June 22nd

Konrad Zuse

Pronounced: Tsoosay

Born: June 22, 1910;

Berlin, Germany
Died: Dec. 18, 1995

Zuse is often regarded as the inventor of the computer, although his work wasn't widely known before 1965 when descriptions began to appear in English. His first machines, the V1, V2, and V3 (V for "Versuchsmodell" meaning experimental model), pre-date those of Howard Aiken [March 8], John V. Atanasoff [Oct 4], and J. Presper Eckert and John Mauchly's ENIAC [May 31]. Later he retrospectively changed the 'V' nomenclature to 'Z' so the devices wouldn't be confused with V rockets.

Konrad Zuse (1992). Photo by Wolfgang Hunscher, Dortmund. CC BY-SA 3.0.

He began building the Z1 [April 11] in his parents' living room in 1936, making it the first electro-mechanical computer, although some historians assign that title to the Z3 [May 12].

In 1940, he completed the Z2, which used telephone relays for the arithmetic and control logic, and Zuse also informed the German authorities of the possibility of using computers for codebreaking tasks and compiling gun-control table. The authorites showed no interest since the devices' construction might take more than a year, and the war would be won by then.

In [May 12] 1941, Zuse and Helmut Schreyer [July 4] (who helped with construction duties) completed the Z3, which stored its code on external tape, so no rewiring was necessary to change programs.

Between 1943 and [June 14] 1945, Zuse developed Plankalkül (Plan Calculus), the first high-level programming language. He also designed the Z4 [July 11], but due to the unrelenting bombing of Berlin, only a small part was built, and the existing Z1, Z2 and Z3 were destroyed during air raids. Fortunately, Zuse managed to escape the city with his Z4, and after the war, renovated and sold it to ETH Zurich. he also contacted IBM in 1946 in the hope of getting them to sponsor his research, but they only wanted to purchase his patents.

A quote: "The danger of computers becoming like humans is not as great as the danger of humans becoming like computers."

First Satellites

June 22, 1960

The first US surveillance satellite, Galactic Radiation and Background (GRAB-1), was launched by the Naval Research Laboratory (NRL). Its aim was to construct maps of the Soviet air defense radar network.

The deployment was approved by President Eisenhower in May 1960, just four days after the loss of an U-2 reconnaissance aircraft over Soviet territory.

Five GRAB satellites were launched between June 1960 and April 1962, but only the first and third reached orbit. In 2000, CIA Director George Tenet recalled the effort:

"One of its more spectacular failures rained debris down on Cuba. Havana charged that a cow was killed in a deliberate US action. The Cubans soon paraded another cow through the streets with a placard reading: 'Eisenhower, you murdered one of my sisters.'"

The first US scientific satellite was Explorer 1, sent into space on Feb. 1, 1958. It had been put together hastily in just 84 days in response to the success of Sputnik [Oct 4]. It became the first orbital object to return scientific data, and also detected what came to be known as the Van Allen radiation belt.

CP/M Loads

June 22 – Fall 1974

CP/M (Control Program/Monitor, but later Control Program for Microcomputers) was the first commercial OS that allowed a microcomputer to communicate with a disk drive. It was initially limited to PCs utilizing the Intel 8080 [April 18], but was later ported to other chips. As a result, it played a pivotal role in the hobbyist PC movement of the 1970's.

Working in his tool shed, Gary Kildall [May 19] "loaded my CP/M program from paper tape to the diskette and 'booted' CP/M from the diskette, and up came the prompt: *. This may have been one of the most exciting days of my life, except, of course, when I visited Niagara Falls."

There's no record of the precise date of this momentous event, but electronic engineer John Torode recalled that it was before he moved to Chicago in the fall of 1974, but after Kildall's wedding.

CP/M first ran on an Intel Intellec-8 development board [June 4], connected to a Shugart Associates 8-inch floppy disk drive [Sept 27]. It was written in Kildall's PL/M (Programming Language for Microcomputers) whose compiler generated code for the 8080.

During this period, Ben Cooper and Kildall also created the "Astrology Machine", a kiosk

that dispensed horoscopes. Units ended up being installed at a few locations in the San Francisco area, and were the first commercial use of parts of CP/M.

Together with his wife Dorothy, Kildall formed "Intergalactic Digital Research" in 1975 (or 1974) to market and develop the OS. By 1976, the company had been renamed Digital Research, Inc. (DRI).

Kildall also invented BIOS (Basic Input/Output System) [July 10] which let CP/M run on different hardware without major modifications. The BIOS contained all the low-level hardware functions such as character and disk I/O, hiding complexity from the OS.

