '76, held in Atlantic City [Aug 28].

Feynman's Quantum Computer

May 2, 1981

In a lecture entitled "Simulating Physics with Computers", Richard Feynman considered whether a classical computer could simulate a quantum system.

His answer was "no" due to the exponential growth in the number of probabilities that would need to be stored and manipulated.

The only solution would be to construct a computer that could store quantum bits, or "qubits". Feynman proposed a model for such a device based on the polarization of photons.

Feynman's talk was enormously influential in promoting the idea of quantum computers, although there had been some earlier work on these concepts by Paul Benioff and Yuri Manin.

Feynman's book, "Feynman Lectures on Computation" (2000) contains a chapter on quantum computers, and is well worth a read.

Feynman was a keen popularizer of physics through books and lectures, including a [Dec 29] 1959 talk on top-down nanotechnology, and the magnificient three-volume collection of his undergraduate lectures, "The Feynman Lectures on Physics".

Green-eyed Mouse

May 2, 1983

The green-eyed mouse (so named because of its two green buttons) was the first sold by Microsoft, nearly a year before the release of the Macintosh [Jan 24]. However, the Apple Lisa [Jan 19] was the first commercial PC to include a mouse.

Microsoft Mouse. Photo by Rolf Hartmann. CC BY-SA 3.0

Microsoft's mouse was sold by itself at first, but was later bundled with Microsoft Word when that software was released on [Sept 29]. Bill Gates recalled years later, "When we first brought this out we ordered 50,000 and it took over a year to sell the first 50,000." The slow uptake may have been due to it requiring an IBM PC with an enormous 64Kb of RAM, and the installation of a bus interface card. Later versions simplified matters by employing a serial connector.

Although the mouse was small it was heavy because of its use of a solid steel ball for tracking and the three smaller balls to support its rolling over a surface. A Japanese company, Alps Electric, produced the device.

The next Microsoft mouse was gray-eyed, and labelled as Version 5.0, although there had been no versions 2, 3, or 4.

Later notable Microsoft rodents included the "dove bar" (1987), the "ballpoint" (1991), and the "kidney" (1993).

Excel Announced

May 2, 1985

At the Pierre Hotel in NYC, Microsoft introduced Excel for the Macintosh, although they only started selling it on Sept. 30. Two years later (Nov. 1987), Excel 2.0 debuted for the PC (there never was an Excel 1.0 for MS-DOS or Windows). The main developer was Charles Simonyi [Sept 10], the noted space man [March 26].

Excel wasn't Microsoft's first spreadsheet application. Back in 1982, it had marketed Multiplan [Aug 1], which became very popular on CP/M systems [June 22], but had lost out to Lotus 1-2-3 on MS-DOS.

In the early 1990's, Excel started to outsell Lotus 1-2-3 [Jan 26], and became an important element in Microsoft's domination of PC business software. Excel 4 (1992) included an Easter egg animation of the Excel logo crushing the numbers 1-2-3.

Excel 5 (1993) added VBA (Visual Basic for Applications) which made it much easier to automate number-crunching tasks (and write viruses [July 25]). VBA was later grafted onto Microsoft Project, Access, and Word [Sept 29].

Excel 95 contained a hidden Doom-like game [Dec 10], called "The Hall of Tortured Souls". Excel 97 hid a flight simulator, with one of the mountains in the game inscribed with the names of all the programmers who had worked on that version.

New Scientist magazine reported in Aug. 2020 that researchers investigating human genes were having problems with Excel automatically converts gene names into dates – take SEPT1, for example, which is involved

with maintaining cell shape, and MARCH1 which manipulates certain proteins. The HUGO Gene Nomenclature Committee quickly came up with a solution: henceforward, SEPT1 would be known as SEPTIN1, and MARCH1 became MARCHF1.

On Jan. 25, 2021, Andy Gordon and Simon Peyton Jones [Jan 18] announced that the new LAMBDA features in Excel meant that its formula language was now Turing complete [Nov 12] (i.e. that it can implement any algorithm).

LAMBDA adds functional programming features, in particular the ability to define recursive formulae, such as good-old factorial:

```
=LAMBDA(n, IF(n<2,1,
   n*FACTORIAL(n-1)))
```

82-year-old Tatsuo Horiuchi has created paintings in Excel for nearly 20 years. He uses vector drawing tools developed primarily for graphs and simple shapes to make panoramic scenes of life in rural Japan.