## Harry Douglas Huskey

Born: Jan. 19, 1916;

Whittier, North Carolina
Died: April 9, 2017

Huskey wrote the technical manual for the ENIAC [Feb 15] near the end of the project, and worked on the early logical designs for the EDVAC [April 12]. Following the departure of J. Presper Eckert [April 9] and John Mauchly [Aug 30] from the project in 1946, Huskey visited the National Physical Lab in the UK for a year, where he worked on the Pilot ACE [May 10] with Alan Turing [June 23], Donald Davies [June 7], and others. Later, he recalled: "I think Turing was reluctant to see effort diverted from the "big" ACE, but he did not "boycott" the development of the ACE Test Assembly, nor did I feel that he resented my part in its beginnings."
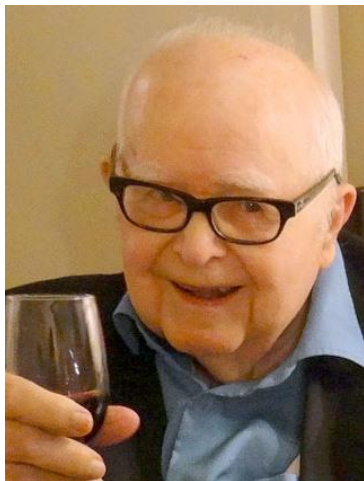
Harry Huskey (2011). Photo by James Duncan. CC BY-SA 3.0.

After returning to the US he helped start the Standards Eastern Automatic Computer (SEAC [June 20]) project in Washington, D.C. Then he moved on to the Institute for Numerical Analysis in Los Angeles, where he designed and managed the construction of the 'western version' of the machine, the Standards Western Automatic Computer (SWAC [Aug 17]).

At Bendix Aviation in 1952-1953, he designed the G-15 [March 00], which could perhaps be considered the first "personal" computer, in the sense that a single person could operate it. He had one installed in his home for many years, so it could also be deemed the first 'home' computer; it now resides in the Smithsonian Institution.

Huskey appeared on the May 10, 1950 episode of Groucho Marx's radio show "You Bet Your Life", as the designer of an "electronic brain". Huskey described how the computer could add two and two, giving Groucho a chance to remark, "Wouldn't it be just simpler to take off your shoes and count on your toes?"

John Lions

Born: Jan. 19, 1937;

Sydney ??, Australia
Died: Dec. 5, 1998

Lions was the author of the influential "Lions' Commentary on UNIX [Oct 15] 6th Edition, with Source Code", which he first prepared as course notes for his OS course at the University of New South Wales (UNSW) in May 1976. A detailed, line-by-line, description like this was possible since the 6th Edition was only a modest 9,073 lines long.

The original commentary was in two volumes – the code in one book, the exposition in the other, which allowed them to be read side by side. Memorably, UNSW printed the code in a book with a red cover and the commentary's cover was orange.

The famous UNIX comment "You are not expected to understand this" occurs on line 2238 (on p.22). To be fair, this comes just after a much longer comment that describes all the gory details (a context-switching mechanism for swapping between processes). At this point, Lion's commentary says: "The comment which begins here is not encouraging. We will return to this point again towards the end of this chapter." Ken Thompson [Feb 4] also admitted later, "The real problem is that we didn't understand what was going on either."

The March 1977 issue of *UNIX NEWS* [July 30] (vol. 2, no. 3) announced the availability of the book together with a pull quote recommendation to die for: "Ken Thompson has seen the first version of the book and reports that it is a good job." After that, Lions had trouble keeping up with demand. Indeed, for many years, it was the only public documentation for the kernel.

When AT&T announced Version 7 in June 1979, it also decided that UNIX was a valuable commercial product. Consequentially, it was issued with a license that prohibited the source code from being studied. This was a sad (even crazy) mistake, although it probably encouraged the development of MINIX [March 16] and xv6. In the meantime, Lions books went 'underground', becoming perhaps the most photocopied text in computer science.

In 1996 it was allowed to be published again, along with additional comments by many UNIX luminaries, including Dennis Ritchie [Sept 9] and Thompson. The back cover includes the note: 'The Most Famous Suppressed Manuscript in Computer History'.

On June 6, 2002, UNSW dedicated the John Lions Garden in front of the new Computer Science and Engineering building, a nice touch considering his love of Australia's national parks.

John Leroy Gustafson

Born: Jan. 19, 1955;

Des Moines, Iowa

As part of his work on High Performance Computing (HPC), he coined Gustafson's Law (aka

Gustafson–Barsis' law) which appeared in the article "Reevaluating Amdahl's Law" [Nov 16]. It argues that Amdahl's assumptions about speed-ups aren't applicable in many practical applications of multiple processors. In those cases, more processors mean that larger problems are solved, not that the same sized problem are solved quicker.

Gustafson also devised a new format for real numbers called the unum (universal number). It encompasses all of the existing IEEE floating-point formats [June 5] as well as fixed-point and exact integer arithmetic. It produces more accurate answers than standard floating-point arithmetic [Oct 30], and uses fewer bits to do it in many cases.

On Oct. 8, 1997, a team led by Gustafson completed a working replica of the Atanasoff–Berry Computer [Jan 15].

HP-65 Released
Jan. 19, 1974

The HP-65 was HP's third scientific calculator, and looked quite similar to the earlier HP-35 [Jan 4]. Nicknamed "Superstar," it has also been called the "world's first handheld computer."

