Jan. 4th

Goodbye Topsy

Jan. 4, 1903

To illuminate the dangerous effects of Nikolai Tesla's [July 10] alternating current, Thomas Edison [Feb 11] supposedly filmed the electrocution of the elephant, Topsy. In fact, it's likely that Edison wasn't directly involved (although he had previously electrocuted dogs).

Topsy, named after a slave girl in the book "Uncle Tom's Cabin", had been trained by her frequently drunk handler, William Whitey Alt, to intimidate the local police. There are reports that she had killed at least one man, perhaps three,

Alt was fired and Topsy's owners (Luna Park) planned to euthanize her by hanging. The American Society for the Prevention of Cruelty to Animals (SPCA) stepped in, arguing that hanging was needlessly cruel. After some debate, it was arranged that the Edison Electric Illuminating company of Brooklyn would electrocute her instead.

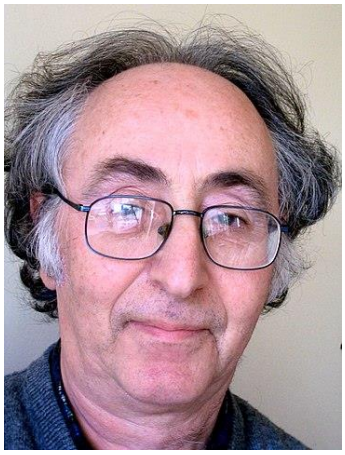
The electrocution was witnessed by 1,500 people who paid to watch the event at Coney Island, along with 100 representatives of the media. A video of the occasion can be found on YouTube.

Brian David Josephson

Born: Jan. 4, 1940;

Cardiff, Wales

Josephson's interest in superconductivity and quantum tunneling began while he was a 22-year old postgraduate student. He predicted the existence of the Josephson effect, which allows an electric current to flow across a thin insulating layer or 'tunnel' at the junction of two superconducting materials without the application of a voltage; if a voltage is applied, the current stops flowing and instead oscillates at high frequency. According to classical physics, that should be impossible.



Brian Josephson (2004). Self portrait. CC BY 3.0.

The Josephson effect led to the invention of highly sensitive magnetometers, called SQUIDs (superconducting quantum interference devices), and the Josephson junction for superconducting quantum computing [Feb 13].

In the early 1970's Josephson took up transcendental meditation, and set up the Mind-Matter Unification Project to explore quantum mysticism. He estimates that his confidence in intelligent design is about 80%.

Josephson is the only Welshman to have won a Nobel Prize in Physics (but there have been four Welsh Nobel laureates to date).

David J. Bradley

Born: Jan. 4, 1949;

Seattle, Washington

Bradley was one of the twelve IBM engineers (the "dirty dozen") who worked on the prototype PC that became "Project Chess" [Oct 20], and then the IBM PC [Aug 12]. He was primarily responsible for the ROM BIOS [July 10], but is probably better known for implementing the "three finger salute": the Ctrl+Alt+Del keys combination that reboots the computer.

According to Bradley, Ctrl+Alt+Del wasn't intended for end users, but for developers who needed a quick way to reboot without powering down the machine. Indeed, the key combination was initially only described in the PC's technical documentation. Bradley, with the help of Mel Hallerman (another of the "dozen"), chose that mix of keys because it was practically impossible to accidentally press them on a standard keyboard.

At the 20th anniversary of the IBM PC, on a panel with Bill Gates [Oct 28], Bradley noted that, "I may have invented it, but I think Bill made it famous".

HP-35

Jan. 4, 1972

At a press conference at the St. Regis Hotel in NYC, Bill Hewlett [May 20] announced the HP-35, the world's first scientific pocket calculator – one with trigonometric and exponential functions. It also had 35 keys, hence the name.

The story goes that in 1970 Hewlett challenged his design team, led by David Cochran and Barney Oliver, to create a "shirt-pocket sized HP-9100" [Oct 4]. The HP-35 was the result: 5.75 inches long, 3.25 inches wide, and 1 inch deep, specifically tailored to fit into one of Hewlett's shirt pockets. It weighed just 9 ounces.

