

Effect Pedals

I love effect pedals! If you haven't had an opportunity to play with a stomp box a it is time to head to a music shop. They are fun. What they do is alter the sound produced by your electric guitar. Actually, it is not limited to the electric guitar; pedals can alter the sound of any instrument. Stomp your foot and change the sound of any instrument as long as it's sound is converted into an electric signal either through a pickup or a microphone. In other words, you got to get the sound into one of those fun little boxes somehow.

Some pedals are designed to subtly "color" the sound while others go crazy and transform it dramatically. They are housed in cases that can be positioned on the floor or within a pedal board and operated with your feet. The pedals may have a simple design and a single footswitch or they may be more complicated and have many switches and knobs where you can tailor the effect and your sound. I want to put it in your mind now that more knobs does not necessary mean a better pedal. Knobs are attached to things that alter the tone, even if they are in the off position.



Moer Pedals

More and more boutique pedals are coming onto the market. Boutique pedals are designed by small companies and are produced in limited quantities. Many are hand-made, with hand-soldered connections or NOS (New Old Stock) parts. NOS parts are sought after to get a vintage sound. Boutique companies may focus on re-creating classic or vintage effects. They are often created with more attention to detail which can mean more expensive than mass-produced pedals.

It's nice to know that many boutique pedals gain in value. For instance, I have an original Way Huge Swollen Pickle. (I can't help what it is called – they did that.) It is an amazing sounding fuzz pedal. The original company is no longer in business but you can buy a licensed copy of that pedal with two additional knobs that can tailor your tone even more for about the price I originally paid for the original. Yes the new pedal is good and I would definitely consider it but the old pedal is great. But if even if you can find the old pedal used on eBay it will cost three or four times as much. I saw one on eBay for \$1000 not too long ago.



Outlaw Pedals

There are many types of pedals. New ideas are coming out all the time. I put together a brief description of some types of pedals. I think of them in three categories: Tone Effects, Time Effects and Volume Effects. Tone effects are those that primarily change the tone color of the guitar sound. Time effects are created by splitting the audio signal and altering one in delay or modulation in some way. And volume effects change your tone by making some part of the sound wave softer or louder.

Tone Effects

Distortion, Overdrive and Fuzz are often used to describe the same pedals. But you can confuse a fussy person like me if you call a fuzz pedal a distortion

Distortion: It seems that most people purchase a distortion pedal as their first pedal. Probably because it can make such a dramatic change to their tone. And then they purchase another and another because they all sound different. To play guitar is a quest for great tone. Once you get it, you will probably lose it and have to start searching again. I think I have five distortion pedals that I like but I only keep one on my pedal board at a time based on the type of music I am playing. Distortion is created by clipping an instrument's audio wave signal. A distortion pedal can produce warm, hard or gritty tones by flattening the peaks of the audio wave form. Distortion pedals may also emphasize or add overtone and create a richer sound.

Fuzz: Similar to a heavy distortion tone, Fuzz creates its tone by clipping a sound-wave until it is nearly a square wave. Fuzz boxes may contain frequency multiplier circuitry to achieve a harsh timbre by adding complex harmonics. The first transistorized guitar effect was the 1962 Maestro Fuzz Tone which became a hit after the 1965 Rolling Stones hit "(I Can't Get No) Satisfaction" I use fuzz on only one or two songs just to make a riff or solo stand out. I like to play around with it at home to make the walls shake. Other players use it a lot more than I do.

Song Example: Rolling Stones hit "(I Can't Get No) Satisfaction, Hound Dog Taylor

Common Pedals: Electro-Harmonix Big Muff, Arbiter Fuzz Face, Way Huge Swollen Pickle, Zvex Vexer Fuzz Factory

Overdrive: Overdrive pedals produce "soft" tube-like distortion by compressing the sine wave without completely flattening it. Much like tube amps, overdrive units produce a cleaner sound at low volumes and warmer tones at louder volumes.

Common Pedals: Fulltone OCD Obsessive Compulsive Drive Overdrive, Boss SUPER OverDrive SD-1

Wah-wah: The first wah-wah pedal, the Clyde McCoy, was sold

in 1967. The wah-wah pedal creates vowel-like sounds by altering the frequency spectrum. The pedal is operated by the foot to sweep the frequency back and forth to the rhythm of the music using a pad that looks a lot like a volume pedal. Wah-wah pedals are often used by funk and rock guitarists. Think "Theme from Shaft." for the classic chuck-a-wah sound. Rock guitarist often use it during a solo or leave it in position to change their tone.

Common Pedals: Dunlop Cry Baby, Morley Power Wah, Musitronics Mu-Tron III.

EQ: An equalizer is a set of linear filters that boost or cut specific frequency regions. I don't see them much in pedal boards these days but they can be used to bring out the bass, mids or highs in your tone.

Equalizer effects: Boss GE-7 Equalizer, MXR 10-band EQ Pedal.

Octave: Jim Morris developed the first octave effect which Jimi Hendrix named "Octavio in 1967. Add an octave to some distortion to get a classic tone.

Common Pedals: Electro-Harmonix POG2 Polyphonic Octave Generator

Time Effects

Chorus: My first pedal was a chorus pedal. It takes a tone wave and mixes it with itself with slight differences in timbre and pitch. The pedals create a slight delay and frequency variations or "vibrato" of one part of the audio while the other is unaltered. People describe the chorus effect as shimmery.

