March 13th

Zoöpraxiscope Demoed

March 13, 1882

Eadweard J. Muybridge's zoöpraxiscope (aka the zoögyroscope) was an early device for displaying moving images. Muybridge had the original idea in the summer of 1879, and a prototype was probably working by Jan. 1880. His motivation was to visually demonstrate the authenticity of his pictures of animals in motion.

A sequence of silhouette images were hand-painted around the edge of a circular 12" glass disk, which was loaded vertically into the projector. The machine rotated the disk rapidly, illuminating each image in succession, to give the impression of movement. It was essentially a clever combination of two existing technologies: animation as found in the zoetrope (a spinning drum), combined with image projection as used in magic lanterns since the 17th Century.

Muybridge first demoed the device in private showings at the home of Leland Stanford, governor of California, early in 1880. From May, Muybridge started including the machine in his public lectures, and it was demonstrated on this day at a talk held at the Royal Institution in London.

In 1893, Muybridge displayed his work in a specially built "Zoöpraxigraphical Hall" at the World's Columbian Exposition in Chicago. The audience had to pay to attend the show, making the hall the first commercial movie theater.

This Chicago exposition was the last of three great 19th Century world's fairs, following the 1851 Crystal Palace Exhibition in London [May 1] and the 1876 Centennial Exposition in Philadelphia [June 25].

David Neil Cutler

Born: March 13, 1942; Lansing, Michigan

Cutler is known as the "Father of Windows NT" [July 27], but also developed other important OSes while working at DEC [Aug 23]. Shortly after joining the company in 1971, he contributed to the real-time OS, RSX-11/M, for the PDP-11 [Jan 5]. In the mid 1970's, he led the development of VMS for the VAX-11 [Oct 25]. Gordon Bell [Aug 19] later said that he chose Cutler because "we both had the same goals and competitive urges … Dave is the ultimate competitor. He really wants to win."

David Cutler (2008). Photo by John P. Beck. CC BY 3.0.

In 1981 Cutler founded the DECWest lab in Bellevue, Washington (located dangerously near Microsoft's HQ). The lab produced the VAXELN embedded real-time OS, and the MicroVax I [Oct 18], the first VAX microprocessor computer.

Cutler left DEC in 1988 after his team's current project was cancelled. On Oct. 31, Cutler joined Microsoft, and other members of the DECWest team soon followed.

Many people have pointed out that the initials of Cutler's Windows NT (WNT) are an increment of the VMS initials. For a similar story, see [Jan 12].

In the mid-2000's, Cutler helped develop the AMD64 [May 1], and led the effort to ship the first 64-bit Windows systems. He also worked on the Azure cloud service [Feb 1] and the hypervisor for the Xbox One [Nov 22].

Cutler has often expressed his low opinion of the UNIX I/O model, often by singing "Get a byte, get a byte, get a byte byte byte" to the tune of the finale of Rossini's William Tell Overture. A typical quote: "UNIX is a junk OS designed by a committee of PhDs." [Oct 15]

For Cutler's 50th birthday, Rob Short, a friend from DECWest days, bought a decommissioned, defunct VAX 11/780. He assembled it in Cutler's house, and hid a MicroVAX inside the cabinet to make it appear that the VAX-11 was operational.

PLANOBOT Filed

March 13, 1957

A patent application was filed by Joe B. Brown and Robert E. Place for the PLANOBOT Pick-and-Place Industrial robot arm, which was granted in Aug. 1962.

Hydraulically powered, it had five axes of motion and was capable of 25 individual movements. The arm could extend, retract, raise, lower, and rotate by 270 degrees. The hand could open, close, and rotate by 360 degrees. At least eight PLANOBOTs were eventually sold

Although a mechanical arm patent had been filed by George Devol [Feb 20] earlier, on [Dec 10] 1954, the PLANOBOT was the first industrial robot arm to be commercial available.

Some sources say that the first one was installed at the Harrison radiator manufacturing plant, a division of General Motors, in 1955, to lift hot castings out of a die-casting machine. Certainly, a PLANOBOT was displayed at the St. Eriks International Trade Fair on Automation in Stockholm in Sept. 1957. Its party trick was to

move a baton past several obstacles.

Devol and Joseph Engelberger's better known UNIMATE arm only became commercial available in 1961.

IBM 3340 Winchester Announced

March 13, 1973

The IBM 3340 "Winchester" (or "Winnie") disk drive and its removable data pack/module became the dominant hard disk technology for the next twenty years.

Previous disk packs had only held disks, while the I/O heads, spindle and carriage were part of the disk drive. The "Winnie" design moved all of these into the module resulted in very significant cost savings. The information density of the disks also doubled – to nearly 1.7 million bits per square inch.

The first Winnie packed two drives per cabinet, each capable of handing a 30 MB module. This 30/30 configuration led to the "Winchester" codename – a reference to the .30-30 Winchester rifle cartridge. Subsequent modules grew to 35 and 70 MB, but the Winchester name remained.

Between two and four 3340 drives could be attached to a single IBM System/370 Model 115, thus providing it with a massive storage capacity of up to 280 MB.

The BSD Daemon

March 13, 1984

It's important to note that the "Beastie" mascot for BSD [March 9] is a d**a**emon, not a demon, a reference to the long-running processes used by most OSes. This also explains why Beastie usually carries a trident – it symbolize a daemon's use of process *forking*.

Beastie was first drawn in 1976 by comic book artist Phil Foglio, after BSD developer Mike O'Brien had cracked open the wall safe in Foglio's apartment. This was at Foglio's request and O'Brien was a bonded locksmith at the time.

