V for Victory
July 19, 1941

The BBC World Service began to transmit the opening four notes of Beethoven's Fifth Symphony, which in Morse Code [Oct 19] spells "V" (dit, dit, dit, dah), before every news broadcast to Europe, as part of its "V for Victory" campaign.

The idea for the campaign came from Victor de Laveleye, a Belgian producer, who saw it as a way to unify Flemish and French speakers. He picked "V" because it was the first letter of the French word Victoire (victory) and the Flemish word Vrijheid (freedom).

Incidentally, if . . – – – + ... – equals – . . . . then what does . – – – – + . . – – – equal?

Mark Crispin
Born: July 19, 1956;
Poulsbo, Washington
Died: December 28, 2012

Crispin is known as the father of IMAP, the Internet Message Access Protocol for retrieving e-mail from a server, which he developed at Stanford in 1985.

He was also the principal developer of the TOPS-20 mail system on DEC's 36-bit mainframes [Jan 4] in the late 1970s, and in the 2000s designed MIX, a high-performance, indexed, on-disk email storage system.

He was the author of two April Fools' Day [April 1] RFCs [April 7]: RFC 748 (TELNET RANDOMLY-LOSE) and RFC 4042 (Efficient Transformation Formats of Unicode).

First 3D Head
July 19, 1983

Michael W. Vannier, J. Marsh and J. Warren (from the Mallinckrodt Institute of Radiology in St. Louis) published the first 3D reconstruction of computed-aided tomography (CAT) slices of a human head. A CAT scan combines many X-ray measurements taken from different angles to produce cross-sectional images of an object.

The team used a CAD System UNIGRAPHICS on loan from the McDonnel Douglas Company, after Vannier discovered that the 3D analysis of aircraft surfaces is comparable to the evaluation of bony and soft-tissue facial surfaces.

The first ever clinical human CAT scan was performed on [Oct 1] 1970 by Godfrey Hounsfield.

Power Mac G4 Cube
July 19, 2000

This version of the Power Mac [March 14] was enclosed in an transparent case designed to eliminate the need for a cooling fan. Its cube-shaped design, by Jonathan Ive [Feb 27], was not unlike the NeXTcube [Sept 18] from NeXT, which Apple had acquired a few years before [Dec 20].

A Power Mac G4 Cube. Photo by Patrick Kuhl. CC BY 2.0.

In typical fashion, Steve Jobs [Feb 24] proclaimed, "The G4 Cube is simply the coolest computer ever. An entirely new class of computer, it marries the Pentium-crushing performance of the Power Mac G4 with the miniaturization, silent operation and elegant desktop design of the iMac [May 6]. It is an amazing engineering and design feat, and we're thrilled to finally unveil it to our customers."

The system sold very poorly due to its high price and the difficulties involved in upgrading its hardware. It is also remembered for the "cracks" in the cases. Apple said they were molded lines, but most people weren't convinced.

Nowadays, G4 Cubes are a popular candidate for "Macquariums"—fish tanks made from the chassis of Apple computers.

Climate Simulator
July 19, 2006

The Japanese government announced plans to simulate the global climate on the scale of decades by using their Earth Simulator (ES) highly parallel vector supercomputer and the Weather Research and Forecasting (WRF) model.

The ES was the fastest supercomputer in the world from 2002 to 2004, but was eventually displaced by the Earth Simulator 2 (ES2) in 2009, which in turn was superseded by the Earth Simulator 3 (ES3) in March 2015. We can only speculate on the name of the its successor.

The ES could support a spatial resolution of 4486 by 4486 horizontally which meant a grid spacing of 5 km with 101 levels vertically inside each square. A simulation could run in steps of six seconds.

A version of the WRF model tailored for hurricane forecasting, called HWRF ("h" for hurricane), became operational in 2007.

For early work on weather forecasting by "computer", see [May 20].

mov is Turing-complete
July 19, 2013

Stephen Dolan of the Univ. of Cambridge published the paper, "mov is Turing-complete" [Nov 12], in which he demonstrated how the excessively large x86 instruction set [June 8] could be reduced down to just a single instruction, mov.

Incredibly, it could be utilized to perform arithmetic, branching, loads, and stores without resorting to unusual addressing modes, self-modifying code, or runtime code generation. Admittedly, a program utilizing movs did require a single unconditional branch at the end to make non-termination possible.

This was not the first "single instruction" instruction set to be devised. In 1988, Farhad Mavaddat and Behrooz Parhami proposed a "subtract and branch if less than or equal" instruction.

Separate research by Pepijn de Vos in 2016 revealed that mov is by far the most commonly used x86 operation, as least for the tools in /usr/bin on Linux. This information can be obtained with a one-line command:

```
objdump -d /usr/bin/* |
cut -f3 | grep -oE "^[a-
z]+" | sort | uniq -c
```

He counted 411 different mnemonics, topped by 15,891,451 mov instructions which accounted for 33% of the output, followed by callq, je, and lea making up over half of all the instructions. There was also a very long tail of opcodes that only occurred once or twice.

Some estimates put the number of x86 instructions at around 700, meaning that around 300 instructions were not used at all in de Vos' /usr/bin.

Eliminating Net Neutrality
July 19, 2017

The Federal Communications Commission (FCC) requested public comments on a proposal to eliminate net neutrality [April 13], and received a staggering 21.7 million responses. Surprisingly, the vast majority were in favor of abandoning net neutrality, even though most anecdotal evidence pointed to the public being strongly in favor of it.

Upon investigation, a large fraction of the messages appeared to be fraudulent. For example, at 2:57pm EDT on this day, half a million similar comments were sent at exactly the same second, and another half a million came directly from Russian email addresses.

The New York State attorney general later estimated that nearly 10 million messages were sent using stolen identities of people who had no idea their names were being used.