# Nov. 30th

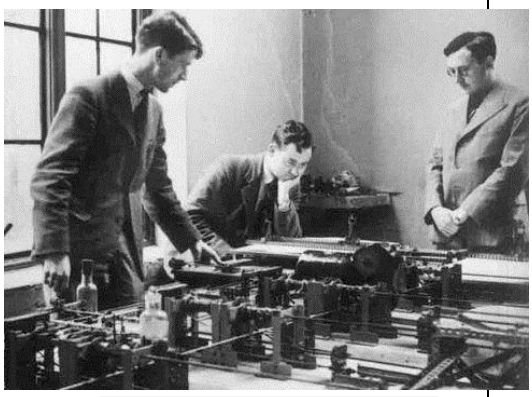
## Meccano

### Nov. 30, 1901

Meccano is a model construction system consists of reusable metal strips, plates, wheels, axles, and gears, connected using nuts, bolts, and screws. It was invented in 1898 by Frank Hornby in Liverpool, UK, and he was granted a patent on this day (GB 190100587). The Meccano name is short for "Mechanics Made Easy", and is perhaps derived from "Make and Know".

Hornby was also responsible for Hornby model railways (1920) and Dinky Toys (1934), two other UK toy icons.

Erector was a separate US company, unrelated to Meccano, founded by magician Alfred Carlton Gilbert in 1911. Erector sets quickly became the most popular construction toy in the US, most likely because it was the only one to contain a motor. It also offered a wider range of parts – over 70 types. It was only in 2000 that Meccano and Erector became a single company.



The Meccano differential analyser in Cambridge, c. 1937. Maurice Wilkes [June 26] is on the right. Photo by Tim Robinson and William Irwin.

Meccano's place in computing history dates from 1934 when Douglas Hartree [March 27] and Arthur Porter began using it to build a differential analyzer (a type of analogue computer) in Manchester [Jan 24]. A similar machine was constructed by J.B. Bratt at Cambridge in 1935.

Only the integrator of the Manchester machine survives, and is on display in the Science Museum in London. However, in 2005 Tim Robinson installed a fully working Meccano differential analyzer at the Computer History Museum [Sept 24], and later constructed two models of Charles Babbage's difference engine [June 14] also out of Meccano.

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## Thomas A. Throop

### Born: Nov. 30, 1935;

USA
Died: May 5, 2001

In 1958, Throop wrote the first ever program to play bridge. However, the machine, a UNIVAC I [March 31], only had a 1,000-word memory, so play was limited to one round. At the time, Throop was working at a Navy lab in the District of Columbia.

Throop went on to write bridge applications for RadioShack [Feb 2], Apple, and Commodore. In the early 1980's, he wrote the first book about bridge software, and coded the popular bridge program, Bridge Baron, which is now at version 29.

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## ENIAC Reported

### Nov. 30, 1945

Prev: [May 00] Next: [Feb 15]

J. Presper Eckert [April 9], John Mauchly [Aug 30], John Brainerd [Aug 7], and Herman Goldstine [Sept 13] issued a report on the completed ENIAC [Feb 15]: "Description of the ENIAC and Comments on Electronic Digital Computing Machines", discussing how it operated and how it was programmed. This arguably makes it the first publication on programming a computer. However, it was issued with a "Restricted" classification, so only 91 copies were distributed to the military and government.

The ENIAC was big: it occupied over 1,500 square feet and weighed 27 tons. It contained 17,500 vacuum tubes, 70,000 resistors, 10,000 capacitors, 7,200 diodes, 1,500 relays, and 6,000 manual switches, held together by five million hand-soldered joints. The heat generated could raise the room temperatures to 120 degrees.

Every vacuum tubes was checked every week. Initially, several tubes burned out each day, but their reliability got better. By the time, the ENIAC was moved to the Ballistic Research Laboratory [July 29] in 1947, a tube only failed every two days on average, and could be replaced within 15 minutes.

Presper Eckert remembered later: "The tubes were off-the-shelf; we got whatever the distributor could supply in lots of 1,000. We used 10 tube types but could have done it with four; we just couldn't get enough of them." The different types meant that the ENIAC required 78 different DC voltage levels.

To figure out which type of wiring to use, Eckert starved lab rats for a few days then gave them samples of the different types of cable to determine which they gnawed through the least.

The ENIAC was fast: about 1,000 times faster than the Harvard Mark I [Aug 7] from 1944, and 10,000 times the speed of a human computer when given the same calculation.

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## Hans Peter Moravec

### Born: Nov. 30, 1948;

Kautzen, Austria

Moravec works on robotics and AI, in particular on computer vision techniques for determining the regions of interest in a scene. He's also a futurist, focusing primarily on transhumanism [Feb 12].

