June 1st

Heath Robinson Operational

June 1, 1943

The "Heath Robinson" was a code-breaking machine used at Bletchley Park [Aug 15] to help decrypt the Lorenz (aka Tunny) cipher.

Lorenz was a much more advanced cipher than the better known Enigma [Feb 23]. For example, Enigma machines initially used just three rotors during their encryption process, while a Lorenz device employed twelve. Although Alan Turing [June 23] is feted for his work on breaking Enigma, Bill Tutte should also receive credit for cracking Lorenz, especially since he never actually got to examine a Lorenz machine.

The Multi-movement Bomb Catcher. From "Inventions"by W. Heath Robinson, p.103, Duckworth Pub., Feb. 1998

The Robinson was an electro-mechanical device, containing several dozen vacuum tubes. It was named by the Wrens (female naval personnel) who operated it after the British cartoonist William Heath Robinson who was known for drawing complicated mechanical devices for performing simple tasks (in a similar vein to Rube Goldberg in the US).

The machine consisted of a frame (called the bedspread) which supported two long teleprinter paper tapes on a network of reels, and two other racks holding counters and logic circuits.

One tape could hold 2,000 characters of cipher text, while the other stored patterns that the codebreakers believed might represent the Lorenz encryption. The second tape had to be precisely one character longer than the first, and keeping the tapes synchronized was a major challenge.

Max Newman [Feb 7] was responsible for the Robinson's functional specification, but most of the engineering was carried out by Frank Morrell at the Post Office Research Station at Dollis Hill. Tommy Flowers [Dec 22] designed the "Combining Unit" – the logic circuits applied to the input data.

Construction began in Jan. 1943, and the prototype started running at Bletchley Park on this day. It was installed in Hut 11 which had formerly been home to Turing's Bombes [March 18], the machines used to break Enigma. Jack Good [Dec 9] and Donald Michie [Nov 11] were assigned to the Robinson as code breakers.

Because the device proved to be rather slow and unreliable, it was replaced by the Colossus, Mark 1 [Jan 18] and Mark 2 [next entry] in 1944.

The Colossus Mark 2 Arrives

June 1, 1944

The first Colossus Mark 2 entered service at Bletchley Park [Aug 15] just in time for the D-Day Normandy landings on June 6. It was five times faster than the original Colossus [Dec 8] principally because it had switched to using shift registers.

The Mark 2 supported conditional branching, just as Charles Babbage's analytical engine had done [Dec 23], although there's no evidence to suggest that the Mark 2's designer, Tommy Flowers [Dec 22], was aware of Babbage's design.

Ten Colossi were operating by the end of the war and an eleventh had been commissioned. They allowed the Allies to extract a vast amount of intelligence from intercepted radio messages sent from German High Command throughout Europe.

A functioning reconstruction of a Mark 2 was completed in 2008 by Tony Sale and volunteers; it's on display at The National Museum of Computing at Bletchley.

Tim Paterson

Born: June 1, 1956;

Seattle, Washington

Paterson is best known for implementing 86-DOS for Seattle Computer Products (SCP), an OS for the Intel 8086 [June 8] which emulated the API of Gary Kildall's CP/M [June 22]. 86-DOS later formed the basis of MS-DOS [Aug 12].

Paterson involvement with Microsoft (while still at SCP) began when he designed the hardware for Microsoft's Z80 SoftCard [April 2]. It contained a Z80 chip [March 9] that made it possible for an Apple II [June 5] to run CP/M.

His OS work was originally known as QDOS (Quick and Dirty Operating System); unsurprisingly, it was quickly renamed. Version 0.10 was complete by July 1980, and it had grown to 4,000 lines of tightly woven assembly by v1.14.

Microsoft first licensed the OS on [Sept 22] 1980, cannily making sure to secure the rights to sub-license the product to other manufacturers. Unknown to SCP, this meant IBM.

