

How Microphones Colour Recorded Guitar Sounds

During my life as a guitar amp and effects designer, I am frequently asked how to get certain sounds by players looking for a shortcut to tonal nirvana!

The one fact that is overlooked by most guitarists is that all microphones used to capture recorded sound will colour the sound heard on the recording. For example, the live sound created by anyone playing a Stratocaster plugged into a Session 'BluesBaby' amp will NOT sound exactly the same as the sound you hear from a recording of that same musical passage played back! Of course, this also applies to any guitar played through any other amp.

So, for guitarists trying to copy a sound they hear on a record is, therefore, going to be extremely difficult to replicate. It's possible to get reasonably close to some degree for certain segments of the musical part... but way off for other segments. It's so frustrating and you won't ever achieve the exact sound for every segment of the whole part you want to copy!

Microphones have a diaphragm that vibrates in sympathy with acoustic sound to produce the electrical signal that's used in the recording process. BUT... all diaphragms add harmonics (overtones) to the sound that are NOT contained within the acoustic signal source! Sadly, the various materials that diaphragms are made from do exhibit 'resonant' or 'spot' frequencies which they like to vibrate at more (or less) easily than other frequencies. This means that any particular microphone does output electrical signals that are NOT accurate to the original acoustic sound.

Consequently, creative recording engineers have learnt that certain microphones enhance the sound in particular ways which benefit some instruments or voices better than others... and are employed sometimes just to produce special tonal effects. For this reason, most studios have a huge collection of microphones they can draw from to enhance any

recordings. Those mics are usually 'industry standard' types and many can be vintage too!

The favoured mic for recording electric guitar is the Sure SM57 placed somewhere in front of the guitar speaker of a guitar amp. The SM57 not only picks up the sound, but it has tonal characteristics that seem to enhance the sound of electric guitar somehow. So, even with just one mic employed, the sound has been changed. But many recording engineers use multiple mics to make several simultaneous recordings. These separate 'tracks' are then blended to create the final guitar sound you hear on record.

One should also bare in mind that, along with the resultant final mixed down guitar track, there may be many other 'effects' added to further create the sound heard. And don't forget the 'room' sound of the studio or other venue will affect the final outcome too!

For these reasons, I never bother to try and copy guitar sounds from any famous recordings. I prefer to play sounding like me. I couldn't be bothered wasting all that time finding the exact sound... it's pretty much impossible to be honest!

And... what's wrong with doing your own version of popular songs with your own guitar sound anyway?

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