March 11th

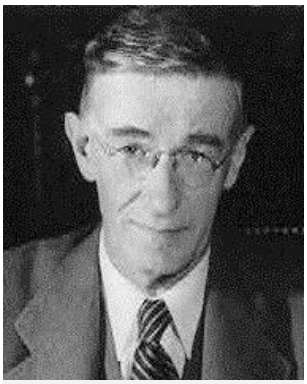
Vannevar Bush

(pronounced "Van-ee-ver")

Born: March 11, 1890; Everett, Massachusetts
Died: June 28, 1974

Before WWII, Bush was known as the developer of the first electromechanical differential analyzer for solving differential equations [July 23]. Claude Shannon's [April 30] Master's thesis [Aug 10] on digital circuit design theory was inspired by his work on that machine.

Bush was also involved in the development of digital computers through his Rapid Arithmetical Machine project [Jan 2], which was unfortunately abandoned when the US entered the war.



Vannevar Bush (c. 1942). Photo by the OEM Defense.

During WWII, Bush headed the US Office of Scientific Research and Development (OSRD), through which almost all wartime military R&D was carried out, including the Manhattan Project.

In July 1945, Bush introduced the "memex" concept, a proto-hypertext system, in "As We May Think" published in the *Atlantic Monthly*. The system would consist of a mechanized desk with a screen and keyboard which could access all of a person's books, records, magazines, and communications stored on microfilm. Storage, in Bush's vision, would be virtually unlimited: "If the user inserted 5,000 pages of material a day, it would take him hundreds of years to fill the repository."

He predicted that "wholly new forms of encyclopedias will appear, ready made with a mesh of associative trails running through them, ready to be dropped into the memex and there amplified".

Douglas Engelbart [Jan 30] later said, "It just thrilled the hell out of me that people were thinking about something like that." Ted Nelson [June 17], who coined the term "hypertext" in 1965, credited Bush as his main influence.

Bush's memex ideas were predated by the work of Paul Otlet [Aug 23] and Henri La Fontaine on their Mundaneum (1924). Otlet and Robert Goldschmidt had created a portable microfiche library in 1925, and Emanuel Goldberg [Aug 31] had built a microfiche search engine in 1931.

Joseph "Lick" Carl Robnett Licklider

Born: March 11, 1915; St. Louis, Missouri
Died: June 26, 1990

Licklider has been called "computing's Johnny Appleseed" for having foreseen many of the advances in interactive computing and networking.

In the 1950's at MIT, he was involved in SAGE [July 26] as head of the human factors team concerned with how machines and humans could work together. While working at Bolt, Beranek, and Newman [Oct 15] in 1960, he wrote the seminal paper "Man-Computer Symbiosis" in which he argued that the goal of computing should be to augment human intelligence.

On Oct. 1, 1962 Licklider became the first Director of IPTO, ARPA's [Feb 7] Information Processing Techniques Office, which provided funding for new graduate programs and computer science research.

Licklider promoted the idea of a universal network through his April 1963 memo addressed to "Members and Affiliates of the Intergalactic Computer Network" [May 1]. This and other memos inspired his IPTO successors (Ivan Sutherland [May 16], Robert Taylor [Feb 10], and Lawrence G. Roberts [Dec 21]) to fund the ARPANET [July 29].

Another milestone was Licklider and Taylor's paper, "The Computer as a Communication Device" (1968), which described possible features for the impending ARPANET and other kinds of human-computer interfaces. In the latter category, they proposed a device called OLIVER (On-Line Interactive Vicarious Expediter and Responder), a computerized personal assistant, named after Oliver Selfridge [May 10]. Their paper is illustrated with several amusing cartoons.

Margaret Belle (Oakley) Dayhoff

Born: March 11, 1925; Philadelphia
Died: Feb. 5, 1983

Dayhoff was a research biochemist at the National Biomedical Research Foundation (NBRF) where she pioneered that field's application of mathematics and computational methods. For example, in 1966, she was the first person to use a computer to compare protein sequences and reconstruct their evolutionary histories.

One of Dayhoff's most important contributions was her "Atlas of Protein Sequence and Structure" (1965), a text describing all the known protein sequences of the time. It later became the basis of the Protein Information Resource database which itself became something of a template for DNA and protein-related biomedical research tools.

