Jan. 1st

Telegraph Trapped Tawell

Jan. 1, 1845

John Tawell was the first person to be arrested as the result of telecommunications technology.

On this day, his mistress was found dead through poisoning at her house in Slough, England. The police learnt that a man in distinctive Quaker clothing had left the house earlier and caught a train heading to Paddington Station in London. They used the newly installed telegraph to send a message to the station to detain him, including the description: 'He is in the garb of a Kwaker,' There was no 'Q' in the transmitter's alphabet, but 'Kwaker' was understood. Tawell was caught, convicted, and hanged on March 28, 1845.

The transmitter and receiver are preserved in the Science Museum in London.

First Public Radio Broadcast

Jan. 1, 1902

Nathan Stubbleford of Murray, Kentucky sent his friends a New Year's greeting using a battery-operated wireless telephone of his own design. The message was received at several houses and offices by similar devices, and it was reported that music, songs, and whispered conversations could be heard with perfect ease.

Arguments arise over the technology since Stubbleford utilized conduction and inductive fields rather than electromagnetic radiation, and so the broadcast wasn't technically "radio". Consequently, the first wireless transmission is usually assigned to Oliver Lodge on [Aug 14], 1894. This was over a year before Guglielmo Marconi's better known 1896 demonstration [Dec 11]. For even more candidates for first public radio broadcast, see [Jan 13]; [Oct 6].

There were other early forms of "wireless communication", such as Alexander Graham Bell [March 7] and Charles Sumner Tainter's photophone of 1880 which employed beams of light, and Amos Dolbear's 1884 "electrostatic telephone".

Nevertheless, the town of Murray promotes itself as the "birthplace of radio", and Stubblefield as the "father of broadcasting".

Heinz Zemanek

Born: Jan. 1, 1920;

Vienna, Austria
Died: July 16, 2014

Zemanek built the first completely transistorized European computer between May 1956 and 1958: the Mailüfterl – German for "May Breeze" – a reference to MIT's Whirlwind [April 20], which was mearly a vacuum tube device.

Actually, Mailüfterl was only the machine's nickname; its full title was the "Binär dezimaler Volltransistor-Rechenautomat".

Heinz Zemanek (2007). Photo by Christian Wirth (Wirthi). CC BY-SA 3.0.

The Mailüfterl was around 4 meters wide, 2.5 meters tall and half a meter deep, and employed around 3,000 transistors, kindly donated by Philips.

Other early transistorized computers include the TRADIC [March 14], the Harwell CADET [Feb 00], and the TX-0 [Nov 20]. Probably the first was the Manchester TC [Nov 16].

Zemanek worked at the Viennese Institut fur Niederfrequenztechnik which produced two other wonderfully named machines in the late 1950's: the "Universalrelaisrechenmaschine 1" (URR-1) and the Logistischerelaisrechenmaschine 1) (LRR-1).

Zemanek joined IBM in 1961, and became the first director of its influential Vienna Lab. He played a significant role in the definition of PL/I [June 25], employing the "Vienna Definition Language". Later, the lab embraced denotational semantics, and its "Vienna *Development* Method" became popular in industry and inspired several other formalisms for defining systems.

Bell Labs Formed

Jan. 1, 1925

The roots of Bell Labs (now known as Nokia Bell Labs) originate in the American Telephone and Telegraph Company (AT&T), which was founded by Alexander Graham Bell [March 7] in 1874 as the Bell Patent Association.

AT&T's research efforts had grown so large by the early 1920's that they were split off into a new subsidiary, Bell Telephone Labs Inc., on this day.

Until the 1940's, the lab's principal location was in Manhattan's West Village, in a building described by Vannevar Bush [March 11] as "a warren of testing labs for phones, cables, switches, cords, coils, and a nearly uncountable assortment of other essential parts." In 1967, the headquarters

relocated to Murray Hill, New Jersey.

Bell Labs was responsible for an amazing range of technologies, including: radio astronomy; the laser; information theory [April 30]; the CNC [Jan 8], bombes [Sept 4]; the TRADIC [March 14], modems [June 26]; the CARDIAC [July 00]; UNIX [Oct 15], Plan 9 [July 16]; C [July 21], AWK [Aug 9], and C++ [Dec 30].

