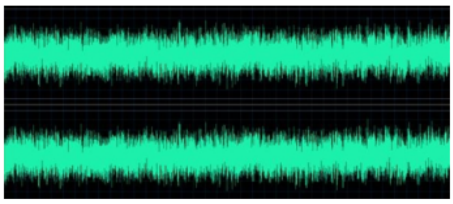
Stereo Recording

What is Stereo Recording?

Stereo recording is recording onto two separate channels, one channel for the left sound input and the other channel for the right sound input. With stereo, recording on the two channels are independent of each other, and, thus, the channels can record completely different signals at a given time. This makes stereo recording dynamic, since it can produce different distinct sounds on the left channel and right channel.

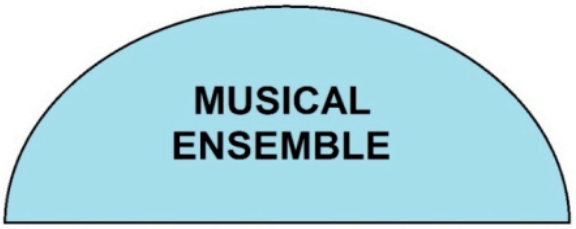
How can stereo recording be achieved? In order to record in stereo, a recording device must be used that has two microphones. Why? Because in order to record onto the two channels, two separate microphones are needed, one microphone for the left sound input channel and the other microphone for the right sound input channel. Speaking into the left microphone yields the left side input and speaking into the right microphone yields the right side input. The recording device that has two microphones that can achieve stereo recording is a 2-microphone_array device.

Left track

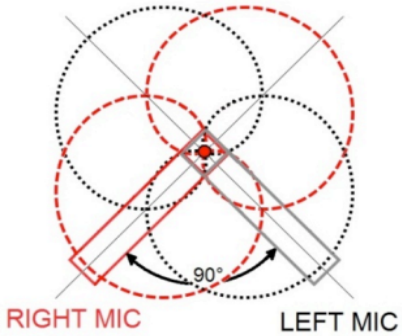


Right track

Stereosonic Recording



The stereo sonic technique) was invented by Alan Blumlein this method consists of a coincident pair of bi-directional (figure-eight) microphones placed at an angle of 90 degrees from one another, with the center line bisecting that angle pointing at the music source. This configuration provides a high degree of stereo separation along with a large amount of room ambience. The Blumlein technique produces a good, natural-sounding stereo image, but the sound quality is greatly influenced by the room acoustics and the size of the sound source. Since it is coincident, it provides excellent mono compatibility. Both condenser and ribbon microphones have been used with this technique. This technique

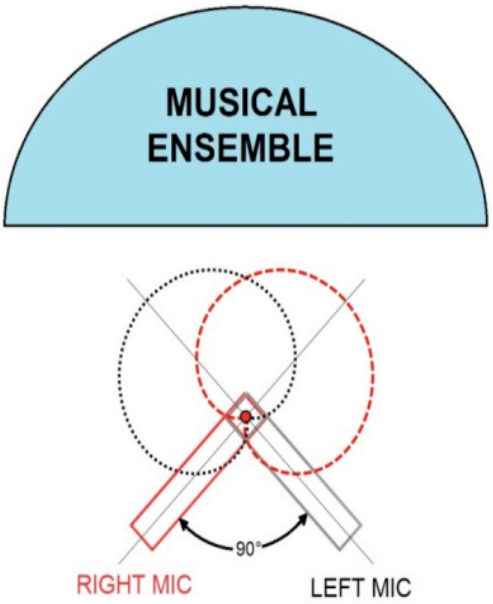


Blumlein Pair

should not be used if room acoustics or audience noise will be a problem.