In 2003, she was selected for the National Library of Medicine's 200 women physicians who "changed the face of medicine."

John Thomas Draper

(aka Cap'n Crunch, after the breakfast cereal mascot)

Born: March 11, 1943; US

In the 1960's, phone phreaker friends told Draper about a toy whistle that was packaged in boxes of Cap'n Crunch cereal. It could emit a tone of precisely 2600 hertz – the same frequency used by Bell's long distance phone lines to indicate that a line was available to route a new call. This very useful Bell fact had been revealed in a Bell Labs paper published on [May 17] 1960.

Experiments with the whistle inspired Draper to start building "blue boxes": electronic devices capable of reproducing other tones used by the phone company. In pre-digital days, the six main ones were: 700hz, 900hz, 1100hz, 1300hz, 1500hz, and 1700hz.

Draper was far from being the first phone phreaker – Ralph Roy Barclay [March 20] holds that title, but Draper became the visible face of the sub-culture after the publication of the 1971 *Esquire* article, "Secrets of the Little Blue Box" by Ron Rosenbaum [Oct 00]. This probably led to his arrest on toll fraud charges in 1972, but it also meant that he met and inspired [Oct 17] Steve Wozniak [Aug 11] and Steve Jobs [Feb 24].

A Cap'n Crunch Whistle. Photo by 1971markus. CC BY-SA 4.0.

Draper later worked for Apple on a telephony card for the Apple II [June 5] which could automatically dial phone numbers. and had a few phone-phreaking capabilities, but it never shipped.

Draper also wrote EasyWriter, the first Apple II word processor; he had the spare time for this project since he was serving a prison sentence in the Alameda County jail, and under its work furlough program, he had access to a computer. Draper originally called the software TexWrite but changed it to EasyWriter after a friend, Steve Sawyer, told him about the movie "Easy Rider" (1969)

Draper later ported EasyWriter to the IBM PC [Aug 12], but only had six months for the conversion. The result was a disaster, with the software being dubbed "Not So Easy Writer," in a review by *PC Magazine*.

Although they no longer serve a practical use, the Cap'n Crunch whistles have become collector's items. "2600: The Hacker Quarterly" [Jan 12] is named after the whistle's frequency.

Douglas Noel Adams

Born: March 11, 1952; ?? UK

Died: 11 May 2001

Adams is best known as the author of "The Hitchhiker's Guide to the Galaxy", which began as a short BBC radio comedy series [March 8]. Its massive success led him to pen a "trilogy" of five books, a television series, several stage plays, comics, a computer game, and a movie (that debuted after he had passed away).

Adams was the first person to buy an Apple Mac [Jan 24] in Europe – although the details of this momentous event differ in different accounts. He first saw one at Infocom's [June 22] offices in Boston in 1984, when he and Steve Meretzky were developing the original Hitchhiker's game.

Adams later became an "AppleMaster", one of over seventy celebrity spokespeople for Apple products; others included John Cleese [Oct 5] and Richard Dawkins [Nov 15].

A quote: "I am rarely happier than when spending an entire day programming my computer to perform automatically a task that would otherwise take me a good ten seconds to do by hand."

Colossal Cave Adventure

March 11, 1977

"Colossal Cave Adventure" (aka ADVENT) was the first example of interactive fiction and a precursor to the adventure game genre. The player explores a cave system looking for treasure while avoiding death. There are no graphics, just beautiful text descriptions.

The game was developed by Will Crowther between mid-1975 and early 1976 on a PDP-10 [Jan 5]. It consisted of about 700 lines of FORTRAN [Feb 26], and 700 lines of data including text describing 66 rooms, and an 193-word vocabulary that a user could type.

ADVENT brought together two of Crowther's abiding interests – caving and "Dungeons & Dragons" [July 27]. Crowther and his wife Pat were experienced cavers, having helped to map the Mammoth Cave in Kentucky in the early 1970's.

ADVENT isn't actually considered the first "Dungeons & Dragons" inspired computer game. That's either "The Dungeon" [Dec 22], a PLATO [July 00] game, or "Dungeon" by Don Daglow [Sept 12], both dating from 1975.