Eight Nobel Prizes have been awarded to lab members including for the invention of the transistor [Dec 16], and the charge-coupled device (CCD [Oct 17]). Its researchers have won the Turing Award four times:

- 1968: Richard Hamming [Feb 11]
- 1983: Ken Thompson [Feb 4] and Dennis Ritchie [Sept 9]'
- 1986: Robert Tarjan [April 30] with John Hopcroft [Oct 7];
- 2018: Yann LeCun and Yoshua Bengio shared the award with Geoffrey Hinton [Dec 6].

Perhaps less well known is the lab's pioneering work on computer art (A. Michael Noll [Aug 29]), animation (Edward E. Zajac [Jan 8], Frank Sinden, and Kenneth C. Knowlton [Feb 28]), and music (Max V. Mathews [Nov 13] and John R. Pierce [March 27]).

After the Jan. 1 1984 break-up of AT&T, Bell Labs became AT&T Bell Labs, and went into something of a decline. After the deregulation of US Telecoms in 1996, AT&T Bell Labs was split again, into AT&T Labs and Lucent Technologies Bell Labs. Bell Labs continued to lose manpower due to layoffs and spin-offs, and Peter Salus announced the closure of the department responsible for UNIX on [Aug 16] 2005.

Donald Lester Bitzer

Born: Jan. 1, 1934;

Illinois

Bitzer is the father of PLATO (Programmed Logic for Automatic Teaching Operations), not to be confused with the father of Plato, the Greek philosopher, who was named Ariston.

A PLATO V terminal in 1981. Photo by Mtnman79. CC BY 3.0.

PLATO was the first general-purposed computer-assisted instruction system, which Blitzer had begun developing at the start of the 1960's [Aug 22]. PLATO IV [July 00] was the first version to combine graphics and touch-sensitive screens.

In 1964 Bitzer co-invented the flat plasma display panel with H. Gene Slottow and Robert Willson, originally as an educational aid for PLATO students. The screens were easy to spot since they displayed everything in monochromatic orange. In Oct. 2002, the group was awarded an Emmy for their efforts.

Bitzer holds patents for several other inventions, including the binary-weighted solenoid.

Hewlett and Packard Toss a Coin

Jan. 1, 1939

Bill Hewlett [May 20] and Dave Packard [Sept 7] decided to name their company after themselves, and chose the order with a coin toss. The result was Hewlett-Packard (HP). Packard proved to be an expert administrator and Hewlett an astute technical innovator. The company grew into a powerhouse producer of calculators [Jan 4], computers [Dec 00]; [Oct 4]; [Nov 00], and laser [May 5] and ink jet printers.

HP's first corporate HQ was in Packard's Palo Alto garage [May 17], which is now honored as the "birthplace of Silicon Valley".

The $538 used to start the business was borrowed from Fred Terman [June 7], a radio engineering professor at Stanford, who supported many fledging tech. companies in this way.

The company's first product, the HP 200A Audio Oscillator, became a popular piece of testing gear. Rumor has it that "200" was chosen as a way to disguise the fact that it was the business's first piece of merchandise.

In 1940 Walt Disney Pictures ordered eight of the 200B's for testing the speaker systems installed at twelve theatres showing "Fantasia".

Also in 1940, the company left their garage, moving to grander rented accommodation. HP was incorporated on Aug. 18, 1947, and went public on Nov. 6, 1957.

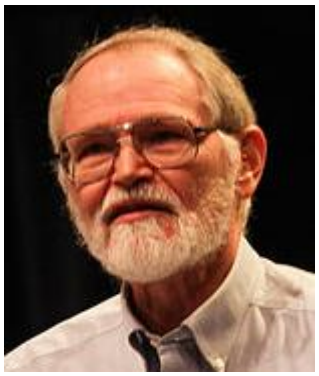
Brian Wilson Kernighan

Born: Jan. 1, 1942;

Toronto, Ontario

Kernighan and Dennis Ritchie [Sept 9] are the authors of the

celebrated first book on C, “The C Programming Language” (1978). It's usually known as “K&R”, or the “White” book due to its color (which is white!).



Brian Kernighan (2012). Photo by Ben Lowe. CC BY 2.0.

