History of Music Recording

Acoustic Era: Inventions and Inventors

- This era set the basis for the modern developement of audio recording.
- The inventions related to this era are the phonograph, gramophone, early discs and wax cylinders.
- Thomas A. Edison invented the phonograph in 1877 beginning this era then Emile Berliner followed in 1887 by inventing the gramophone: a competition to Edison's phonograph.
- The process of recording music was difficult for the artists, because there were no microphones so they had to stay very close to the phonograph or gramophone to properly record their music.

Acoustic Era: Gramophones and Phonographs

- Gramophones and phonographs have relatively similar features that were mantained up until the magnetic era with the turntables, namely the needle that would read the music.
- Both inventions used the same concept for reproducing music: a needle would go through the different grooves of the disk or the cylinder and generate vibrations that would later be detected by a diaphragm and then be amplified through a horn.
- The main difference between both inventions, was that Edison's phonograph used a cylinder shaped object from which the needle would read the music; while Berliner's gramophone would use discs to perform the same action.
- The process of recording for the phonograph, didn't require any additional process other than using a special needle on the machine to carve the grooves into the wax cylinder.
- Both inventions used a manual wind up to play music.
- For the Gramophones, this same process was used. Except that the wax cylinders were exposed to a chemical treatment were they would be flattened and covered in plastic.

Acoustic Era: Audio Samples

First recording ever - 1877!

Earliest commercial songs recorded - 1899

Gramophone recording - 1900

https://archive.org/details/78_old-comrades-march_columbia-band-c-teike_gbia0123352a/OLD+COMRADES+MARCH+-+Columbia+Band+-+C.+Teike.flac

Electrical Era: Inventions and Inventors

- This new era Started in 1924 replacing the "Acoustic" era, when music and sound recording started to rely on electricity.
- This era mainly started with Thomas Edison, when he was the first person to propose recording sound and music with electricity, he managed to do it by attaching a small stylus, to the diaphragm of a telephone receiver and let the signal vibrate the stylus, these vibrations cut the groove.
- Although, at the beginning the idea didn't get developed, due to the lack of amplifying the telephone signal, this caused weak recordings in comparison to simply using recording horns.
- Sometime later Henry Harrison and Joseph Maxfield achieved to develop an electrical phonograph recording system using the condenser microphone, invented by Edward Wente.
- Thomas Alva Edison was an American inventor, scientist and businessman, who developed lots of inventions who have helped in big advancements in human history, like electricity and other type of knowledge. He was one of the first men to initialize chain production. His main advancements were the main bases to future technologies like: Light, electricity, sound recording, and cinematography. He was one of the most influential man for the country not only for the advancements to technology but also to music.

Electrical Era: Improvements

- With the arrival of the new era the recording system improved the frequency range from 250-2500Hz to now 50-6000Hz, this wider bandwidth added another octave of sound reproduction in addition to reduced harmonic, distortion and a more realistic sound image. Due to this characteristics the electrical system was much more robust than the previous acosutic process.
- This era was also marked due to the introduction by Western Electric's to the electrical microphone that as said before amplified the bandwidth of the sound, and this made the sound recording become a hybrid process

Electrical Era: Audio Samples

- Example of electrical recording in early 1900's

- Electrical era, Olympics, 1924

The Magnetic Era: The Beginning

- The magnetic era started back in 1898 with the telegraphone, which was used during world war 1 by Germany and USA to record and send messages. A while after world war 1 Germany decided to improve magnetic recording.
- The Magnetophone was invented in 1935 and it gave many advantages to the Germans throughout war, the Magnetophone was portable, cheaper than most things at the time and it had an amplifier speaker, but this didn't mean it had its difficulties like the quality of the recordings.

The Magnetic Era: Evolution and Expansion

- After the war, the Megaphone got to the U.S where it became useful for broadcasting companies and so that different companies started making their own like the Ampex Electrical and Manufacturing Company created a version of the magnetophone that was called model 200 tape recorder. This made that major companies to adapt the model 200 into studio recordings and radio networks.
- Later the cassette was introduced inside the industry where it started to take over leaving behind less convenient ways of recording like open-reel audio tape recording, in 1965 Phillips company introduced the compact cassette that allowed people to do playbacks and recordings which will allow for 30-45 minutes of audio.

Digital Era

- The digital audio started around the 1970´s with the reflective videodisc, Sony and Philips started making there one steriotype of the CD player. The digital audio was the replacment for the analog audio, exposing a total new era of devices and audio.
- The disc reader used lasers to shine through a translucent disk and defined "pits" and "lands" positions and created a bitstream that would then be converted using a disc player.
- A curious fact is that the wife of Sony´s vice-president was the one that choose the duration of the CD´s, who desired that any possible recording of Beethoven's Ninth Symphony be playable on a CD. As a result, a 120 mm disc with a maximum 74-minutes of data space.

•In 1982, Sony would issue CDs globally, followed by a worldwide market introduction in 1983 with Philips. Initially as pricey as $2000 for a CD player, a classical music lover was the intended consumer. CD shipments would overtake vinyl LPs in sales in the late 1980s and then cassette tapes in 1992, as costs declined in the coming years.

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