June 4th

Hacking Marconi
June 4, 1903

British stage magician, and manager of the Anglo-American Telegraph Company, Nevil Maskelyne hacked into a demonstration of Guglielmo Marconi's [Dec 12] radio communications system being held at the Royal Institution in London.

Marconi's plan was to send a message from Poldhu in Cornwall to John Ambrose Fleming [Nov 7] at the institute. But Maskelyne hijacked the signal, and repeatedly transmitted the word "rats" instead. He followed that with the phrase, "There was a young fellow of Italy, who diddled the public quite prettily," and various rude lines from Shakespeare.

Maskelyne wanted to ridicule Marconi's claims of "secure and private communication" based on the transmitter being tuned to broadcast on a precise wavelength. Maskelyne also disliked Marconi because his patents kept hindered Maskelyne's own research.

Fleming subsequently sent an angry letter to *The Times*, denouncing the "scientific hooliganism", calling it "an outrage against the traditions of the Royal Institution". He asked the newspaper's readers to help him find the culprit, and four days later a gleeful letter from Maskelyne, confessing to the attack, was printed.

Other firsts in telegraphic messaging occurred on [Dec 12] 1901 and [Jan 18] 1903.

Clifford Paul Stoll
Born: June 4, 1950;
Buffalo, New York

While working as a sysadmin at the Lawrence Berkeley Laboratory (LBL) in the mid-1980's, Stoll happened across a 75-cent discrepancy in a defunct account. It turned out that a hacker was using the LBL as a jumping-off point into the ARPANET, and from there to MILNET [April 4], and various Department of Defense computers. The intruder was a young German hoping to get rich quick by selling secrets to the KGB. The investigation is explained in great detail in Stoll's entertaining "The Cuckoo's Egg" (1989),

Stoll is also remembered for various predictions he made in his 1995 tome, "Silicon Snake Oil". He posited that e-commerce was baloney with no future, but was optimistic about the future of printed news publications ("no online database will replace your daily newspaper"). Stoll commented in 2010: "Of my many mistakes, flubs, and howlers, few have been as public as my 1995 howler"

Stoll currently sells blown-glass Klein bottles, which he stores underneath his home, and accesses with a homemade robotic forklift.

DRAM Patent
June 4, 1968

Robert H. Dennard, working at the IBM T.J. Watson Research Center, was granted a patent for one-transistor dynamic random access memory (DRAM) (US 3,387,286). A DRAM cell contains little more than a capacitor and transistor, a design that makes it ideal for building low-cost, high-capacity memory.

Soon after, Intel built a 1-kilobit DRAM chip (the Intel 1103 [Oct 00]) using a three-transistor cell design, which rapidly became very popular. By the mid-1970's, 4-kilobit chips using Dennard's design had become widespread.

Intel's Intellecs
June 4-8, 1973

Intel's Intellec microcomputers were among the first ever sold, predating the Altair 8800 [Dec 19] by a year, but released just after the Micral N [Jan 15]. The Intellec 4 used the Intel 4004 [Nov 15], but the Intellec 8 switched to the 8008 [April 00].

However, Intel didn't market the Intellec as a general-purpose microcomputer, but rather as a development system for programming chips that would later become part of embedded systems such as calculators.

The Intel Intellec 4 MOD 40. Photo by Kyle Owen. CC BY-SA 3.0.

Nevertheless, the Intellec 8 could drive a teletype [April 00], a punched paper tape reader, and a CRT. Its software included a simple OS, assembler, and debugger.

Star Trek II: The Wrath of Khan Released
June 4, 1982

Admiral James T. Kirk [March 22] (William Shatner) and the crew of the USS Enterprise [Sept 8] faced off against the genetically engineered Khan Noonien Singh (played by Ricardo Montalbán).

On the special effects side, the movie is remembered for "The Genesis Effect", the first complete computer-generated sequence in a movie; it was the brainchild of ex-Boeing engineer

Loren Carpenter, working at George Lucas' Industrial Light & Magic (ILM [Sept 12]). The sequence cleverly utilized the look of earlier satellite fly-by simulations made by Jim Blinn [Aug 3] for NASA's Jet Propulsion Lab.

The ILM graphics group, led by Alvy Ray Smith (who later co-founded Pixar [Feb 3]), produced the visuals using a DEC VAX and an Evans and Sutherland [May 16] Picture System. The clip lasted just over a minute, but took two person-years of work to complete.

For more "Star Trek", see [Sept 8], [Nov 26], [Oct 28].

Ariane 5 Explosion
June 4, 1996

Europe's newest satellite-launching rocket, the Ariane 5, was intentionally blown up 36.7 seconds after being launched from Kourou, French Guiana, after it began to veer off course.

On board was a $500 million package of four scientific satellites, and was the first flight of the rocket after a decade of development costing $7 billion.

Ariane 5 mock-up (full size). Photo by Poppy. CC BY-SA 3.0.

Upon investigation, it turned out that the guidance system had tried to convert sideways velocity from a 64-bit floating point value to a 16-bit signed integer. The number was too big, and an overflow resulted. There

was a backup system, but that failed in the same way.

The problem had existed in the software used by the Ariane 4, but hadn't revealed itself since the Ariane 4 was a slower rocket.

Even worse, the offending code was only used to optionally reset the system before launch, and could have been disabled if the technicians had been aware of the problem. Instead, the engineers (being prudent) had decided to leave those routines running for the first 40 seconds of flight to make it easier to reboot the system in the event of a hold in the countdown.

For more numerical errors, see [Feb 10], [Feb 25], [Aug 1], [Sept 23], [Oct 24].

Video Game Pain
June 4-6, 2003

A study, "Differential Effects Of Video Gameplay on Pain Threshold and Tolerance: Cognitive vs. Action Games", co-authored by Bryan Raudenbush, Jerrod Koon, and Sarah Lilley was presented at NASPRA (North American Society for the Psychology of Sport and Physical Activity).

Their work indicated that video games can be an effective way of making patients forget about pain, with the most "distracting" genres being sports and fight-based.

Six types – action, puzzle, arcade, fighting, sports, and boxing – were examined in the study, with the participants playing each type for ten minutes before a cold pressor test. This involved the subject having their hand immersed in an ice water bucket, usually for a minute. Changes in the person's blood pressure and heart rate were measured.

Raudenbush noted, "Physicians could possible implement this in their office to aid in distraction during a painful procedure such as an injection or dental work."

WHATWG
June 4 2004

Representatives from Mozilla [Jan 23] and Opera [July 14], led by Ian "Hixie" Hickson, formed the Web Hypertext Application Technology Working Group (WHATWG). It was founded in response to the W3C's [Oct 1] recent change of focus away from the semantic web, in favor of XML [Feb 10].

WHATWG concentrated on improving upon W3C's HTML 4.0, which was probably a wise move since W3C eventually decided that its XHTML 2.0 approach was impractical and pivoted back towards WHATWG so they could work together on a single proposal; the HTML 5 specification was released on [Oct 28] 2014.

WHATWG can be pronounced in various ways, including what-wee-gee, what-wig, and what-double-you-gee. There is clearly a need for some standardization.