At the peak of its popularity in 1981, CP/M ran on 3,000 different computer models and DRI had yearly revenues of over $5 million.

Infocom

June 22, 1979

Infocom was founded by Dave Lebling, Marc Blank, Albert Vezza, and Joel Berez. The group were big fans of the text-based game "Colossal Cave" [March 11], and had implemented their own version called Zork [May 27] while studying at MIT.

When Infocom was looking around for a money-making project, the group remembered Zork. After some clever hacking so it would run of a typical PC, it became Infocom's first game in [Dec 00] 1980, split into three parts: "Zork: The Great Underground Empire - Part I" (later known as Zork I), "Zork II: The Wizard of Frobozz", and "Zork III: The Dungeon Master".

Infocom had sold more than 680,000 copies by 1986, amounting to about a third of the company's total game sales. Other popular titles included "Deadline" [March 10] (which introduced the "feelies" concept), "The Hitchhiker's Guide to the Galaxy" by Douglas Adams [March 8], and "A Mind Forever Voyaging".

Infocom was the dominant game company by 1983, but was acquired by Activision [April 25] in 1986, and shut down in 1989, although Activision released several of its old titles under the Zork brand.

PCI

June 22, 1992

Intel [July 18] announced its Peripheral Component Interconnect (PCI) bus which let a computer support new PCI cards while continuing to use Industry Standard Architecture (ISA [March 2]) expansion cards, a standard dating back to distant 1982.

PCI originally operated at 33 MHz using a 32-bit-wide path, and could transfer data at a rate of up to 9 MBps. ISA was 16 bits wide and operated at 4.77 MHz.

PCI only really caught on when MS Windows 95 [Aug 24] introduced Plug and Play (PnP). Fortunately, Intel had incorporated the PnP standard into PCI, which gave it its first distinctive advantage over ISA. Apple also adopted PCI for its Power Macs [March 14], and the Performa line in mid-1996.

PCI's popularity began to wane in the mid 2000's with the rise of USB [Jan 15].

Snow Crash Published

June 22, 1992

"Snow Crash", a humorous cyberpunk novel by Neal Stephenson argues that Sumerian is the firmware programming language for the brain, while following the travails of Hiro Protagonist, a pizza delivery worker for the mafia, who also happens to be a Warrior Prince in the Metaverse.

The book popularized the Sanskrit term "avatar" for talking about virtual online bodies, although the term had appeared previously, notably in Habitat [June 23], a MMORPG released by LucasArts in 1986.

Snow Crash. Oregon Department of Transportation. CC BY 2.0.

One of Google Earth's [June 11] developers has suggested it was modeled upon "Snow Crash", and Michael Abrash has claimed the metaverse as an inspiration behind Quake which was released on this day in 1996 [two entries on]. The book was also made mandatory reading for all of the Xbox development team [Nov 15].

HoTMetaL

June 22, 1994

HoTMetaL was perhaps the first editor created specifically for writing HTML. It was based on the SGML [May 00] engine in SoftQuad Author/Editor, and was available in free, light and professional versions. On this day the first MS Windows version was released, and it received *PC Magazine*'s Editors' Choice Award in 1995.

Of course, the capital letters in HoTMetaL spell out HTML, and the complete term also refers to hot metal typesetting.

The software was technically a hybrid text and visual editor, so not entirely WYSIWYG [Sept 17]. The first fully WYSIWYG HTML tool was WebMagic [Jan 25].

Quake Released

June 22, 1996

Quake is a FPS developed by id Software [Feb 1] and published by GT Interactive. It built upon the successful technology and gameplay of its predecessor, Doom [Dec 10], but offered full real-time 3D rendering, and 3D acceleration through OpenGL [June 30].

Quake introduced the ability to stage a deathmatch between human opponents rather than just computer operated characters. This small change turned out to be incredibly popular.

For audio effects, Id recruited "Nine Inch Nails" lead singer Trent Reznor [May 17] to create sound-effects and ambient music. In 1997, the Game Developers Choice Awards gave Quake three spotlight awards for Best Sound Effects, Best Music or Soundtrack, and Best On-Line/Internet Game.

The engine's source code was released with a GPL license [Sept 20] on Dec. 21, 1999.

Rats with Robotic Arms

June 22, 1999

A report describing how the brain signals of a rat controlled a robotic arm appeared in *Nature Neuroscience*. The research was hailed as a breakthrough in the integration of computing technology and biology.

The ultimate goal was to apply the work to restore mobility in patients who were paralyzed or had lost limbs.