Kernighan has always said that he played no part in the design of C. He said: “UNIX is Ken Thompson [Feb 4] with an assist from Dennis Ritchie. And C is Dennis with an assist from Ken.” However, he is the co-creator of the AWK and AMPL languages and many other UNIX utilities, including a slew of document preparation tools. The “K” in AWK stands for “Kernighan” (“A” is for Aho [Aug 9], “W” for Weinberger [Aug 6]),

He almost invented the name “UNIX” [Oct 15], having suggested “Unics”. The reasoning was that Multics [Nov 30] was a large, complicated OS, but “Unics” would be small and have at most one of anything. Someone else added the “X”.

He also coined the expression, “What You See Is All You Get” (WYSIAYG), a sarcastic version of “What You See Is What You Get” (WYSIWYG [Sept 17]).

His interest in computing blossomed in the summer of 1966, when he worked part time for Fernando Corbató [July 1] on CTSS [May 3] in MIT's Project MAC [July 1]. This led to part-time jobs at Bell Labs [Jan 1], and eventually a 30-year career with the company.

Kernighan is a former black belt and a movie extra, appearing in “A Beautiful Mind” (2001). Kernighan recalled the occasion: “I was on screen for 15-30 seconds. Hint: I am not wearing glasses and am much better dressed than is my habit.”

Another quote: “Debugging is twice as hard as writing the code in the first place. Therefore, if you write the code as cleverly as possible, you are, by definition, not smart enough to debug it.”

Allan (Al) Alcorn

Jan. 1, 1948; San Francisco, California

Alcorn is best known for designing and implementing the game Pong [Nov 29] at Atari [June 27], then owned by Nolan Bushnell [Feb 5] and Ted Dabney [May 2]. He’d first met the pair at Ampex before they'd left that company to form Atari (although they called it "Syzygy" back then).

Bushnell asked Alcorn to make a simple version of the Magnavox Odyssey’s [May 2] tennis game, as part of a contract from General Electric. The contract later turned out to a be a fabrication, but Pong's success was real.

Bushnell was involved with the development of many later Atari products, such as the Atari 2600 [Oct 14], but left the business in 1981. He went on to work for a think tank funded by Paul Allen [Jan 21], and co-founded “Hack the Future” in 2011, a technology festival and hackathon aimed at elementary school kids.

He grew up near the corner of Haight Ashbury in San Francisco, and claims (perhaps humorously) to have worn flowers in his hair throughout his high school years.

Timesharing Memo

Jan. 1, 1959

John McCarthy [Sept 4] published the MIT memo, “A Time Sharing Operator Program for Our Projected IBM 709”. It inspired a flurry of timesharing experiments, including Herbert Teager’s aggressively sounding “time-stealing" system.

When McCarthy began to consult at BBN [Oct 15] in 1960, his ideas found especially fertile ground with Ed Fredkin [Oct 2] and Joseph Licklider [March 11]. Fredkin developed a demonstration timesharing system using one of the first PDP-1's [Nov 00], and Licklider was inspired to write his famous “Man-Computer Symbiosis” paper.

However, the first full-scale timesharing OS was CTSS [May 3], developed by a MIT group led by Fernando Corbató [July 1] in Nov. 1961.

Although McCarthy’s memo was influential, it probably wasn’t the first to describe timesharing. John Backus [Dec 3] may have pipped him to the post with a talk he gave in 1952. However, the exact meaning of “timesharing” was rather fluid back then, and some authors may only have meant a switching between programs rather than users. This distinction led Corbató to credit Christopher Strachey [Nov 16] with originating the timesharing idea.

UNIX/Epoch Time Begins

Jan. 1, 1970

UNIX [Oct 15] time (aka POSIX [?? 1988] time or Epoch time) is the number of seconds that have elapsed since 00:00:00 UTC (GMT) on Thursday Jan. 1, 1970.

If you have a UNIX/Linux box handy, you can found out the current epoch time in seconds by typing:

```
date +%s
```

The standard UNIX time datatype (time_t) was a 32-bit signed integer for many years which meant that it only covered a span of some 136 years. The earliest representable day was Friday Dec. 13, 1901 (by using

negative epoch values), and the last was Tuesday [Jan 19] 2038.