The program memory could hold up to 100 6-bit instructions, and could read/write programs and data from/to removable magnetic cards. HP even called the device a "personal computer" in the May 1974 issue of its *HP Journal*.

During the July 1975 Apollo-Soyuz test, the HP-65 became the first programmable handheld calculator in space. It was carried as a backup in case of problems with the Apollo Guidance Computer [Aug 25], and as a way to double check calculations.

Steve Wozniak [Aug 11] had a HP-65 for a while, but sold it to buy materials for building Apple I boards [June 29].

Apple Lisa Released
Jan. 19, 1983

Prev: [Dec 00] Next: [Jan 24]

The Apple Lisa was the first commercial PC to have a graphical user interface (GUI) and a mouse. It used a Motorola 68000 [Sept 26], 1 MB of RAM, 2 MB of ROM, two floppy drives, a 12" built-in B/W bitmapped monitor with decent 720x364 resolution, and a 5 MB hard drive (the first Apple machine to have one). It was the Lisa team who visited Xerox PARC in Dec. 1979 [Dec 00].

Although the Lisa group was initially led by Steve Jobs [Feb 24], he was removed by Apple's CEO Michael Scott in Sept. 1980. Jobs migrated across to Jef Raskin's [March 9] Macintosh project on Jan. 20 1981, and it wasn't long before Raskin was complaining to senior management.

BYTE magazine wrote that the Lisa was "the most important development in computers in

Apple Lisa, with an Apple ProFile external hard disk. Photo by Stahlkocher. CC BY-SA 3.0.

the last five years, easily outpacing [the IBM PC]" [Aug 12]. However, at a cost of $9,995, the Lisa ended up being a commercial failure (less than 100,000 units were sold).

There were teething problems with its technology, especially the "Twiggy" disk drive, which was both sluggish and error-prone. The OS was also complex, supporting protected memory, cooperative multitasking, and high resolution graphics, which slowed the machine down.

Nevertheless, many of its technologies found their way into the Macintosh [Jan 24]. In particular, Bill Atkinson's [April 27] QuickDraw library, which supported the GUI.

In the end, the Mac upstaged the Lisa a year later by providing most of the same functionality at a fraction of the cost. Although the Mac also used a 68000 processor, it's version was considerably faster (7.89 MHz vs. the Lisa's 5 MHz).

Apple dropped the Lisa from its product line in 1985, and in 1987 buried some 2,700 unsold units (22 truck loads) in the Cache Valley landfill in Logan, Utah. Security guards made sure all the computers were destroyed.

Jobs claimed that "LISA" stood for "Local Integrated System Architecture". Andy Hertzfeld [April 6] and other developers read it as "Lisa: Invented Stupid Acronym", while computer pundits decided it meant "Let's Invent Some Acronym".

Decades later, Jobs would tell Walter Isaacson: "Obviously it was named for my daughter", Lisa Nicole Brennan.

Brain Virus
Jan. 19, 1986

Brain was the first MS-DOS virus [Aug 12]. It attacked the boot sector of 5.25 inch floppy disks which held the file system, causing the disk drive to slow down, and making several kilobytes of memory unavailable

which often made it impossible to perform saves. Brain would also infect any other floppy disks accessed while it was in memory.

The virus got its name from the fact that it changed the disk volume label to (c)Brain. The creators chose that name because their computer business was called "Brain Computer Services". Advertising of this type may seem a little surprising, but the authors of Brain, two brothers, Basit and Amjad Farooq Alvi, from Lahore, Pakistan, always claimed that Brain's aim was solely to deter the unauthorized copying of their heart monitoring software. They said that they never intended the virus to spread beyond copyright infringers. Indeed, most versions of the virus also included the brother's names, address, and phone numbers.

The brothers were reportedly stunned when they began to receive calls from the UK, US, and beyond, demanding that they fix infected machines.

Brain wasn't the first DOS-based virus; that 'honor' belongs to 1982's 'Elk Cloner' [Jan 30] which infected Apple II DOS 3.3.

Storm Worm
Jan. 19, 2007

"Storm Worm" was a Trojan horse that affected Microsoft Windows [Nov 30]. It carried an executable file as an attachment which created a back door on the computer that could be exploited to steal data or to post spam [March 31]. Some infected machines were observed sending 1,800 messages in a five-minute period.

Storm began attacking on this day, disguised as an e-mail message about a weather disaster (hence its name).

In July, a security firm recorded more than 200 million e-mails carrying links to Storm over the course of just a few days.

The Year 2038
(Overflow #1)
Jan. 19, 2038

At 03:14:08 UTC, the signed 32-bit integer versions of UNIX time [Jan 1] will exceed the largest value it can hold (2^{31} -1 or 2,147,483,647 seconds since Jan. 1, 1970). An overflow will occur, and the time value will become a negative number. UNIX will interpret this as 20:45:52, Friday, Dec. 13, 1901 UTC.

The most likely kind of hardware to be affected will be older embedded systems, and there's no simple fix. Changing software to use a date based on an *unsigned* 32-bit integer is probably the easiest thing to do. It would push the date overflow to 2106, but make it impossible to refer to dates before Jan. 1, 1970.

Also see [Feb 7] and [Dec 4]. For links to other date/time related problems, see [Jan 1].