In early 1977 ADVENT arrived at MIT, with enormous effect. One local hacker later estimated that the game set the computer industry back two weeks.

On this day in 1977, Don Woods, a graduate student at Stanford, began releasing updates to the game, mainly centered around fantasy elements based on his love of J.R.R. Tolkien [Oct 14]. He also introduced a scoring system, and added more treasures. Woods checked if his changes were okay with Crowther by sending email to "crowther@xxx," where "xxx" was every computer then attached to the ARPANET [Dec 5]; that strategy was possible back then.

Woods expanded the game to include 140 map locations, 293 vocabulary words, and 53 objects (including 15 treasures). The program grew to approximately 3000 lines of code and 1800 lines of data.

Donald Knuth [Jan 10] used ADVENT in a 107-page tutorial on literate programming that translated the Crowther/Woods FORTRAN into CWEB. Knuth later remarked, "I remember being fascinated by this game when John McCarthy [Sept 4] showed it to me in 1977. I started with no clues about the purpose of the game or what I should do; just the computer's comment that I was at the end of a forest road facing a small brick building. Little by little, the game revealed its secrets, just as its designers had cleverly plotted. What a thrill it was when I first got past the green snake!"

Two ADVENT phrases that pop up frequently in computing are: "xyzzy", a magic word, and the sentence "You are in a maze of twisty little passages, all alike".

Deadline

March 11, 1982

Deadline was probably the first murder-mystery interactive fiction game, and certainly the first non-fantasy release for Infocom [June 22], after Zork I [Dec 00] and Zork II.

Wealthy industrialist Marshall Robner had locked himself in the upstairs library of his New England colonial mansion, and committed suicide by overdosing on anti-depressants. Or had he? You are the Chief of Detectives, and have twelve hours to crack the case.

One amusing game innovation by Infocom was the inclusion of "feelies": physical items that supplied more information and clues. For Deadline these included a police dossier, a plastic bag with three white pills, interview notes, the coroner's notes, a letter to the Chief of Police, and a photo of the murder scene. Aside from enhancing the game play, "feelies" materials were difficult to copy, and so acted as a deterrent to software piracy.

Other novel aspects were the number of non-player characters (NPCs), the independence of their behavior, and the parser's complexity for processing user input.

The game was implemented using Infocom's interactive fiction system, ZIL and ZIP, which had been developed for the Zork games.

The Deadline designer, Marc Blank, was strongly inspired by Denis Wheatley's novel "Who Killed Robert Prentice?" (1930) , and the game's working title was "Who Killed Marshall Robner?" Wheatley's book was structured as a portfolio of interviews with witnesses, typed letters, handwritten notes, railway tickets, newspaper clippings, and a used matchstick.

Connecticut's ConnNet Connected

March 11, 1985

ConnNet, the US's first local public packet switching network, was launched in Connecticut. (The first *national* network was probably Telenet, which started on [Aug 16] 1975.)

ConnNet was operated by Southern New England Telephone, which had begun life as the District Telephone Company of New Haven. That company had set up the first telephone exchange on [Jan 28] 1878, and printed the world's first phone book.

ConnNet users could access services such as CompuServe [Sept 24], GEnie [Oct 1], Delphi, and BIX, and national and international networks, such as Tymnet [Nov 00] and ACCUNET.

Most users employed dial-up links that operated at 300 to 1,200 bits per second. However, companies could rent dedicated lines to obtain speeds ranging from 4,800 bits per second to an astonishing 56,000.

ConnNet was not technically the first "Internet" Service Provider (ISP) since its network relied on the older X.25 protocol which was only later replaced by the Internet Protocol (IP) [Jan 1]. The first ISP was probably "The World" [Nov 00] and UUNET's [May 12] AlterNet which began in Nov. 1989.

First MIME E-mail Attachment

March 11, 1992

E-mail attachments had been around for a while, but the one sent today by Nathaniel Borenstein used the MIME (Multipurpose Internet Mail Extensions) protocol for encoding multimedia content.

