June 28th

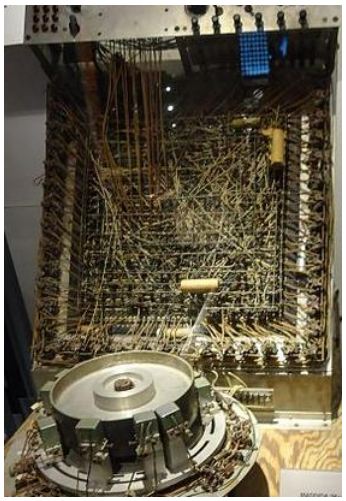
Floyd George Steele

Born: June 28, 1918;

Boulder, Colorado
Died: Sept. 23, 1995

Between 1946 and 1949, Steele led a team at Northrop Aircraft Corporation to develop the MADIDDA (MAgnetic Drum DIgital Differential Analyzer), better known as "Mad Ida". It was essentially a digital implementation of a differential analyzer, inspired by the work of Vannevar Bush [July 23].

In contrast to the ENIAC [Feb 15] and UNIVAC I [March 31] which used electrical pulses to represent bits, the MADDIDA was the first computer to represent bits using voltage levels and specify all of its logic in Boolean algebra. Its germanium diode logic circuitry was the work of Donald Eckdahl, Hrant (Harold) Sarkinssian, and Richard Sprague.



Part of the MADDIDA at the Computer History Museum. Photo by Tomwsulcer. CC0.

In 1952, six MADDIDA's were sold, making it the world's top-selling commercial digital computer. Its closest competitor, the UNIVAC I, only delivered its seventh unit in 1954.

However, the team came to realize that a digital differential analyzer could be just as easily implemented on a general-purpose digital computer through the use of an appropriate language, such as Dynamo [March 21]. A year after the first MADIDDA was demoed, Steele and the most of the team left Northrop.

Andrew Gordon Speedie Pask

Born: 28 June 1928;

Derby, UK
Died: March 29, 1996

Pask made significant contributions to cybernetics, instructional psychology, and experimental epistemology.

He first became interested in cybernetics in the early 1950's when Norbert Wiener [Nov 26] gave a lecture about the topic at the University of Cambridge. Pask, then an undergraduate, assisted during Wiener's talk.

Between 1953 and 1957, Pask and Robin McKinnon-Wood created Musicolour, an analog computer for theatre productions that controlled an array of lights by reacting to a musician's performance. It was one of the earliest examples of computer art, and was demoed at the Cybernetic Serendipity [Aug 1] exhibition.

Leon Chua

Born: June 28, 1936;

Philippines

Chua is known for his work on cellular neural network (CNN) theory. A CNN is similar to a normal neural network [Jan 00], except that communication is only allowed between neighboring cells.

He was also the inventor of "Chua's circuit", one of the first to exhibit chaotic behavior [Sept 12] by producing an oscillating waveform that never repeated.

In 1971 Chua theorized the memristor as the fourth fundamental circuit element – it implements a non-linear relationship between electric charge and magnetic flux. Thirty-seven years later (in 2008), a solid-state memristor was built by a team led by R. Stanley Williams at Hewlett Packard [Jan 1].

A Preliminary Discussion

June 28, 1946

Arthur W. Burks [Oct 13], Herman H. Goldstine [Sept 13], and John von Neumann [Dec 28] published "Preliminary Discussion of the Logical Design of an Electronic Computing Instrument."

There were two versions which differed quite significantly. The one issued on this day was called "the first half of the report" in the preface, and dealt with the logical aspects of a computer. Many of these ideas would be tried out in the Institute for Advanced Study (IAS) machine [June 10].

The second version, published on Sept. 3, 1947, a year later, changed large parts of the material dealing with arithmetic in light of the work on the IAS.

This report has sometimes been called the first publication on the stored-program computer idea. However, that title should be awarded to the "First Draft of a Report on the EDVAC" from [June 30] 1945, although only 24 copies were officially distributed.

Another contender is the paper by J. Presper Eckert [April 9] and John Mauchly [Aug 30]: "Automatic High-Speed Computing. A Progress Report on the EDVAC" which appeared on [Sept 30] 1945.

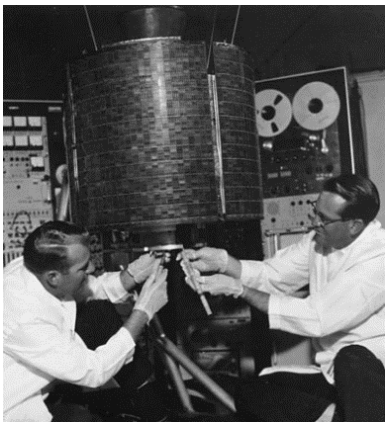
The three-part report, "Planning and Coding Problems for an Electronic Computing Instrument" by Goldstine and von Neumann from [April 1] 1947 is often paired with

"Preliminary Discussion" since it focusses on programming techniques.

Intelsat I

June 28, 1965

On April 6, Intelsat I (nicknamed "Early Bird" for the proverb "The early bird catches the worm") became the first commercial communications satellite to be placed in geosynchronous orbit; it started receiving and transmitting data on this day.



Engineers Stanley R. Peterson (left) and Ray Bowerman (right) checkout the Early Bird. Photo by NASA.

Intelsat I was the first satellite to provide direct, nearly instantaneous communication between Europe and North America. It could handle TV, telephone, and fax transmissions, but only a maximum of 240 voice circuits or one black and white television channel at a time.