Common Pedals: Boss CE-1, Electro-Harmonix Small Clone, Boss CH-1 SUPER Chorus Pedal, MXR ZW38 Zakk Wylde Black Label Chorus



T-Rex Replica

Reverb: There are many types of reverb: spring, plate, tape, analog and digital. Reverb is related to delay but I tend to think of them as separate effects. Reverb units produce an echo effect by adding a duplicate instrument-to-amplifier electrical signal to the original signal at a slight time-delay which fades away. A plate reverb system uses an electromechanical transducer to create vibrations in a plate of metal. Spring reverb systems use a transducer to create vibrations in a spring. The surf guitar sound of Dick Dale comes to mind when I think of a spring reverb. Digital reverb effects use various signal processing algorithms to create the reverb effect.

Common: Electro-Harmonix Holy Grail, Fender Reverb Unit (Looks like an amp head)

Delay: The crisper sounding reverb. With delay you can separate the individual notes so that it sounds like you are playing two notes very quickly. Rockabilly is noted for the "slapback" echo sound.

Common Pedals: Boss DD-3 Digital Delay, Boss DD-7 Digital Delay, TC Electronic Flashback Delay

Flanger: A flanger creates a "jet plane" sound. It was created in the studio before the effect pedal by taking two synchronized tapes and periodically slowing one tape by pressing the edge of its reel. The reel is also called the Flange. When the two tapes' audio signals are later mixed a variably delayed version of the audio signal to the original creates a Doppler effect.

Common Pedals: Electro-Harmonix Electric Mistress, MXR

Flanger.

Phaser: A phaser or “phase shifter” creates a slight rippling effect—amplifying some aspects of the tone while diminishing others—by splitting an audio signal in two and altering the phase of one portion.

Common Pedals: Electro-Harmonix Small Stone, MXR Phase 90, Univox Uni-Vibe.

Vibrato: Vibrato effects produce slight, rapid variations in pitch, mimicking variations (sharp or flat) produced naturally by singers and violinists when prolonging a single note. Vibrato effects often allow the performer to control the rate of the variation as well as the difference in pitch (depth). A vibrato with an extreme “depth” setting (e.g., half a semitone or more) will produce a dramatic, ululating sound.

Volume Effects

Also called dynamics and amplitude effects, dynamics effects modify the volume of an instrument. Dynamics effects were the first effects to be introduced to guitarists.

Boost: Ahh, the boost pedal. So often overlooked and underappreciated. I really want to put this in the tone section because it has a lot of influence over your tone. A boost amplifies the volume of an instrument by increasing the amplitude of its audio signal. They can be used for increasing the volume during solos, preventing signal loss in long effects chains or warming up a tube amp. A guitarist switching from rhythm guitar to lead guitar may use a boost to increase the volume of his or her solo. I think it is useful for warming up the tone of a tube amp.

Song Example:

Common Pedals: MXR Micro Amp

Tremolo: A tremolo effect produces a variation in the volume of a note or chord. Think of turning the volume knob of your amp or guitar up and down very fast. The tremolo pedal makes a

different sound than the “tremolo bar” or “whammy bar”. The whammy bar actually makes a vibrato or “pitch-bending” sound. Musicians! Go figure.

Compressor: I think it was the third pedal I purchased but it was years before I figured out how to use it. Compression makes loud things quiet and quiet sounds louder by decreasing or “compressing” the dynamic range of an audio signal. Imagine whispering at the same volume as you are yelling. Compression can make drums stand out or TV commercials louder. I go through phases on using the pedal all the time (I even had two in my board for a while) and then leaving it out of my rig all together. A compressor is often used to stabilize volume and smooth a note’s attack or amplify its sustain. Most guitarist think of a compressors when they want to create long sustaining notes in a lead guitar part. As a note is sustained, it loses energy and volume due to diminishing vibration in the string. The compressor pedal boosts its electrical signal to the specified dynamic range, slightly prolonging the duration of the note. But a compressor can also be used by the rhythm guitarist to create interesting rhythm effects. Or as a limiter with extreme settings of its controls. Many compressor pedals are often also marketed as “sustainer pedals”. Long sustain combined with heavy distortion can lead to infinite sustain and squeal (feedback) in the most beautiful way.

Common Pedals: MXR Dyna Comp, Keeley 4-Knob Compressor Guitar Effects Pedal

Noise gate: If you hear a bit of a buzz while you are not playing your guitar this is the pedal for that. A noise gate eliminates the hiss by reducing the volume of sounds that fall below a set volume point. As a note fades you set a point where the volume is cut completely off and how fast it turns off. This can be a subtle effect or a dramatic gated effect.

Common Pedals: Boss NS-2 Noise Suppressor

A word about Signal Chain Order

If you are using more than one pedal you should beware that the order you place your pedals has an impact to your sound. They may also introduce unwanted noise or hum. From the guitar to the amp, the optimal order to your signal chain is debatable but a rough guide is tuner, volume, compressor, octave generator, wah-wah pedal, overdrive, distortion, fuzz, EQ, tremolo, reverb and echo. The logic goes something like this: The tuner before the volume so that you can turn the chain off while you tune; Volume is your on and off switch; Compression, wah and overdrive pedals are at the start of the chain to preserve the tone; I put a booster early in my chain to ensure a consistent signal through the pedals into the amp. I usually leave my booster on; Watch out for those distortion effects. They are noisy pedals. Putting a distortion pedal in front of a compressor, for instance, may increase your noise by a very noticeable amount; lastly, reverb and echo because if you add reverb too early your tone becomes muddy.

So there you have a start about effect pedals and what they do. There are many more kinds of pedals that I haven't mentioned and many makes and models of ones that I have. So have fun looking for sounds you hear in your head or new sounds you haven't heard before. Find sounds that inspire you.