May 10th

Oliver Gordon Selfridge

Born: May 10, 1926;

London, UK
Died: Dec. 3, 2008

Selfridge wrote several early papers on neural networks, pattern recognition, and machine learning, and is often called the "Father of Machine Perception."

His "Pandemonium" article ([Nov 24] 1958) is generally considered an AI classic. It introduced the notion of "demons" which record events, recognize patterns in those events, and can trigger new events according to those patterns. It proved to be such a successful model of human pattern recognition that it was adapted for use in cognitive psychology.

Much of Selfridge's career was spent at MIT's Lincoln Lab where he was associate director of Project MAC [July 1] in the 1960's.

Selfridge also authored four popular children's books: "Sticks", "Fingers Come In Fives", "All About Mud", and "Trouble With Dragons".

He was the grandson of Harry Gordon Selfridge, the founder of the Selfridges department store in London.

Victor B. Lawrence

Born: May 10 1945;

Accra, Ghana

Lawrence's work on digital signal processing for data communications led to significant advances in voice-band modems and digital subscriber lines in the late 1980's. He was the lead engineer behind AT&T's first 2400 bps full-duplex modem, and his innovations led to modems that could reach 56kbps.

He developed methods for packing more information into a signal, facilitating the introduction of digital video and radio, and the development of High-definition TV (HDTV). In 1997, he shared an Emmy for the HDTV Grand Alliance Standard [July 23].

As an advocate of bringing the Internet to poorer countries, Lawrence has led efforts to lay high-capacity fiber optic cable along the west coast of Africa.

The Pilot ACE

May 10, 1950

The Pilot ACE ran its first program at the UK National Physical Lab (NPL).

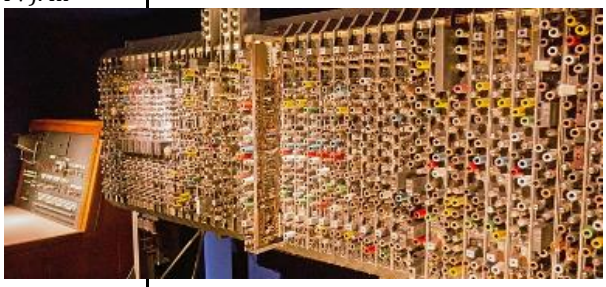
The machine was a simplified version of Alan Turing's [June 23] ACE proposal, which he'd presented to NPL management back on [Feb 19] 1946. The sluggish progress of that work was one reason why Turing moved to Manchester.

James H. Wilkinson [Sept 27] took over the project, and Donald Davies [June 7], Harry Huskey [Jan 19] and Mike Woodger were called in to simplify the design.

The resulting Pilot ACE used around 800 vacuum tubes, and employed mercury delay lines for its main memory of 128 words, which was later expanded to 352. A 4096-word drum memory was added in 1954.

The (Pilot) ACE was built without hardware for multiplication or division, in contrast to other computers of the time, and instead implemented fixed-point multiplication and division in software. That soon proved to be inadequate, and was changed.

The ACE's first public demonstration was in Dec. 1950, and it went into full service in late 1951. Although it was originally intended as just a prototype, it became a useful computing resource, especially after support for floating-point arithmetic was added.



The Pilot ACE. Photo by Antoine Taveneaux. CC BY-SA 3.0.

It was employed for a variety of problems, from differential equations and optical ray-tracing to traffic signal settings and the mathematical description of frozen fish.

A commercial spin-off, DEUCE, was manufactured by English Electric Computers [July 9] and became a bestseller in the UK in the 1950's. One of DEUCE's programming languages was called GEORGE, a stack oriented language using reverse Polish notation.

Teal's Pocket Transistors

May 10, 1954

Gordon Kidd Teal's team at Texas Instruments (TI [Oct 1]) successfully created a silicon-based transistor on April 14, 1954. On this day, he announced the work publicly at the Institute of Radio Engineers (IRE) National Conference on Airborne Electronics, with the words:

"Contrary to what my colleagues have told you about the bleak prospects for silicon transistors. I happen to have a few of them here in my pocket."

This wasn't the only piece of showmanship Teal exhibited during his talk, innocuously entitled "Some Recent Developments in Silicon and Germanium Materials and

Devices." He also utilized a gramoplayer to play Artie Shaw's big-band hit, "Summit Ridge Drive," with the volume amplified by germanium transistors. However, the music died instantly when Teal dunked one of the transistors into a beaker of hot oil. But when he repeated the demo with his silicon transistors, the music played on without faltering.