Naturally, it facilitated a number of firsts. On May 2, 1965, it broadcast the "One Hour TV Spectacular" between nine different countries. In Dec., it provided the first live TV coverage of a spacecraft splashdown (of Gemini 6 [Aug 29]), and was one of the three satellites that broadcast the Moon landing on [July 20] 1969.

Elon Musk

Born: June 28, 1971;

Pretoria, South Africa

Musk came to prominence as one of the founders of PayPal [Feb 15]. Nowadays, he's the CEO of SpaceX (2002) and Tesla Motors (2003), inventor of the hyperloop (2013), and founder of the Boring Company (2017). Musk was the second Silicon Valley entrepreneur to create three companies (PayPal, SpaceX, and Tesla) that reached market caps of more than $1 billion (the first being James H. Clark [March 23]).

Musk and Sam Altman founded OpenAI in 2015 with the aim of advancing digital intelligence to benefit humanity. In 2017, he co-founded Neuralink, which intends to create brain implants to treat brain diseases in the short-term.

Musk received his first computer, a Commodore VIC-20 [May 9], when he was 9-years old. At age 12, he sold the rights of his game Blastar (offering gameplay quite reminiscent of "Space Invaders" [June 5]) for $500.

In 2013, Musk paid $866,000 for the Lotus Esprit 'submarine' that appeared in the 1977 James Bond film "The Spy Who Loved Me." At the time, he remarked that he wanted to make it "transform for real."

Musk has claimed that reading "The Hitchhiker's Guide to the Galaxy" [March 8] as a teenager changed his life. When Musk shot one of his Tesla Roadsters into space attached to a Falcon rocket, it had the words "Don't Panic" engraved on the dashboard, and a copy of the book (and a towel) ensconced in the glove compartment.

Microsoft's Logos

June 28, 1982

Microsoft's first logo from 1975 to 1979 employed a disco-dancing-style typeface with"Micro" on the first line and "Soft" on the second. This layout perhaps reflected the company's original double-barreled name, "Micro-Soft".

The second emblem from 1980 to 1981 evoked a heavy metal vibe with its jagged edges and mean-looking diagonals.

On this day, Microsoft unveiled its third motif featuring the famous "blibbet" of horizontal lines inside the first O, which led to the creation of the "Blibbet Burger," exclusive to the Microsoft campus cafeteria. That logo was dispatched in 1987 despite a spirited "Save the Blibbet" campaign led by Dave Norris.

Microsoft fourth insignia, released on Jan. 5, 1987, earned the nickname the "Pacman Logo". According to the *Computer Reseller News*, "the new logo had a slash between the o and s to emphasize the "soft" part of the name and to convey motion and speed."

The fifth "coat of arms" debuted on Aug. 23, 2012. It combines a multicolored Window with the "Microsoft" name in a restful gray. Jeff Hansen, general manager of brand strategy, explained that it's intended to "signal the heritage but also signal the future — a newness and freshness."

Motorola 68020

June 28, 1984

Motorola introduced the 16MHz 68020, a 32-bit version of the 68000 [Sept 26]. The use of CMOS and an on-board cache meant that its ALU could perform 32-bit operations in one clock cycle, whereas the 68000 had taken at least two ticks due to its 16-bit ALU.

The 68020 also supported up to eight coprocessors for faster floating point and paged memory operations.

It became a favorite of later-generation Macs, the Apple Macintosh II [Sept 19] and Macintosh LC, as well as in Sun 3 workstations [May 00].

Retina Chips

June 28, 2000

The University of Illinois at Chicago Medical Center announced that the first artificial retinas made from silicon chips were implanted in the eyes of two blind patients.

Dr. Alan Chow and his brother, Vincent , had developed the Artificial Silicon Retina (ASRTM) through their company, Optobionics Corp.

The chip was smaller than the head of a pin and about half the thickness of a sheet of paper. Each one contained about 3,500 microscopic solar cells to convert light into electrical signals, designed to replace photoreceptors within the retina of a damaged eye.

One of the most difficult current problems is the tradeoff between the amount of data processed and reducing the heat generated as a side-effect. For example, the Argus II retinal implant, manufactured by Second Sight Medical Products since 2013, is limited to a resolution of 60 pixels. A healthy human eye employs the equivalent of 1 million pixels.

Not a Big Truck; A Series of Tubes

June 28, 2006

US Senator Ted Stevens (R-Alaska) gave an impassioned 11-minute speech opposing a amendment to a bill on network neutrality that would have stopped service providers from giving some companies higher priority access to the Internet.

Stevens pointed out that the Internet was “not a big truck,” but more like a “series of tubes” that could easily be clogged with information. In the heat of the moment, Stevens may have also confused the terms Internet and email.

Mockery of these phrases soon became widespread, although CNET [March 5] journalist Declan McCullagh defended a “series of tubes” as an “entirely reasonable” metaphor [Jan 3].

Stevens has played a key role in legislation that has shaped Alaska’s economic development, including the Trans-Alaska Pipeline Authorization Act.

Google Plus Announced

June 28, 2011

Google Plus (G+) was Google's fourth foray into social networking, the others being Google Buzz, Google Friend Connect, and Orkut. It was developed under the codename ‘Emerald Sea’, with the slogan "Get way into what you love".

Features included the grouping of different types of relationships into Circles, multi-person instant messaging, text and video chat called hangouts, and the ability to edit and upload photos to private cloud-based albums.

G+ never caught up with Facebook [May 18], and in Feb. 2014, *The New York Times* likened it to a ghost town. In April, Vic Gundotra, the executive in charge, departed Google, and in Nov. 2015, G+ underwent a radical redesign to make it simpler and faster.

It didn't seem to help, and G+ was shuttered on April 2, 2019.