The owner's manual noted that the HP-35 "[was] something only fictional heroes like James Bond, Walter Mitty or Dick Tracy are supposed to own." However, it proved immensely popular among scientists and engineers despite (or perhaps because of) their having to learn reverse Polish notation (RPN) to use it. 100,000 units were sold in the first year, and over 300,000 by the time it was discontinued in 1975. The arrival of the HP-35 is sometimes used to mark the

death of the slide rule [July 11], although some experts prefer June 13, 1976, when the Texas Instruments TI-30 scientific calculator was released, selling for a mere $25.

One of the rigorous use-case tests Dave Packard [Sept 7] applied to the device was to throw it across his office and see if it still worked afterwards.

Despite such onerous testing, several bugs remained in the released product, most notably a rounding error in the exponential function. For example, typing “2.02 ln ex” returned 2. By the time the company discovered the problem, 25,000 devices had been sold.

At an emergency meeting to discuss the problem, someone suggested keeping it quiet, to which Packard responded by snapping a pencil in two and saying, “Who said that? We’re going to tell everyone and offer them, a replacement. It would be better to never make a dime of profit than to have a product out there with a problem.” Of course, today a HP-35 with this bug is worth more to a collector than one without.

One of the first HP-35s. Photo by Mister rf. CC BY-SA 4.0.

A HP-35 was the first scientific calculator to travel into space, although probably on Skylab missions which began in May 1973, not during the Apollo program which ended in Dec. 1972, and employed slide rules.

In 2007, HP released a retro-style HP-35 to commemorate the original's release.

TOPS-10 Dating Woes

Jan. 4, 1975

The DEC PDP-10 [Nov 00] stored data in 12-bit fields, which meant that its TOPS-10 OS could only represent dates between Jan. 1, 1964 and Jan. 4, 1975. A DATE-75 patch added three more bits, so that dates up to Feb. 1, 2052 could be encoded.

The change was announced in mid-1974, and several tens of person-years went into updating date-based software. Unfortunately, the new format was somewhat tricky to use correctly, and some programs had already employed the three bits for other purposes.

Consequently, a large number of bugs surfaced on Jan. 5, 1975, with many programs acting as if it was Jan. 1, 1964. Other software (daring to be different) thought it was 1986. Related issues persisted until well into the spring of 1975.

For more date/time related problems, see [Jan 1].

Pocket PC

Jan. 4, 2000

At CES, Bill Gates [Oct 28] announced that "Windows CE" would now be known as the "Pocket PC" (or PPC). Later in the decade, the device was renamed again, becoming "Windows Mobile Classic".

The PPC wasn’t actual hardware, but a personal digital assistant (PDA) specification that ran atop Windows Mobile. It supported a resistive (or pressure-based) touch screen and/or a stylus.

Microsoft's aim was to promote a “Windows Everywhere” experience across disparate platforms , but the resulting user interface turned out to be complex, slow, and poorly suited to small screens. Other problems were its cost, the need for power hungry Wi-Fi that could drain a device's battery in an hour, and poorly written software.

PPC phones were easily outsold by the better designed Palm Pilot [March 10], and eventually the iPhone [June 29]. Microsoft tried to fight back with the "Windows Phone" [Oct 11], which debuted at the 2010 Mobile World Congress.

The PPC wasn't Microsoft's first dalliance with phone hardware; that was the MP-900 [Oct 6].

RuneScape

Jan. 4, 2001

RuneScape, a Java-based MMORPG, was released for PCs. Set in Ye Olde Medieval fantasy realm of Gielinor, players could chat, trade, go on quests, and fight goblins (and other players).

The game was developed by three brothers – Andrew, Paul and Ian Gower, initially in a bedroom at their parents’ home in Nottingham, England.

RuneScape was originally going to be a text-based MUD, but a variety of 2D and 3D sprites made it into the first release, and RuneScape 2 switched to full 3D graphics. Also, it morphed from being a Web browser game utilizing Java applets, to networked C++ software by 2016.

Among the game's innovations was a domain-specific scripting language called RuneScript, and a monthly membership service. Membership gave access to new gaming areas, quests, and items not available to the non-paying users. RuneScape was also the first game to suffer a virtual theft that was later punished in the real world [Oct 23].

RuneScape became massively popular, with over 200 million user accounts at its peak, and the Guinness World Records recognized it as being the

world's largest and most-updated free MMORPG.