

TECH NOTE #104 Stereo vs Mono – A Very Brief Overview

This subject comes up often with some accompanying confusion. Let's first define the two terms as they pertain to audio.

MONO: A sound reproduction method where the audio source is reproduced equally through one or all loudspeakers in a "system".

STEREO: A sound reproduction method where the audio source is divided into differing audio sound components and each of the components is reproduced by at least two loudspeakers requiring separate power amplifiers for each. Typically used in a left and right loudspeaker configuration.

Now, think about your guitar rig. You have a head and a speaker cabinet. By definition this would be MONO because you have one sound source (the head) and one loudspeaker. Let's say your head has an effects loop with one send and one return jack. Can this be stereo? No, because we still only have one source, one power amplifier and one loudspeaker. Is there a way to connect a stereo effects unit into the loop to make it stereo? No, the scenario hasn't changed.

Then how do I use my stereo effects unit with my mono amp in true stereo?

As we see, stereo means two different signals to two power amps and two speakers. To have a true stereo setup requires adding an additional speaker and power amp to your mono setup. The signal coming out of the effects send jack on your amp is mono. This would go to the single mono input of your effects unit. Now, one output (left) could connect to the effects return of your amp. The other effects unit output (right) would go to the separate power amp and speaker. Now when you activate a stereo effect such as echo with ping-pong, or stereo flanging, the effect will automatically "pan" from side to side creating the true stereo effect.

As we can also see, when the effects are bypassed (no effects are turned on) the signal passes through.....in mono. It does not really become "stereo" until you turn on an effect that is actually stereo. If you do wish to use a stereo effects gadget with your mono rig, the only option is to program the effects to be mono or you will be missing half (left or right) of your signal. You could alternately use a mixer to "sum" or combine the left and right outputs into a single mono signal. This would require another piece of gear and would accomplish the same end result as programming the effects for mono. If you have a mono setup and your effects are programmed for stereo (ping/pong echo for example), you will only hear every other ping, or pong, because you can only use one of the two outputs from the effects unit.

Another method to get "true stereo" is with a wet/dry setup. In this case, your guitar signal is send directly to one speaker with no effect added (dry). This is your core tone. Then you can either use the effects send (or line out if your amp has one) to go to the effects unit to separate power amp(s) and speaker(s). This becomes your stereo effect while your dry sound is unaffected. Some players opt for a pseudo stereo setup with the dry/direct signal as just described and using a mono effect to a separate amp/speaker. In fact this is how the famous Roland Jazz Chorus 2x12 amp works. One speaker is always dry while the other speaker performs the chorusing effect. You hear it as a moving stereo sound because the phase is constantly shifting between the two speakers.