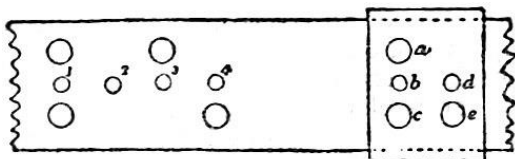## The Wheatstone Perforator
June 2, 1858

The telegraph quickly proliferated thanks in part to the simplicity of Morse's encoding scheme for data [Oct 19]. However, an average telegraph operator could only transmit around ten words a minute, and there was a need for more speed.

The solution was Charles Wheatstone's "automatic fast speed printing instrument", filed on this day as British patent 1239, making it the first device to use paper tape as a medium for the preparation, storage, and transmission of data. The message was punched onto the tape "offline" at 'human' speed, but transmitted mechanically at between 50 and 150 words per minute.

A Wheatstone perforator was utilized to punch the tape (aka the "slip"). Then a paper tape reader sent out signals in accordance with the holes, and a very sensitive form of polarized direct ink writer was used to record incoming messages.

A Wheatstone slip punched with a dot, space and a dash, and a perforator punch plate. Drawing by Harry Robert Kempe, 1911.

The perforator employed three punches in a row across the paper and was originally worked by hand, but later versions employed electromagnets or pneumatics.

A telegraphic dot was represented by two holes across the tape, placed either side of sprocket holes that ran down the middle. A telegraphic dash was encoded as two holes along the tape.

First Sound Transmission
June 2, 1875

Next: [Feb 14]

While working on experimental telegraphic equipment, Thomas A. Watson tried to free a reed that was too tightly wound around an electromagnet. He accidentally plucked the stick, producing a twang that Alexander Graham Bell [March 7] heard on a second device in another room.

This led Bell to change his focus from improving the telegraph to figuring out a way to implement voice transmission. He and Watson spent the next several months building a transmitter that was capable of producing varying electronic current, and a receiver that could reproduce those variations as audible frequencies.

Bell applied for a patent on [Feb 14] 1876, which was granted on [March 7] 1876. He officially made the first call on [March 10] with the words: "Mr. Watson, come here, I want to see you."

Ernest Allen Emerson II
Born: June 2, 1954;
Dallas, Texas

Emerson, Edmund M. Clarke, and Joseph Sifakis invented model checking which determines whether a system model (implemented in either hardware or software) matches its specification (which focuses instead on safety requirements, such as the absence of deadlocks and critical states that may cause the system to crash).

Emerson interest in program correctness date back to his college days when he first read Tony Hoare's [Jan 11] "Proof of Program: Find" (1971) in the *Communications of the ACM*.

The Italian Job Released
June 2, 1969

"The Italian Job" is a British comedy heist movie, directed by Peter Collinson, and starring Michael Caine and Noël Coward. A computer expert, Professor Peach (unconvincingly played by UK comedian Benny Hill), hacks the machine controlling Turin's traffic network, creating a paralysing jam that allows the gang to steal gold in three Mini Cooper S getaway cars.

The computer featured in the film may be an Olivetti Elea 9003 (Elea stands for "Elaboratore Elettronico Aritmetico"), the first Italian industrial electronic computer, and popular during the early 1960's when about 40 were manufactured.

The 2003 remake replaced Prof. Peach with Lyle (aka "Napster"), played by Seth Green. A flashback depicts Shawn Fanning (playing himself [Nov 22]) stealing Napster's code from Lyle while the latter is napping, providing a reason for the name.

Toontown Online
June 2, 2003

The Walt Disney Company launched the massively multiplayer online role-playing game (MMORPG) "Toontown Online". It was marketed as the first MMORPG with kid-safe restrictions. For instance, players could only chat using a list of pre-approved phrases specified by Disney.

When an online character tried to say something not in the list, it was replaced by a word reflecting the character's toon type. For instance, a dog might end up saying "woof".