X-Y Recording

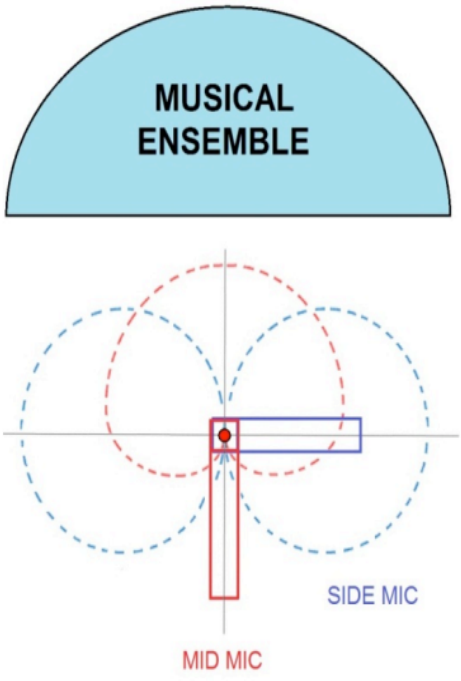
The X-Y technique uses two cardiod microphones in a coincident configuration angled typically at 90 degrees apart (45 degrees to either side of a center line that faces the sound source). Angles from 90 to 135 degrees can be used and even as high as 180 degrees have been reported.6 The X-Y technique is sometimes used in the near coincident configuration with the two mics spaced about 12 inches apart.7 In the coincident mode phase cancellation problems are essentially nil since the capsules are so close together resulting in good mono compatibility.



X-Y Pair

Mid-Side Recording

This coincident technique employs a bidirectional microphone facing sideways and a cardioid (generally a variety of cardioid, although Alan Blumlein described the usage of an omnidirectional transducer in his original patent) at an angle of 90° facing the sound source. One mic is physically inverted over the other, so they share the same distance. The left and right channels are produced through a simple matrix: Left = Mid + Side, Right = Mid − Side (the polarity-reversed side-signal). This configuration produces a completely mono-compatible signal and, if the Mid and Side signals are recorded (rather than the matrixes Left and Right), the stereo width can be manipulated after the recording has taken place. This makes it especially useful for film-based projects.



Mid-Side Technique

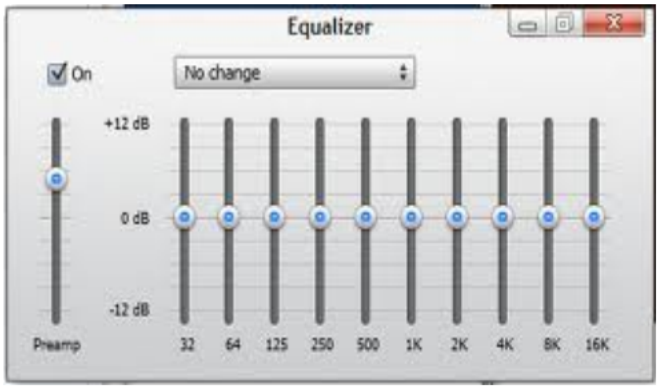
Audio Equalizer

Equalization, or ***EQ*** for short, means boosting or reducing (attenuating) the levels of different frequencies in a signal. Equalizer which is balancing or equalizing the frequency like low, mid and high.

The most basic type of equalization familiar to most people is the treble/bass control on home audio equipment. The treble control adjusts high frequencies; the bass control adjusts low frequencies. There are two types of equalizer in audio mixer

Parametric Equalizer

Graphical Equalizer



Parametric EQ

Parametric equalizers use bell equalization, usually with knobs for different frequencies, but have the significant advantage of being able to select which frequency is being adjusted. Parametric are found on sound mixing consoles and some amplifier units (guitar amps, small PA amps, etc).

Graphic EQ

Graphic equalizers provide a very intuitive way to work — separate slider controls for different frequencies are laid out in a way which represents the frequency spectrum. Each slider adjusts one frequency band so the more sliders you have, the more control and we can adjust the particular frequencies.

Audio compression is a method of reducing the dynamic range of a signal. All signal levels above the specified threshold are reduced by the specified ratio.

Limiters are used as a safeguard against signal peaking (clipping). They prevent occasional signal peaks which would be too loud or distorted. Limiters are used in audio mixer board and other public address system

Difference between compressors and limiters

Compressor : An amplifier,whose gain decreases as its input level is increased.

Limiters : A compressor,whose output level remains constant regardless of its inputs level.