The first silicon transistor had actually been developed at Bell Labs by Morris Tanenbaum back on [Jan 26]. However, the work wasn't followed up since the process seemed poorly suited to large-scale manufacturing.

Teal approach offered substantial improvements in the fabrication process by using a single silicon crystal. This made the commercial production of silicon transistors viable. It was a turning point in TI's fortunes, with sales rising almost vertically because of the new chips.

Teal had started investigating the idea with single-crystalline germanium when he was a member of William Shockley's [Feb 13] group at Bell Labs. He also helped Shockley design the first reliable junction transistor, along with Morgan Sparks [July 6]. But Teal was homesick for his native Dallas, and moved to TI on Jan. 1, 1953.

Looking back on his career, Teal was particularly proud of the talent he recruited to his Central Research Lab (CRL) at TI. For instance, on [Sept 12] 1958 a promising young employee, Jack Kilby [Nov 8], created the first integrated circuit.

Quotron Patented
May 10, 1960

The Quotron I system provided the first computerized way for a stock trader to look up the most recent quote for a stock.

Jack Scantlin of Scantlin Electronics, Inc. (SEI) filed a patent for his system on this day, which was granted as US 3082402 on March 19, 1963.

The Quotron was essentially a CDC 160-A [June 00] with a magnetic tape storage unit that recorded all the data arriving on a stock ticker line [Dec 29]. A broker could enter a stock symbol on a terminal attached to the system to perform a search of the tape for information. By the 1970's, Quotron terminals were displaying stock bids, offers, and last sale prices.

Citicorp bought Quotron in 1986, by which time there were around 100,000 terminals operating Quotron's growth had been guided by George Levine, head of sales and marketing, who was known as "Mr. Quotron."

Numerous Quotron terminals can be seen in the quintessential 1980's money-makers movie, "Wall Street" (1987), starting Charlie Sheen and Michael Douglas (as Gordon Gekko).

Minitel Tested
May 10, 1981

Minitel was a French videotex service accessible through the telephone.

The first trial involving 1,500 residential customers in Ille-et-Vilaine, Brittany began on this day, and the service was rolled out throughout France in 1982 by the PTT (Postes, Télégraphes et Téléphones).

Minitel 1 (1982). Photo by im awsome. CC BY-SA 3.0.

The network was officially called Télétel, but soon became better known by the name of its terminals. Minitel was abbreviated from the French "Médium interactif par numérisation d'information téléphonique" (Interactive medium through digitizing of telephone information).

The PTT owned the terminals but issued them free of charge to home customers and for a minimal 85 franc monthly fee to businesses. By the mid-1990's there were 9 million terminals throughout France, with 25 million users and 23,000 services.

Even during the early days, users could make online purchases, check stock prices, search telephone directories, and send and receive mail

Minitel's greatest success was probably "Le Kiosque", named after the ubiquitous French corner newsstands. A favorite "Le Kiosque" pastime was joining one of its steamy chat services, where hundreds of users, with names like Noir, Phantom, and Sex Fiend, could (probably) discuss the works of Sartre, Foucault, and Derrida.

Videotex's commercial triumph in France contrasts vividly with its less than stellar reception in the US [Oct 30] and the UK [June 8], [Sept 23].

Computerwelt Released
May 10, 1981

"Computerwelt/Computer World" was the eighth studio album by German electronic band Kraftwerk, and dealt with the rise of computers in society. The cover shows a Hazeltine 1500 terminal displaying the heads of the band members. Tracks included "Computer Love", "Pocket Calculator", and "It's More Fun to Compute". The compositions were credited to Ralf Hütter, Florian Schneider, and Karl Bartos.

Some of the electronic vocals were generated using a Texas Instruments Language

Translator which utilized a similar PCB to the TI Speak & Spell [June 11]. A user-accessible "Solid State Speech Module" contained software to translate from e.g. English, French, and Spanish to spoken German. A typical module stored 360 words and 78 phrases

Kraftwerk did not own a computer at the time of recording "Computer World".

During the "Computer World" tour in 1981, the band used hand-held miniaturized instruments during the set (for example, during "Pocket Calculator") and performed alongside mannequins of themselves during "The Robots".
