Feb. 19th

William Grey Walter

Born: Feb. 19, 1910;

Kansas City, Missouri, although his family moved to the UK in 1915.
Died: May 6, 1977

Walter constructed some of the first electronic autonomous robots, which he called his "Machina speculatrix," in order to study how complex behavior could arise from a few simple computational units linked together.

Elmer and Elsie (short for (ELectroMEchanical Robot, Light-Sensitive) were constructed between 1948 and 1949 to show how light- and touch-sensitive controls could interact so a robot could find its way around obstacles. The devices were often described as tortoises (turtles) due to their shape, slowness, and because they "taught us" about behavior and self-organization.

Elsie preferred moderate light, avoiding both strong illumination and darkness, which manifest itself as a peculiarly liking for women's stockings. Walter wrote: "Crude though they are, they give an eerie impression of purposefulness, independence and spontaneity."

He also stressed the importance of using analogue electronics to simulate brain-like processes, at a time when his contemporaries such as Alan Turing [June 23] and Norbert Wiener [Nov 26] preferred to describe mental processes in terms of digital computation.

Squee, the Robot Squirrel [Aug 25], designed by Edmund Berkeley [Feb 22], was based on Walter's turtles, and they also inspired Rodney Brooks [Dec 30] and Hans Moravec [Nov 30].

Marvin Wendell Lautzenheiser

Born: Feb. 19, 1929;

Maximo, Ohio

Lautzenheiser released the album "Two Loves Have I: Jean and the GENII Computer" in 1974. Jean is Lautzenheiser's wife.

Cover of the "Two Loves Have I" album. (c) Discogs website.

Most of the music was written by Lautzenheiser, but was performed by GENII, a special purpose computer capable of playing a Wurlitzer Pipe organ.

GENII mechanically operated the organ's three keyboards, pedal-board and traps, and was able to press up to 40 keys simultaneously. GENII was effectively an organist with eight hands.

Lautzenheiser began designing GENII in 1966, with construction work beginning in 1968. It eventually utilized 152 printed circuit boards and a mile of wiring, with the cabling connecting GENII to the pipe organ adding another four miles. GENII's display employed over 250 light-emitting diodes.

A score was translated into MUSICTRAN data and processed by the MARVEL program running on an IBM 370/145. A typical three-minute composition would become 200 feet of tape, containing up to two million pieces of data.

ACE Proposal

Feb. 19, 1946

Alan Turing [June 23] presented a 48-page "Proposal for the Development in the Mathematics Division of an Automatic Computing Engine (ACE)" to management at England's National Physical Laboratory (NPL) [Oct 1].

The document included detailed diagrams for supporting stored programs, floating point arithmetic, and subroutines

The initial plan was for Tommy Flowers [Dec 22] to build the ACE. He was eminently qualified because of his wartime work on the Colossus [Jan 18] for Bletchley Park [Aug 15], carried out at the Post Office Research Station at Dollis Hill. However, it was deemed more important to have Flowers help with the post-war reconstruction of the telephone system.

In any case, there were some concerns over whether Turing's designs were feasible. Douglas Hartree [March 27] commented: "The logical complexity of the ACE is not surprising since Turing had a preference for this type of activity to engineering."

These views were influenced by Turing's practical electronics skills, which many contemporaries rated rather poorly. For example, Robin Addie, who knew Turing during his Bletchley days, recalls him at work: "My vivid memories are of a man of medium build with a round head of crew-cut hair bending over what we used to describe as an electrified bird's nest of resistors, capacitors and odd components insecurely fixed to a prototype chassis. All components were held aloft by little blobs of solder. At one end was a power supply delivering several hundred volts. I would watch fascinated as Turing plunged a hot soldering iron in the midst of this wonderwork."

After Turing left NPL (in part because he became disillusioned by the lack of progress on the ACE), James H. Wilkinson [Sept 27] took over the project and

Harry Huskey [Jan 19] helped to simplift the design. The Pilot ACE ran its first program on [May 10] 1950, and was demonstrated to the press in Dec. 1950.

First Warrant to Search a Computer

Feb. 19, 1971

A programmer working for University Computer Corp. (UCC) hacked into the mainframe of a competing company, Information Systems Design (ISD) of Oakland, to copy an engineering plotting program called PLOT/TRANS.

He first tried to retrieve the program by printing it to punch cards, with no apparent effect, so grabbed the code by listing it. But, unknown to the miscreant, the cards had been punched locally at ISD, an unclaimed stack that eventually aroused suspicion.

On this day, police armed with a search warrant raided the UCC premises with explicit authority to search the computer for evidence. It took nine hours to copy all the machine's data onto tapes, which the police impounded.

