

# A SHORT HISTORY OF RECORDING SOUND [PART 2]

*In Part 1 we could, in short, read about the early beginnings of recording sound since 1860, 150 years ago.*

The invention of the phonautograph was mentioned as the predecessor of Edison's phonograph. Electrical recording and its groundbreaking revolution on sound recording were also elaborated on in this first episode. In part 2 Magnetic and Digital recording are explained.

## Magnetic recording

The magnetic recording was demonstrated in principle as early as 1898 by Valdemar Poulsen in his Telegraphone. Magnetic wire recording, and its successor, magnetic tape recording, involve the use of a magnetizable medium which moves past a recording head. An electrical signal, which is analogous to the sound that is to be recorded, is fed to the recording head, inducing a pattern of magnetisation similar to the signal.

On the 1900 World Exposition in Paris, Poulsen had the chance to record the voice of Emperor Franz Josef of Austria which happens to be the oldest surviving magnetic audio recording today. It was World War II, which was a worldwide tragedy but also led to a boom for the record industry as well as the development of new technologies. German audio en-

gineers, who also discovered the technique of AC biasing, developed 2-track recording which led to the development of multitrack recording. Much of this credit also goes to guitarist, composer and technician Les Paul, whose experiments with tapes and recorders in the early 1950s led him to order the first custom-built eight-track recorder from Ampex.

It was this multitrack tape-technology which enabled the development of the first quadraphonic sound, in which each of the four tracks was used to simulate a complete 360-degree surround sound.

## Digital recording

Digital audio uses digital signals for sound reproduction. This includes analog-to-digital conversion, digital-to-analog conversion, storage, and transmission. The first digital audio recorders were reel-to-reel decks introduced by companies such as Denon (1972), Soundstream (1979) and Mitsubishi. They used a digital technology known as PCM recording.

Within a few years, however, many studios were using devices that encoded the digital audio data into a standard video signal, which was then recorded on a U-matic or other videotape recorder, using the rotating-head technology that was standard for video. A similar tech-

nology was used for a consumer format, Digital Audio Tape (DAT), but was a failure in the consumer-audio field (too expensive, too finicky, and crippled by anti-copying regulations). DAT became popular in studios (particularly home studios) and radio stations. Within a few years after the introduction of digital recording, multitrack recorders (using stationary heads) were being produced for use in professional studios.

In the early 1990s, relatively low-priced multitrack digital recorders were introduced for use in home studios; they returned to recording on videotape. The most notable of this type of recorder is the ADAT. Developed by Alesis and first released in 1991, the ADAT machine is capable of recording 8 tracks of digital audio onto a single S-VHS video cassette. The ADAT machine is still a very common fixture in professional and home studios around the world. In the consumer market, tapes and gramophones were largely displaced by the compact disc (CD), which was introduced 1982 and a lesser extent the minidisc. These recording media are fully digital and require complex electronics to play back.

Digital sound files can be stored on any computer storage medium. The development of the MP3 audio file

format, and legal issues involved in copying such files, has driven most of the innovation in music distribution since their introduction in the late 1990s.

As hard disk capacities and computer CPU speeds increased at the end of the 1990s, hard disk recording became more popular.

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