Paterson bid farewell to SCP on May 1 1981 to join Microsoft's highly secret "Project Chess" [Oct 20] which went on to produce MS-DOS.

Microsoft also bought 86-DOS outright from SCP on [July 27], just before the release of the IBM PC [Aug 12]. This triggered a lawsuit from SCP, which eventually persuaded Microsoft to fork out another $1 million to the company on [Dec 16].

Many years later (in 2005), Paterson sued the author Harold Evans over his characterization of Paterson's 86-DOS as a "rip-off" and "a slapdash clone" of Kildall's CP/M.

Paterson also used to race cars in the SCCA Pro Rally series.

Casio Founded

June 1, 1957

The company that eventually became Casio was established in April 1946 by Tadao Kashio. It's first major product was the yubiwa pipe, a finger ring that could hold a cigarette, so allowing the wearer to smoke it down to its nub while leaving the person's hands free.

After seeing electric calculators at a Tokyo business show in 1949, Kashio and his younger brothers (Toshio, Kazuo, and Yukio) decided to develop their own.

Toshio possessed some knowledge of electronics, and set out to make a calculator using solenoids. The desk-sized device was finished in 1954, making it Japan's first home-grown electro-mechanical calculator.

In June 1957 Casio released the Model 14-A, the world's first all-electric compact calculator, based on relay technology. The name indicated that the machine operated with fourteen-digit numbers.

Jeff Hawkins

Born: June 1, 1957;

Huntington, New York

Hawkins created the GRiDPad in 1989, now regarded as the first tablet computer for consumer use. It measured 9 x 12 x 1.4 inches, weighed 4.5 pounds, and came equipped with a touch-screen interface and a stylus.

Jeff Hawkins (2007). Photo by Jeff Kubina. CC BY-SA 2.0.

It was manufactured by GRiD Systems Corp., and was cautiously marketed at "workers such as route delivery drivers and claims adjusters, who typically record data on paper forms."

Approximately $30 million were sold in its best year, and such a surge in demand quickly encouraged other companies to invest in tablets.

Hawkins went on to found Palm Computing in 1992 where he applied the same stylus technology to develop his most commercially successful product, the Palm Pilot [March 10]. Later he formed Handspring, which released the Treo [Jan 29].

Grokking

June 1, 1961

"Grok" was coined by US sci-fi writer Robert A. Heinlein for his 1961 novel "Stranger in a Strange Land".

The Oxford English Dictionary summarizes the meaning as "to understand intuitively or by empathy, to establish rapport with". More importantly, "Grok" has an entry in the Jargon File [Oct 2].

A typical tech usage from "The Linux Bible" (2005) characterizes the UNIX philosophy [Oct 15] as "one that can make your life a lot simpler once you grok the idea".The introductory web page for cURL, an invaluable open source tool for downloading network data, summarizes its function as "cURL groks URLs".

Pattie Maes

Born: June 1, 1961;

Brussels, Belgium

Maes is known for her work on human–computer interaction, intelligent interfaces, and ubiquitous computing. She founded and directs the Media Lab's Fluid Interfaces research group, and previously established and ran the Software Agents group.

Newsweek magazine named her one of the "100 Americans to Watch For" in 2000, which followed on from *People Magazine* dubbing her one of the "50 Most Beautiful People" in 1997. She was quoted as saying that MIT "is almost a wasteland in terms of beauty. It's not hard to be the prettiest woman if there aren't any other women. There's an expression that goes, In the land of the blind, the one-eyed man is king." The writeup also reveals that she had been a model in Belgium.

Kevin Kelly, editor of *Wired* magazine [Jan 2], formulated the Maes-Garreau law in 2007, named after Maes and Joel Garreau (author of "Radical Evolution"). It highlights the intriguing fact that most AI experts predict that life-saving AI will be developed in a year which will prevent those same experts from dying of old age. Maes is name-checked because of the list of her MIT colleagues that she created in 1993 who had predicted mind uploading (the replication of a human brain on a computer). She observed that this startling innovation was generally slated

to occur approximately 70 years after the birth of the predictor.

