Dec. 14th

Trans-Pacific Telegraph Cable Begins

Dec. 14, 1902

Before the Pacific cable was laid, the only way to send a telegram from the US west coast to China or Japan was back across the continent to the east coast, then to England (the transatlantic cable was completed on [Aug 5] 1858), and via Russia or India.

The cable ship Silvertown began laying the Pacific cable from from Ocean Beach, adjacent to the Cliff House in San Francisco on this day. After positioning 2,227 nautical miles (nm) of cable, the line came ashore at Sans Souci Beach, Waikiki in Honolulu on Jan. 1, 1903. The first test message was sent the same day, and the transmission of public messages began on Jan. 5.

Three more cables were put into place during 1903: Honolulu - Midway Island:1336 nm; Midway Island – Guam: 2656 nm; and Guam – Manila: 1642 nm. The Manila cable and Pacific cable in Hawaii were spliced together on [July 4], and celebrated by transmitting the first round-the-world message. From the Philippines, cables run by the British Eastern & Associated Telegraph Companies carried the messages onto Europe and Britain.

Stewart Brand

Born: Dec. 14, 1938;

Rockford, Illinois

Brand was the editor of the "Whole Earth Catalog", a counterculture DIY magazine that appeared several times a year between 1968 and 1972, and occasionally after that until 1998. A typical edition would include tips on welding, handling drug busts, and building your own geodesic dome.

Stewart Brand (2018). Photo by Christopher Michel. CC BY-SA 4.0.

In the mid-1960's, Brand was briefly associated with Ken Kesey and his “Merry Pranksters” [May 13], and makes a guest appearance on the second page of Tom Wolfe’s book, "The Electric Kool Aid Acid Test” (1968), wearing a lab coat and tie, but no shirt.

In 1966 he co-founded the "Trips Festival", featuring performance art, psychedelic drugs, live readings by Kesey, and the San Francisco debut of the "Grateful Dead".

This background in event planning got him an invite to assist Douglas Engelbart's [Jan 30] team in organizing "The Mother of All Demos" [Dec 9] in 1968. His background in photography meant that on the day he was in charge of the camera filming the event. Incidentally, the "Whole Earth Catalog" store was located across the street from SRI.

On [Oct 19], 1972, he organized the “Intergalactic Spacewar Olympics”, the first video game tournament, and wrote about it and other west coast computer developments in a 9,000-word article, “SPACEWAR: Fanatic Life and Symbolic Death Among the Computer Bums” for *Rolling Stone* magazine [Dec 7]. This was long before computers were considered cool.

In 1985, he co-founded The WELL [April 1], an early online community.

Some quotes: “Information wants too be free. Information also wants to be expensive.”

“Once a new technology starts rolling, if you’re not part of the steamroller, you’re part of the road.”

Stephen Arthur Cook

Born: Dec. 14, 1939;

Buffalo, New York

Cook is known for his foundational work on NP-completeness. An NP-complete problem is one whose solution can be checked quickly, but has no known fast way to find that solution in the first place. The "P versus NP" question asks whether we’ll ever find a fast solution for these kind of problems.

Cook and Leonid Levin [Nov 2] independently discovered the existence of NP-completeness. While Cook considered problems involving Boolean formula, Levin looked at search problems.

The Cook-Levin theorem makes the "P versus NP" question more precise by stating that if a particular Boolean formula problem can be solved efficiently then every NP problem can be solved quickly.

Aside from this question being of theoretical interest, it also has some serious money behind it. "P versus NP" is one of the seven Millennium Prize Problems proposed by the Clay Mathematics Institute. An answer to any of them will earn the solver an award of $1,000,000.

Bùi Tường Phong

Born: Dec. 14, 1942;

Hanoi, French Indochina
Died: July 1975

Phong was the inventor of the Phong reflection model and the Phong shading interpolation method, techniques still used widely in computer graphics.

His reflection model combines the diffuse lighting of rough surfaces with the specular reflection of shiny areas, while his shading model combines reflection and smoothly varying surface normal vectors to add shadows.

As students, Phong, Robert McDermott, James Clark [March 23] and Raphael Rom created a 3D image of a Volkswagen Beetle that actually looked like the real thing, and versions of it still regularly crop up in journals and movies. The "Beetle" project was organized by their teacher, Ivan Sutherland [May 16], and the car was chosen for being a recognized symbol of global culture, because it was complex enough to require a group effort to create, and because Sutherland's wife, Marsha, owned one.

Dennis Ting later calculated that the image generation cost more in computer time than Sutherland's real Beetle. However, the model has easily outlasted Sutherland's vehicle.

AutoCode

Dec. 14, 1952

The Manchester Mark 1 (MADM) [June 16] didn't have an assembly language; instead, programmers were expected to master a rather daunting base-32 machine code designed by Alan Turing [June 23].

After the MADM was replaced by the Ferranti Mark 1 on [Feb 12] 1951, Alick Glennie [June 00] began developing an assembly language called Autocode for it. Its compiler was quite possibly the first one ever, although the software for translating A-0 [May 2] may have appeared earlier.

Glennie delivered a lecture about Autocode at Cambridge in Feb. 1953 based on notes he had prepared on this day. Although the language was much clearer than Turing's machine code, it was still very machine dependent.

The next language for the Ferranti Mark 1 was Mark 1 Autocode, developed by Tony Brooker in 1955, and this was almost completely machine-independent. It provided a set of named memory locations (n1 to n18) for storing floating point values, indirectly addressable "vector" variables, math functions (log, exp, sin, etc.) and conditional jumps to labelled lines.