Between 1973 to 1980, Moravec developed the first stereo vision system for the Stanford Cart

mobile robot. Stereo images were generated by moving a black-and-white video camera from side to side. It helped that the cart mostly operated indoors in a room filled with simple polygonal objects, painted in contrasting black and white. The objects were uniformly lit, with two or three spaced out over 20 meters. The cart moved in one meter spurts separated by ten to fifteen minute pauses for image processing and route planning.

On Oct. 25, 1979, the cart successfully crossed a chair-filled room without human intervention. However, it took five hours to do so.

The cart had a long history at Stanford before Moravec's involvement, starting as a research vehicle to plan for remote moon missions.

## IBM 7090

### Nov. 30, 1959

The IBM 7090, announced in Dec. 1958, was a transistorized version of the vacuum tubed IBM 709, making it some six times faster, and the first commercial computer with transistor logic.

The 7090 used over 50,000 transistors and magnetic core storage, but still took up considerably less floor space than the 709, and required less power and air conditioning. It became the most popular large computer of the early 1960's.

The first two IBM 7090s were delivered on this day to Wernher Von Braun's group at NASA, and were utilized during the Mercury and Gemini projects. An IBM 7090 plays a prominent role in the 2016 film "Hidden Figures" about those times.

7090s were employed by the US Air Force for almost 30 years as part of their their Ballistic Missile Early Warning System (BMEWS). SABRE [Nov 5] employed two 7090s as its computing center, and MIT used one as the test bed for its CTSS time-sharing OS [May 3]. In 1960, CBS had an IBM 7090 predict the outcome of the presidential race between John F. Kennedy and Richard Nixon. It incorrectly decided that Nixon would win.

Dual 7090s at NASA during Project Mercury. Photo by NASA.

A 7090 installation was featured in the motion picture "Dr. Strangelove", with a printer playing a pivotal part in the plot (as the hide out for a radio).

The 7090 had an unusual quirk: if you issued a "Read" instruction to a printer, it would give you the correct time. The machine also had a light which came on when the pressure of the oil for cooling the core memory was running low.

During its development, it was called the "709-T" (for Transistorized), which because of how it sounded when spoken, led to the device being rechristened the "7090".

IBM released a faster version – the 7094 – three years later, which added double-precision floating point, but remained backward compatible. The use of a "4" harked back to the IBM 704 [May 7].

## Kevin Lee Poulsen

### Born: Nov. 30, 1965;

Pasadena, California

Poulsen is a former black-hat hacker (pseudonym: "Dark Dante"), now a journalist specializing in security and hacking issues.

In the "bad old days" of 1990, Poulsen and Justin Petersen exploited a security hole they found in Pacific Bell's test and maintenance system. They used it to control the phone lines of the KIIS-FM 102 radio station to win several call-in contest prizes, including two Porsches, $20,000, and two Hawaiian vacations.

As a journalist, Poulsen broke the story of the arrest of Chelsea Manning [Nov 28] in June 2010. As a "white-hat" hacker, Poulsen, Aaron Swartz [Nov 8], and James Dolan developed SecureDrop for secure communication between journalists and their sources.

## Multics

### Nov. 30, 1965

Multics (Multiplexed Information and Computing Service) was an early time-sharing OS, based around the concepts of a hardware supervisor, single-level (virtual) memory using paging, dynamic hardware reconfiguration, and a hierarchical file system. Several papers on Multics were presented on this day at the 1965 Fall Joint Computer Conference held in Las Vegas.

The project began in 1964 as a collaboration between MIT's Project MAC [July 1], Bell Labs [Jan 1], and General Electric, with Fernando J. Corbató [July 1] as team leader. It was influenced by MIT's earlier CTSS system [May 3].

Multics went on to influence UNIX's [Oct 15] design, since Ken Thompson [Feb 4] and Dennis Ritchie [Sept 9] both worked on the system at Bell Labs. When Bell dropped out of the project in 1969 after deciding that Multics was too costly, Thompson wanted to continue using time-sharing computing. However, he also said that Multics suffered from a bad case of "second-system

syndrome," with too many new features being tried out at once.

Multics was eventually released in the early 1970's, and remained in service until the early 2000's on several mainframes.

## Project Genie

### Nov. 30, 1965

Project Genie at the University of California, Berkeley is often described as a smaller, West Coast counterpart to MIT's Project MAC [July 1]. It was set up in 1964 by David Evans [Feb 24] and Harry Huskey [Jan 19] and research members later included Butler Lampson [Dec 23], Peter Deutsch [Aug 7], Ken Thompson [Feb 4] and Chuck Thacker [Feb 26].

Most notably, it produced the Berkeley Timesharing System, which was first demonstrated at the same conference in Las Vegas as Multics [previous entry]. Later it was commercialized as the OS for the SDS 940 [July 24].