The message contained two items: a photograph of a Bellcore barbershop quartet called the "Telephone Chords", and an audio file of the Chords' singing about MIME to the tune of the barbershop standby, "Let Me Call You Sweetheart". The picture and the audio file can be found at http://www.guppylake.com/nsb/mime.html. The man on the right of the group, wearing a bright yellow cardigan, is Borenstein

The two primary authors of MIME were Borenstein and Ned Freed (who was not in the Chords).

Microsoft Bob Released

March 11, 1995

Bill Gates [Oct 28] had first revealed the existence of "Microsoft Bob", an animated "social" interface for Windows 3.1 [April 6] at the Las Vegas Winter CES in January. He had claimed that Bob was a major breakthrough, the likes of which would eventually dominate home computing. The project's code name was "Utopia".

One journalist remembered, "Flights heading into Vegas were supplied with Bob napkins, a plane towing a 'Welcome Bob' banner circled above the Las Vegas Convention Center, and senior citizens wearing Bob sandwich boards trudged up and down the Strip."

Microsoft Bob's interface consisted of a "house" with "rooms" containing objects corresponding to applications, such as a desk with a pen and paper, and a checkbook.

Bob was pals with a motley collection of cartoon helpmates, including "Chaos the Cat" and "Scuzz the Rat", who could walk the user through how to use certain applications

Bob's design was based on research by Clifford Nass and Byron Reeves of Stanford.

Microsoft loaded up stores with copies of Bob on this day, expecting stellar sales; instead it flopped. Suggested reasons were the program's huge size (for the time), high cost, and the annoying, dispiriting, soul-destroying nature of the software.

As the hype surrounding Windows 95 [Aug 24] increased, Bob was quietly "put to rest", but not forgotten. Many of his bits-and-pieces were reanimated as the "Clippy" assistant in Microsoft Offfice 97 [April 11], and some of his helpmates, such as "Rover the dog, resurfaced in Windows XP [Oct 25] as "Search Companions". Also, the Comic Sans typeface was created for (but not used in) Microsoft Bob.

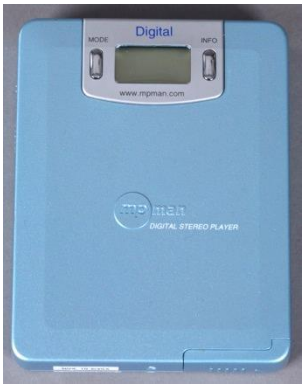
Bob's house and rooms metaphor made a comeback in Windows 10 [July 29] as the Cliff House, where you materialize when you put on the Windows Mixed Reality headset. One reviewer described it as a "dream-house-turned-prison".

Bob was awarded seventh place in *PC World* magazine's list of the 25 worst tech products of all time, and was number one worst product of the decade at CNET.com.

First MP3 Player

March 11, 1998

At CeBIT [March 12], South Korea's Saehan Information Systems launched the first portable MP3 audio player, the MPMan F10.



The MPMan F10. Photo by Innskrift:640734. (c) europeana

The F10 contained 32 MB of Flash storage, enough for a handful of songs encoded at 128Kb/s, which it downloaded via a cable connected to a PC.

Initially it was considered too expensive, but the price fell with the release of a competitor, the Diamond Multimedia Rio PMP300, on Sept. 15.

On Oct. 8, RIAA [Sept 8], filed an order to prevent the sale of the Rio. The application was denied, and Diamond subsequently sold some 200,000 players.

ENIAC in Space

March 11, 2008

Garrett E. Reisman, NASA astronaut and University of Pennsylvania alumnus, served as a flight engineer on several missions aboard the International Space Station (ISS).

On this day, Reisman carried a dial from the ENIAC [Feb 15] (which had begun its life at Penn's Moore School [July 8]) on a three month mission to the station. During the outbound journey aboard the Space Shuttle Endeavour, Reisman attached the knob to the ship's main control panel, although it wasn't actually wired up to anything.

Back on Earth in Feb. 2009, Reisman re-attached the dial to the parts of the ENIAC on display at the Moore School.

Reisman later played the part of a Colonial Marine on "Battlestar Galactica" (the TV show). In the series finale, someone threw up on him and he died.

For more space shuttle stories, see [Jan 22], [Feb 24], [Apr 00], [Apr 10], [Aug 9], [Oct 4]. For more ISS stories, see [March 26], [Aug 14].