In return Foglio agreed to draw some T-shirt artwork, and O'Brian supplied him with several pictures of a PDP-11 running UNIX [Jan 5], and some ideas for puns related to pipes, daemons, forks, and so on.

The current version of Beastie dates from 1983, drawn by John Lasseter, a former animator at The Walt Disney Company who had just joined Lucasfilm [Sept 12]. He later became chief creative officer at Pixar [Feb 3], and directed "Toy Story" [Nov 22].

Lasseter's work first appeared as a greyscale image on the cover of the UNIX System Manager's manual for 4.2BSD in March 1984. The book's author/editor was Sam Leffler, who worked with Lasseter at Lucasfilm, and had asked him to help out.

Four years later, Lasseter drew Beastie again for the cover of "The Design and Implementation of the 4.3BSD Operating System" by Leffler and McKusick. As a consequence, it's often called the "Devil" book.

Microsoft IPO

March 13, 1986

Prev: [June 25]

Five years after the company's incorporation [June 25], Microsoft stock went public at $21 per share, closing at $27.75, after peaking at $29.25. The issue raised over $60 million for the company that day, and created three Microsoft billionaires and an estimated 12,000 millionaires.

The billionaires were Microsoft's two founders - Bill Gates [Oct 28] (who could now call himself the youngest self-made billionaire) and Paul Allen [Jan 21], along with Steve Ballmer [March 24]. Ballmer's inclusion may seem odd since he'd only joined the company in 1980. However, Microsoft's incorporation back in 1981 had earned him a 8% stake in the business.

While at Lakeside school [Nov 18], Gates had told a friend (or perhaps a teacher) "I'm going to make my first million by the time I'm 25." He was incorrect – he had made his first million when 23, and his first billion at 31.

Microsoft has had nine stock splits since, so today each IPO share is worth 288 shares. In March. 2021, a Microsoft share cost $235, so a single share bought on this day in 1986 (for $21) would now be worth over $67,000.

DARPA Grand Challenge

March 13, 2004

The first DARPA Grand Challenge was held in the Mojave Desert to test the ability of autonomous ground vehicles to traverse a 142 mile desert route from Barstow, California to the Nevada border in Primm.

Stanley after winning the 2005 DARPA Grand Challenge. Photo by DARPA.

In a moment of generosity, Congress let DARPA offer a prize of $1 million to the winner, but none of the 15 competitors claimed it since none of the vehicles completed the course. The CMU "Red Team" car travelled the furthest, breaking down after 7.36 miles.

The second Grand Challenge was held on Oct. 8, 2005. All but one of the 23 teams surpassed the 2004 top distance, and five jalopies actually finished the course. The prize (now worth $2 million) was awarded to Stanley, Stanford's autonomous hooptie, with a course time of 6 hours 53 minutes. CMU's Sandstorm and H1ghlander were close behind with times of 7:04 and 7:14.

The common element of both the Stanford and CMU teams was Sebastian Thrun [May 14]: he was head of that year's Stanford team and previously a colleague of William "Red" Whittaker, head of the CMU crew.

During the race, CMU's H1ghlander was in the lead for much of the time, but kept inexplicably slowing down when going up hills. Even after the event, CMU was unable to figure out exactly why this was happening. The troubling mystery was only solved in 2017 when H1ghlander was being dusted off to be put on display.

The third event, renamed the DARPA Urban Challenge, moved the event to a mock urban landscape. This time the computerized crates had to be capable of driving in traffic, and performing complex maneuvers such as merging, passing, parking, and negotiating intersections. They were also marked on how well they followed the Californian driving code (whatever that is).

On Nov. 1, 2007, 11 teams competed in the challenge, and that year's $2 million was won by a team from CMU (Stanford was second).

The 2012 DARPA Robotics Challenge [June 5], focused on autonomous robots that could handle a variety of emergency-response scenarios. Another DARPA challenge from that year involved red balloons [Dec 5].

Pirate Dogs

March 13, 2007

Malaysia deployed two sniffer dogs, black Labradors named "Flo" and "Lucky," who had been specially trained to detect the smell of the polycarbonates used in DVD, CD, and other disks.

The disks (mostly containing Hollywood blockbusters) were being smuggled through customs, and Malaysia became the first country to use animals to hunt for pirated movies.

The dogs' training cost around $17,000 each, and was carried out by an expert from Northern Ireland with a long history of training dogs to sniff out bombs. (Incidentally, the worst movie bomb of 2007 was probably "Evan Almighty".)

The pilot scheme, dubbed "Operation Double Trouble", was funded by the Malaysian authorities and the Motion Picture Association of America (MPAA).

The dogs returned to the US in Aug. 2007 after they had helped track down 1.6 million discs, three DVD replicating machines and 97 compact disc burners. Twenty-six people were arrested during the raids.

As the dogs departed, Malaysia's deputy trade minister S. Veerasingham placed medals around their necks.

Docker Released

March 13, 2013

Docker can package an application and its dependencies inside a virtual container that can run on Linux or Windows.

Solomon Hykes started building Docker at dotCloud, a French platform-as-a-service company, with contributions from Andrea Luzzardi and Francois-Xavier Bourlet. The company later changed its name to Docker, Inc.

The software was launched at PyCon [Jan 31] in 2013, and released as open source on this day.

Docker was initially developed on Linux, where it could employ LXC (LinuX Containers). LXC debuted in 2008 and relies on Linux cgroups and namespaces.

Cgroups (aka process containers) were invented at Google for controlling and measuring different kinds of resource usage (e.g. CPU load, memory accesses, network usage). Cgroups became part of the Linux kernel [March 14] in version 2.6.24 .