OSTAR Winner Uses Computer

June 1, 1968

The OSTAR (Observer/Original Single-handed Trans-Atlantic Race) has acquired a reputation for encouraging the development of ocean sailing technology; for instance, the 1968 event featured the first use of computer-based weather routing.

Geoffrey Williams, racing the 57-foot monohull “Sir Thomas Lipton,” communicated with meteorologists at Bracknell in the UK via high-frequency radio. They ran weather models on an English Electric KDF9 [July 9], to provide him with forecasts.

Warned of an incoming storm, Williams sailed north, missing the worst of it and gained an estimated 300 miles over his competitors. As a consequence, weather routing was banned from subsequent races, and in most other “unassisted” races.

OSTAR 1976 was also notable when a Wang computer [Feb 7] replaced the entire crew of the 236-foot yacht "Club Mediterranee", the second-place winner, although it did utilize a human helper, the skipper, and a dedicated operator, Alain Colas. The machine's software, developed by Compagnie Internationale Service L’Informatique, continuously monitored some 24 instruments.

Silicon Beach Software

June 1, 1984

Silicon Beach Software was an early developer of Mac [Jan 24] products that was founded in San Diego by Charlie Jackson and his wife Hallie. The company is probably best remembered for SuperPaint which combined features of Apple’s MacDraw and MacPaint [April 27] which meant it was capable of both bitmap painting and vector graphics. William Snider wrote the software entirely in Pascal on an Apple Lisa [Jan 19].

Silicon Beach also created Digital Darkroom, a photo editor which debutted the Magic Wand, a tool that became much better known in Photoshop [Feb 19]. The company's SuperCard improved on HyperCard [Aug 11] by adding support for color, multiple windows, and vector drawing.

Most importantly, the business promoted the term "Silicon Beach" as a cool way to talk about San Diego.

Linux is a Cancer

June 1, 2001

In a typically restrained comment, Microsoft CEO Steve Ballmer [March 24] told the *Chicago Sun-Times* that: “Linux [March 14] is not in the public domain. Linux is a cancer that attaches itself in an intellectual property sense to everything it touches. That’s the way that the license works.”

Yoga Headstand. Photo by Lilianwhite. CC BY 4.0.

Years later (in March 2016), at a dinner hosted by *Fortune* magazine, Ballmer reaffirmed that his opinion had been right for the time, but the threat from Linux was now “in the rearview mirror.” However, by this time, Ballmer had left Microsoft, and taken up yoga.

For more Ballmer and Linux, see [May 14].

Limits to Growth

June 1, 2004

“The Limits to Growth” was a 1972 report about the World3 simulation model (coded in DYNAMO [March 21]) which described the consequences of exponential economic and population growth upon the Earth's finite resources. As you might expect, it made for rather grim reading.

The study was commissioned by the Club of Rome think tank (“a group of world citizens, sharing a common concern for the future of humanity”); its authors were Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, and William W. Behrens III.

The model utilized five main variables: world population, industrialization, pollution, food production, and resources depletion. All five were expected to grow exponentially, while the ability of technology to develop new resources was kept linear. The authors explored the possible outcomes under several scenarios based around these assumptions.

Shortly after the report's publication, there was a glimmer of hope when William J. Boyle of McGill University translated the model from DYNAMO into Fortran [April 19], and discovered a misplaced decimal point in one of the tables. The authors agreed that there had been a typo, but it only affected some of the scenarios. In any case, the study has been periodically updated since 1972, with the most recent published in 2004

In 2008, Graham Turner from the Commonwealth Scientific and Industrial Research Organization (CSIRO) published “A comparison of The Limits to Growth with thirty years of reality”. He found that the historical data from 1970 to

2000 closely matched the results of the “standard run” scenario.