The datatype has been increased to 64 bits in recent times, which expands the time range by approximately 293 billion years in both directions. This should be enough for anyone (perhaps paraphrasing Bill Gates [Jan 24]) as it's over twenty times the expected age of the universe.

There was no particular reason behind choosing Jan. 1, 1970 as Dennis Ritchie [Sept 9] has explained, "At the time we didn't have tapes and we had a couple of file-systems running and we kept changing the origin of time," he said. "So finally we said, 'Let's pick one thing that's not going to overflow for a while.' 1970 seemed to be as good as any."

In fact, Epoch time started off as Jan. 1, 197**1** and measured 1/60ths of a second. This meant that 2^{32} would have overflowed in 2.26 years which wasn't ideal. It was initially changed to Jan 1, 1972, then in 1973 to the date we all love.

UNIX enthusiasts have been known to host "time_t parties" to celebrate significant epoch time values. For example, see [Jan 26]; [Feb 13]; [Sept 9]; [Sept 13]. For more on time overflows see [Jan 4]; [Jan 19]; [Feb 7]; [Feb 7]; [Nov 17]; [Dec 31].

IEEE Computer Society

Jan. 1, 1971

The "IEEE Computer Group" changed its name to the "IEEE Computer Society" on this day, but versions of the organization had been running since 1946 when it was known as the American Institute of Electrical Engineers (AIEE [May 13]) subcommittee on Large-Scale Computing Devices.

In 1951, the Institute of Radio Engineers (IRE) formed its Professional Group on Electronic Computers (PGEC), which by the end of the 1950's had become IRE's largest subgroup, with 19 chapters and 8,874 members.

The AIEE and IRE merged in 1963 to become the Institute of Electrical and Electronics Engineers (IEEE), and the IEEE Computer Group inherited a lot of its organization from the PGEC.

In July 1966, the first issue of the bimonthly "Computer Group News" appeared. It was renamed *Computer* in 1972, becoming a monthly publication in 1973, and significantly increased its tutorial-oriented content.

The IEEE is one of the trinity of professional societies that computing professionals tend to join, the others being the SIAM [April 30] and ACM [Sept 15].

Kanji Ghosts

Jan. 1, 1978

JIS X 0208 is a two-byte character set standard containing 6879 kanji symbols for writing Japanese. Its official designation is JIS C 6226-1978, the Code of Japanese Graphic Character Set for Information Interchange (情報交換用漢字符号系, Jōhō Kōkan'yō Kanji Fugōkei).

It was released by the Japanese Minister of International Trade and Industry on this day, and subsequently revised in 1983, 1990, and 1997.

A year after the standard debuted, disturbing reports started appearing of 63 kanji characters that could not be found in conventional dictionaries. They came to be known as "ghost" characters (幽霊文字, yūrei moji).

In 1997 a vigorous investigation was unveiled to reveal where they had come from. It is completely untrue that all the members of the team of detectives disappeared without trace.

ARPANET Loves TCP/IP

Jan. 1, 1983

Prev: [Sept 1]

All computers on the ARPANET [Oct 29] were required to have adopted TCP/IP (Transmission Control Protocol / Internet Protocol) [May 5], by this day, replacing the out-moded NCP (Network Control Protocol). As such, today is often marked as the start of the Internet.

TCP/IP's main advantage over NCP is that it was designed to support the interconnection of different packet-switching networks (e.g. see [Nov 27]). Also TCP provides its own error recovery and end-to-end reliability checks.

One drawback of NCP was that its message routing functionality only used 8-bit addresses, which allowed a machine to talk to at most 256 others. TCP/IP employed 32-bit addresses, allowing for approximately 4 billion hosts. (Of course, this would later prove to be way too small as well, prompting a switch to IPv6 [Dec 00]).

A TCP Transition button. Photo by Vint Cerf.

The change-over had been announced back in Nov. 1981 in RFC 801 written by Jon Postel [Aug 6], where he gently suggested that people should start working on the transition by Jan. 1982. Fortunately, the incentive to switch was greatly increased in March 1982 when a US military directive stated that TCP/IP would be mandatory for DoD communications networks.