Project Genie pioneered several hardware techniques for OSes, such as separate user modes, memory paging (first used in Manchester's Atlas [Dec 7]), process forking, and protected memory. Software originating in Genie included the line-oriented text editor QED [March 26], command-line completion, and state-restoring crash recovery. These ideas influenced the development of TENEX for the PDP-10 [Nov 29], and UNIX [Oct 15], which used its concept of forking.

The Project Genie team decided to leave Berkeley in 1968 to start their own company, Berkeley Computer Corporation (BCC). Although BCC failed, many of the staff, including Lampson, Thacker and Deutsch, joined the recently formed Xerox PARC [March 1].

## Pick OS Ships

### Nov. 30, 1973

Pick was a multiuser, time-sharing OS built around a database system, and named after one of its developers, Richard A. (Dick) Pick . The database employed a 'hash-file' data management system, and all of Pick's data structures were derived from such files. Although largely forgotten today, in the early 1980's some observers saw Pick as a strong competitor to UNIX [Oct 15].

Pick began life in 1965 as the Generalized Information Retrieval Language System (GIRLS) which Don Nelson and Pick implemented on an IBM System/360 [April 7] at the aerospace company, TRW.

In his spare time, Pick helped create an artificial reef off Newport Beach as a way of preserving marine life and the coastline.

## Xianxingzhe Excitement

### Nov. 30, 2000

*The Chinese People's Daily* ran an article entitled, "The Forerunner Advances to a New Century", which described the Xianxingzhe (Chinese for "forerunner"), the first bipedal humanoid robot built in China, at the Chinese National University of Defense Technology. The robot stood 140 cm tall, weighed 20 kg, and could move at a speed of two steps per second.

Several Japanese sites made fun of the robot (which they called the Senkousha), due to its unusual protruding joint near the robot's crotch region, which one article described as a "cannon". A few games were released utilizing this cannon concept.

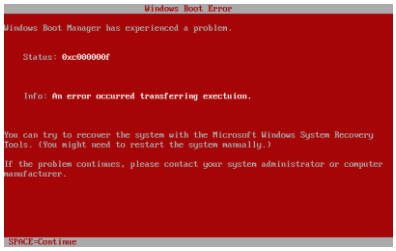
For more robot men, see [Feb 00], [Feb 24], [March 23], [March 24], [April 16], [April 30], [July 17], [July 30], [Sept 15], [Nov 11], [Dec 22].

## Windows Vista

### Nov. 30, 2006

Prev: [Oct 25] Next: [Oct 22]

MS Windows Vista (codenamed Longhorn) was the first major upgrade to Windows since XP, and today's business version was released a mere two years behind schedule; it took a further two months for the consumer version to appear. The delay was mainly due to the debacle over Cairo [Dec 14].




Longhorn's Red Screen of Death. Photo by Ih8evilstuff.

One objective with Vista was to improve security, through the inclusion of DRM [Oct 3] technologies. Unfortunately, users only seemed to notice that this made boot times longer, and adding more authorization prompts. Ironically, the problem was that the stop-gap security elements offered up by Windows XP Service Pack 2 seemed good enough.

The most visible new feature in Vista was 3D navigation among desktop applications, which was admitedly beautiful to look at, but also a huge resource hog for the typical PC of the day. Microsoft arguably made matters more difficult by claiming that "nearly all PCs on the market today will run Windows Vista", which was optimistic to say the least. According to *The Times* newspaper, the full set of features "would be available to less than 5 percent of Britain's PC market".

Another radical change was that Vista now displayed error messages on a red background rather than the more familiar blue [July 27]. This caused

outrage amongst Microsoft purists who had grown up with (and perhaps even loved) the BSoD.

In June 2008 (18 months after Vista's launch), Forrester Research reported that just 8.8% of enterprise PCs worldwide were running the OS. Meanwhile, Microsoft put Windows 7 on an accelerated release schedule.

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## Mypods and Boomsticks

### Nov. 30, 2008

Today's "The Simpsons" episode features numerous parodies of Apple [April 1], and its products.

Lisa purchases a "MyPod" [Oct 23] from Krusty at the Mapple Store [May 19], and quickly becomes obsessed with it until she gets a $1200 "MyBill". Deciding to protest, she visits Mapple's undersea headquarters and begs CEO Steve Mobbs [Feb 24] to consider introducing a reduced payment plan. Mobbs instead offers her a job at Mapple to help with the bill, but this turns out to involve her standing on a street corner dressed as a MyPod, handing out Mapple pamphlets and telling people to "Think Differently" [Sept 28].

For more Simpsons, see: [Jan 12], [Feb 15], [Nov 8], and [Nov 13].

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