# Sept. 29th

## Transcontinental Radio Telephone
### Sept. 29, 1915

The first transcontinental radio telephone test consisted of a conversation between two officers located at naval radio stations in Arlington, Vermont and Mare Island, San Francisco. The test resumed later the same night with a link up from San Francisco to Honolulu.

The application of radio telephony to military operations was considered so important (WWI was in progress in Europe), that technological details were kept secret.

This event shouldn't be confused with the first transcontinental call using a telephone line, which occurred back on [Jan 25], to promote AT&T's new service.

Nor should it be confused with the first commercial transcontinental transmission of a radio facsimile, from San Francisco to NYC on April 18, 1925. It consisted of a photograph of Louis B. Mayer of MGM Pictures giving actress Marion Davies a make-up box.

## CERN
### Sept. 29, 1954

The establishment of CERN (Centre Européenne de Recherche Nucléaire) was ratified by 12 European countries, with its primary mission to carry out fundamental research in particle physics. The lab's location near Geneva, on the Franco–Swiss border, had been decided back in 1952, and construction had started on May 17 of this year.

CERN's most major relevance to computing is that Tim Berners-Lee [June 8] began his work on the Web there on [March 12], 1989.

In 2000, the alleged time-traveller, John Titor [Nov 2] claimed that CERN would invent time travel in 2001. Probably that's been hushed up, along with the stolen canister of anti-matter described in Dan Brown's "Angels & Demons" (2000).

CERN's main site (2012). Photo by Brücke-Osteuropa. CC0.

## The Cal-Tech Project
### Sept. 29, 1967

Texas Instrument's Cal-Tech Project (short for "Calculator Technology") aimed to develop technologies for creating large-scale integrated (LSI) chips, together with a hand-held calculator using those chips. The work also had to grapple with battery technology and low-power displays.

The project grew out of a Sept. 1965 conversation between Jack S. Kilby [Nov 8], Jerry D. Merryman, and James H. Van Tassel. Merryman became the team's logic designer while Van Tassel built the compact keyboard and device packaging.

Merryman's design called for about 150 logic elements per chip, which was an order of magnitude larger than ICs being built at the time. However, the calculator could handle six-digit numbers, perform the four basic arithmetic functions, and print results on a thermal printer, all inside a box with dimensions of around 4 by 6 by 2 inches and weighing just 45 ounces.

On this day, Kilby, Merryman and Van Tassel filed a patent entitled "Miniature electronic calculator", which was granted on June 25, 1974.

Strangely, TI's management didn't want to build the calculator themselves, so they approached Canon Business Machines of Japan to manufacture it using TI parts. The Pocketronic was announced on [April 15] 1970, becoming the world's first hand-held pocket calculator.

## Cincom
### Sept. 29, 1968

Cincom was founded on this day in Cincinnati by Thomas M. Nies, Tom Richley, and Claude Bogardus in Nies' basement. The name was a contraction of "Cincinnati" and "computer." Nies had been an IBM sales representative, and Richley and Bogardus were former IBM technical staff.

Cincom's first product, released in Jan. 1970, was TOTAL, the first commercial database management system (DBMS) that wasn't bundled with a computer manufacturer's hardware. Eventually it was ported to several platforms, including to machines made by NCR, Honeywell, and DEC.

TOTAL's release coincided with IBM's decision on [June 30] 1969 to start unbundling its software from hardware purchases. Many observers thought this would trigger a boom for software firms, but change was slow at first because IBM charged so little for its applications.

Nevertheless, by 1980, TOTAL had cornered 64% of the independent DBMS market, and was the second company to reach $100 million in revenue (after Microsoft [Nov 18]).

Cincom wasn't the first company to sell DBMSs. Charles Bachman [Dec 11] had built the IDS system at General Electric in 1962–1963. Also, Rockwell,

working with IBM engineers, released a product on [Aug 14] 1968 that later became the Information Management System (IMS). In addition, IBM released CICS on [July 8] 1969. However, all of these were closely linked to hardware.

## Word 1.0
### Sept. 29, 1983

Microsoft released their first software application, Word 1.0 for MS-DOS. In its early days, the software had been called "Multi-Tool Word", but the name had been simplified.

Word's lead developer was Charles Simonyi [Sept 10], co-developer of Bravo [Oct 00]. He had hired Richard Brodie [Nov 10], a former Xerox intern, to become Word's primary software engineer.

It was the first commercial word processor to make extensive use of a mouse, perhaps not unrelated to the fact that Microsoft had just released its green-eyed mouse [May 2]. Indeed, one promotional strategy was to include a free mouse with Word. Microsoft also distributed 450,000 disks containing a demo version in the November issue of *PC World*. This was the first time a floppy disk had been included with a magazine.

The novel user-interface proved less than popular at first, perhaps because people were use to the command keys approach used in WordStar [Sept 00], the leading word processor of the time. Word also had to deal with strong competition from WordPerfect [Nov 26], another new kid on the block.

BYTE magazine criticized the Word documentation, calling it "a complete farce". *PC Magazine*'s review stated, "I've run into weird word processors before, but this is the first time one's nearly knocked me down for the count."

Word for Windows was released in 1989, and sales began to pick up with the release of MS Windows 3.0 [May 22] the following year.

## A Backhoe Attack
### Sept. 29, 1999

A "backhoe attack" occurs when construction crews inadvertently slice through high-capacity Internet cables. The problem is also known by the less sensational names, "Backhoe fade" or "JCB fade".

A backhoe loader. Photo by Tomasz Sienicki. CC BY 2.5.

For example, on this day, US Internet traffic was interrupted when an Ohio gas company accidentally severed four OC-192 ("Optical Carrier") lines carrying 40 Gbps of traffic. Data transmission slowed by twenty to fifty times.

Two other incidents that occurred at around the same time:

- October 16: A backhoe accident destroyed a major fiber-optic cable in Massachusetts, resulting in networking problems all along the East Coast.
- November 26: Railway workers severed an AT&T Canada optic fiber cable, causing communication failures throughout southern Ontario.

In 2004, the US Department of Homeland Security became concerned that terrorists might employ this approach to attack the country's communications infrastructure. This was prompted by a 2003 report by Sean Gorman which mapped America's fiber-optic paths, and showed how easy it was to locate critical choke points from perusing public records. Gorman remarked at the time, "We've looked at scenarios where we (could) have multiple fiber cuts that effectively disconnect the West Coast from the East Coast."