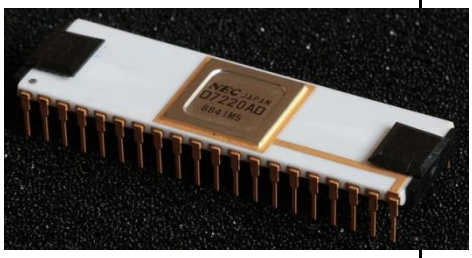
All that work was probably unnecessary since the searchers discovered hand-written notes in the culprit's office on how the ISD computer had been accessed, and also found the printout of the stolen program. The individual was charged with the theft of a trade secret, eventually pleaded guilty, fined $5000, and placed on three years' probation.

For the first (detected) computer crime, see [Oct 18]. For more police raids, see [March 1; May 7].

NEC 7220 Described

Feb. 19, 1981

The "High-Performance Graphics Display Controller 7220" (aka the NEC µPD7220) was the first commercial graphics display chip. It was capable of drawing lines, circles, arcs, and character graphics to a bit-mapped display, and even supported light pen input.



The NEC µPD7220A. Photo by Drahtlos. CC BY-SA 4.0.

Its success inspired the design of several other low-cost, high-performance video graphics cards during the 1980's. Intel also licensed the design, renaming it the 82720.

A paper about the 7220 was presented at ISSCC '81 (the IEEE International Solid State Circuit Conference) on this day.

Before the 7220, every graphics display unit, such as the IBM 2250 (1974), and Tektronix's 4010 (1972), sported its own drawing primitives library. The 7220 changed this by establishing a base-line set of instructions that made it easier to port graphics applications between devices.

A year after its introduction, one journalist said "The 7220 chip is a component that even some of NEC's competitors have found too good to pass up."

The 7720 was used in the DEC Rainbow [May 00], the Tulip System-1, and the Epson QX-10. Indeed, when the Apple Lisa [Jan 19] was released in 1983, the press wondered why the 7220 hadn't been employed for its graphics.

Photoshop

Feb. 19 (or 10), 1990

Adobe Photoshop is the de facto industry standard for graphics editing, so much so that the word entered the OED in Sept. 2006 as a verb (as in "to Photoshop an image"). It's also popular as an adjective, as in "Photoshop disaster".

The application was developed during 1987 by Thomas and John Knoll. Thomas had previously written software that could display grayscale images on the Mac Plus. John got involved when he realized that the code could be extended for use in his special effects job at Industrial Light & Magic [Sept 12]. For example, it was utilized in the "pseudopod" scene in "The Abyss" ([Aug 11] 1989).

Initially the brothers combined their code and tools into a single program with the rather generic name, "Display." Display became "ImagePro" for a short time, before Photoshop was adopted in March 1988.

In Sept. 1988, Photoshop was demonstrated to Adobe co-founder John Warnock [Oct 6] who liked its potential. After another ten months of development, Adobe released version 1.0 for the Mac on this day.

When Photoshop CS6 was released in 2012, it cost $700, and became one of the most pirated pieces of software in history. In a perhaps not entirely unconnected development, in 2013 the company announced that all future versions would only be available through a subscription-based "Creative Cloud".

Startup News

Feb. 19, 2007

Paul Graham [Nov 13] launched the social news website "Startup News", which was renamed "Hacker News" on Aug. 14. The aim was to recreate a community similar to the early days of Reddit [June 23], but without generally available down-voting. Only users with sufficient "karma" points had that privilege.

Graham also used the project to test a programming language he'd developed, a dialect of Lisp [April 15] called Arc.

When Graham later stepped down as the site's chief moderator, a role he estimated took three to four hours per day, he noted: "I wish I could get people to stop posting comments that are stupid or mean. It takes only one or two negative comments and a discussion turns into a flame war. 'Hacker News' makes me sad a lot. I wish the community would behave the way they did when it was a little village."

Tumblr Launched

Feb. 19, 2007

Tumblr is a social networking website founded by David Karp which emphasizes the creation of short-form blogs called tumblelogs, where each post is a single paragraph, image, or a video.

Karp had liked the idea of tumblelogs for some time, and had been waiting for one of the established blogging platforms to introduce them. He got tired of waiting so Karp and developer Marco Arment began building their own platform.

As of Aug. 2019, Tumblr hosted over 475 million tumblelogs, including a sizable amount of pornography (TechCrunch estimated it to be over 22% of all the traffic).

The inventor of the short-form blog is usually considered to be Chris Neukirchen, a 17-year-old German high school student. In March 2005, he used the term "tumblin'" on his site, with the "tumblelog" term being coined by Jonathan Gillette (aka "why the lucky stiff") in a blog post on April 12, 2005 which described Neukirchen's site.