By Theo Hartman - GJD Contributor

In the last installment of this column I talked a little bit about guitar signal-chain issues on a general scale: exploiting the interaction between guitar, signal chain and amp to generate tone vs. a more compartmentalized approach using individual buffered effects (in series or otherwise).

To extend the discussion of 'sonic context' a bit further before diving into details about pedals, it is worth noting that the sound produced by the guitar-pedal-amp setup--no matter what the approach--exists within the even larger (and more subjective) context of how we hear (or how the microphone we're recording with does).

I point this out because the desire to create or recreate a particular sound we've heard on a recording, live, or in our mind's ear is often the motivation for a new pedal design—but it is all too easy to overlook the complexity of how the sound was originally derived in our desire to package it in a single, neat little box.

Leaving psychoacoustics aside for the moment, what external factors make the translation so difficult?

Air.

It's understandable that for reasons of budget, space and convenience we would attempt to recreate the sound of a non-master volume Marshall and 4x10 speaker cabinet in a 4"x5" metal box that runs on a 9v battery. I have in fact heard some remarkably convincing facsimiles of JTM45s in pedals small enough to fit inside a pack of cigarettes.

Where the analogy between the target sound and the repackaging of the sound often breaks down, however, is in the finally delivery to the listener. If you design a pedal that sounds *exactly* like an Overdrive Special at its output jack, what amp and speakers do you then use reproduce the sound live? What microphone to do you use to record it?

For me, rock and roll is about moving air (among other things). When I conceive of the role of a pedal--essentially a tone-shaping device--I try to avoid the temptation to consider it THE tone.

It's not, at least not until they install 1⁄4" jacks behind our ears. In the open air, a pedal that nails a Marshall's tone played back thru an Alesis RA100 Power Amp at the same sound pressure level as the original amp of which it is a clone does not produce the same playing or listening experience. In the hermetically-sealed environment of direct-recording, it might get closer, because it is then competing with a microphone and recordist's reproduction of the sound of the original amp—much fairer competition than the human ears in a room. In a live situation, however, the means of delivery carries the day.

One of the most deeply informative listening and playing experiences I ever had was the first time I connected a rotating speaker cabinet to my guitar rig. Not an electronic simulation of a rotating speaker, an actual rotating speaker. Nothing could have prepared me for the experience. Natural chorusing and phase shifting take place in the room where you are standing, you inhabit the sound field. Recording this sound can be exceedingly difficult, and if the final destination of the recording is to be a stereo pair of static drivers, there exists a strong argument for simulation via electronic circuits. But if the intent is to produce the effect live, the mechanical rotation of the sound source is orders of magnitude more vivid than the most sophisticated static simulation.

For anyone who has struggled with mic'ing guitar cabinets with multiple speakers, the differences between how we hear vs. how microphones "hear" are much in evidence. One of my favorite stage amps was an old Super Reverb. I loved everything about that amp live—how it smelled when it got hot, how it bloomed and sagged, the way it settled into a warm overdrive after it'd been played for about 20 minutes, and the way it filled the stage and room. It never suffered from being nasal or ice-picky due in large part to how chaotically it broadcast its voice via a complement of 4 10" speakers in an open- back cabinet.

Recording the Super was a different story, however. No matter how we mic'd it, the sound proved impossible to capture without going to wide-spaced omni pairs. Out came the Deluxe Reverb with its single 12" cone. This would often blind audience members in the first row with its laser-like directionality and high-end, but close-mic'ing it was a breeze, and resulted in a very faithful and coherent recorded sound.

So what's a pedal builder to do? I don't think the answer is to abandon attempts at simulation, I think rather it's to clarify intent. As I think is probably clear by now, I still view the pedal in the context of the live guitar experience.

For years, guitar gear was intended to be no more than a point of departure for exploring sounds and creating music. Recently, there's been more emphasis placed on gear as a tonal destination. A great deal of today's gear is calibrated to 'print to tape (hard-drive)' well—a natural response of the marketplace to the explosion in home-recording. Entire suites of plug-ins exist to simulate every aspect of Jimi's rigs over the span of his career. This is not a bad thing in its own right, particularly if "sounding like" is the sole objective and you don't have the Plexis laying around to do it old-school, but if you're after the inspiration that these sounds afforded, you might find that's not in the box. Your ear will provide inspiration, but only if it believes what it is hearing. Again, I'm not saying simulation is bad or unnecessary, just that it's important to be clear on the intent, and to remember that how we hear sound often demands

different tools than how we record for stereo reproduction.

So why the live thing? What of this inspiration? For me, it's where all the beautiful stuff happens that makes your hair stand on end—working the bridge pickup around so it's pointed at just the right angle toward your amp to pickup a little feedback on a held note, the kick coming up through your feet, the low strobe of a leslie rotor, the tempo a band takes to accommodate the vibe of a large venue, the barometric pressure change when a bassist hits a low B at Red Rocks: these may not be essential ingredients for musical inspiration, but when it comes to the energy, chaos and spontanaeity of live rock'n'roll, they don't hurt. And best part: all you need is air (and maybe a little volume).

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