Dan Lynch at the Information Sciences Institute (ISI) at the University of Southern California handled most of the troublesome logistics involved in the change-over. UCLA student David Smallberg also documented the transition in no less then 15 RFC documents, RFC 842 – RFC 876.

For such an important event, the only souvenir created at the time was an "I survived the TCP/IP switchover" button.

Circuit City

Jan. 1, 1984

"Circuit City" was listed on the New York Stock Exchange on this day, although it had been around since 1949, although as the company Wards. During its heyday in the 1980's and 1990's, "Circuit City" was the second-largest US electronics retailer after "Best Buy" with more than 100 outlets. Such was its success that it was included as one of the 11 exemplary companies in Jim Collins' bestselling 2001 book, "Good to Great".

This must have tempted the fates since following several poor business decisions in the early 2000's, the company declared bankruptcy in 2008 and closed in 2009. Alan Wurtzel, who spent 13 years as CEO before retiring in 1986, went on to write "Good to Great to Gone: the 60 Year Rise and Fall of Circuit City" in 2012.

Another company featured in Collins' book was "Fannie Mae", which became infamous during the US mortgage crisis of 2007.

Oldest Domain Name

Jan. 1, 1985

The Domain Name System (DNS [Nov 18]) allows Internet users to connect to remote machines by name without having to specify a network path, or use a difficult-to-remember numerical address.

RFC 920, published in Oct. 1984, created seven generic top level domains (gTLDs) for corporations, schools, government bodies, and the military.

The first domain name, Nordu.net, was registered on this day to a Scandinavian research group, and is still in use. It consists of several Nordic research and education networks, including SUNET of Sweden, UNINETT of Norway, FUNET of Finland, Forskningsnettet of Denmark, and RHnet of Iceland.

Symbolics.com became the first registered ".com" domain on [March 15] 1985.

The Internet Society Founded

Jan. 1, 1992

The Internet Society (ISOC) was founded by Vint Cerf [June 23] and Bob Kahn [Dec 23] in order "to promote the open development, evolution and use of the Internet for the benefit of all people throughout the world". ISOC currently has over 70,000 members, and supports over 120 chapters based on geographical location or special interests. It's also the proud parent of the Internet Engineering Task Force (IETF [Jan 16]), and established the "Internet Hall of Fame" in 2012 during its 20th anniversary.

ISOC should not be confused with the Internal Security Operations Command (ISOC), the political arm of the Thai military.

Dante Enters the Inferno

Jan. 1, 1993

An eight-legged robot named Dante, built by a team from Carnegie Mellon, climbed into Antarctica's Mount Erebus volcano. Dante was 9.8-feet long, 5.6-feet wide, weighed almost 1,000 pounds, and moved at a maximum speed of 6.6 feet a minute. It employed a laser range-finder with a 350-degree field of view to help guide its descent.

During most of its descent, it was operated via satellite from NASA's Goddard Space Flight Center, with a deliberate time lag of 2.5 seconds, similar to the actual delay when operating a robot on the Moon. NASA hoped that Dante's performance would give it some tips on how to successfully operate robots on the Moon and other planets.

It managed to collect a small amount of data before its communications tether failed.

The robot was named in honor of "The Divine Comedy," by Dante Alegheri, which recounts the poet's journey into the underworld, which includes passing through Erebus, the mist that obscures the entry to hell.

A detail of Domenico di Michelino's fresco in the Duomo in Florence showing Dante holding a copy of the Divine Comedy. Photo by Jastrow.

The project's Dante allusions were numerous. For instance, the cart used to carry the robot was called Geryon, after a flying demon who gives Dante a lift. Also, early plans included a transport robot named Virgil; in the poem Virgil guides Dante during his journey.

For more Dante, see [July 16].

Screen Tax

Jan. 1, 1995

The Brussels city council approved a 1,000 Belgian franc tax per year on all computer screens used by businesses. The city expected to raise $900,000 per year from the levy.

The Brussels regional government considered this idea so bad for business investment, and for the image of the region, that it offered money to the boroughs to not impose the tax.

In 2007, the mayor of Sint-Lambrechts-Woluwe, one of Brussel's municipalities, announced plans to tax all “antennas for the transmission of data”.