Mark 1 Autocode inspired many other languages in the 1950's and 1960's, so much so that "autocode" became a generic term for "programming language" during this time.

Peter Norvig

Born: Dec. 14, 1956;

Rhode Island, USA

Norvig and Stuart Russell wrote "Artificial Intelligence: A Modern Approach", the leading college textbook in the field. The cover of the current edition depicts the final position from the decisive game 6 of the 1997 match between chess champion Garry Kasparov and Deep Blue [May 11].

Peter Norvig (2013). Photo by Derrick Coetzee. CC0.

Norvig is a director of research at Google, and was responsible for maintaining and improving Google's core web search algorithms from 2002 to 2005.

In 2012 Norvig and Sebastian Thrun [May 14] taught the Stanford course "Introduction to Artificial Intelligence," one of the first MOOCs [Sept 15].

In 2001, Norvig published an article called "Teach Yourself Programming in Ten Years", arguing against fashionable introductory programming textbooks. He's also the author of the "Gettysburg PowerPoint Presentation", a satire of bad presentation practices [April 20], and penned the world's longest palindromic sentence.

He's a former member of the Western National Champion Flying Circus Ultimate Frisbee team.

Context MBA Announced

Dec. 14, 1981

Context MBA was the first integrated PC software, combining spreadsheets, databases, charting, word processing, and communication features. A macro facility was added in later versions.

MBA was released in Feb. 1982 for the ill-fated Apple III [May 19], but later ported to the IBM PC [Aug 12]. This was relatively easy since the software ran on top of the UCSD Pascal p-System [Oct 22], although this had an adverse impact on performance. For example, recalculations could take minutes in large spreadsheets. Early versions also employed a copy-protection scheme that required frequent, and annoying, disk accesses.

Lotus 1-2-3 began shipping on [Jan 26] 1983, and included most of the graphing and database capabilities of MBA, but optimized for speed on the IBM PC. Jonathan Sachs, the author of 1-2-3, decided against including word processing since he believed that it was a major

reason for MBA's poor performance.

Robert Carr, one of the MBA designers, later went on to develop another popular office suite, Ashton-Tate's Framework [Aug 00].

Xerox Sues Apple

Dec. 14, 1989

Xerox filed suit against Apple, seeking more than $150 million in royalties and damages. It asserted that the GUI employed by Apple's Lisa [Jan 19] and Macintosh [Jan 24] unlawfully used copyrighted technology that Xerox had developed for the Xerox Star [April 27]. This somewhat tardy suit was probably prompted by Apple's recent legal challenges against Microsoft and Hewlett-Packard. [Aug 24] for GUI infringements.

On March 23, 1990, Judge Vaughn R. Walker threw out five of the six counts. Unfortunately, Xerox had waited too long. It prompted Steve Jobs [Feb 24] to dismiss Xerox as an organization so dysfunctional that they "couldn't even sue anyone on time."

Commander Keen

Dec. 14, 1990

The "Commander Keen" side-scrolling platform game series featured the eponymous Commander Keen, the secret identity of eight-year-old genius Billy Blaze, who defends the Earth and the galaxy from alien threats.

The first game, "Commander Keen in Invasion of the Vorticons" was released on this day for MS-DOS [Aug 12]. It was divided into three episodes: "Marooned on Mars", "The Earth Explodes", and "Keen Must Die!"; "Marooned on Mars" was released for free to various BBSes by Apogee Software.

The game was developed by a team calling themselves "Ideas from the Deep", consisting of programmers John Carmack [Aug 20] and John Romero [Oct 28], designer Tom Hall [Sept 2], and artist Adrian Carmack (no relation to John).

Carmack had developed a clever (and fast) way to implement side-scrolling games for PCs, called adaptive tile refreshing. The team had knocked together a demo using the technique based on Super Mario Bros. 3 [Sept 13], but failed to convince Nintendo to invest in a PC port. Instead the team refocussed on "Commander Keen".

The response to the game's release was overwhelming. Typical Apogee [July 1] shareware games sold only a few thousand copies, but "Commander Keen" reached 30,000 in just months, and almost 60,000 over the next few years.

"Making Keen shareware was critical to its success," recalled Romero. "It was easily accessible to everyone and was legal to pass around. People could just give a copy to their friends to show them something really fun, and it was okay to do that."

The triumph of "Commander Keen" convinced the development team to found their own gaming company, id Software [Feb 1].

Cairo Demoed

Dec. 14-16, 1993

Cairo was the codename for Microsoft's next generation distributed OS. It was demonstrated publicly at the Win32 Professional Developers Conference (PDC), in Anaheim.

The plan was to ship Cairo as a replacement for both Windows NT [July 27] and Windows 95 [Aug 24], but persistent bugs made this impossible. Instead parts of the technology appeared piecemeal in other products. For example, some of the distributed components joined NT 3.1, and Cairo's messaging system was utilized in MS Exchange [June 11].

The only major element that never saw the light of day was WinFS (Windows Future Storage) a data management system based on relational databases. For a while, it looked like it might debut in Windows Vista [Nov 30], but that was kiboshed in June 2006.

The Great Mississippi Flood of 1927, US Route 51 between Mounds and Cairo, Illinois. Photo by Steve Nicklas, NOS, NGS - NOAA photo library.

Cairo doesn't refer to the capital of Egypt but a town in Illinois (pronounced Kay-Row) close to Interstate 57. Charles Dickens visited in 1842, and it later served as a prototype for the swampy, disease-filled settlement named Eden in "Martin Chuzzlewit" (1844). Cairo has the lowest elevation of any location in Illinois and is the only city surrounded by levees. It was evacuated during the 2011 Mississippi River floods.