

Terry Manning and Lucas Engineering

by Mark Rubel

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Talk a little about your Lucas equipment.

I started about '89 or '90. Really what inspired it was two things: It was always difficult recording guitars, because a lot of what I did experimenting on guitars would be to use more than one amp at a time. Not more than one mic on an amp, but actually as if it was a stereo guitar (really there's no such thing, unless you're able to get your ear right up on it and hear the difference in the low and high strings) but if you had a guitar with more than one output and ran it to two different amps you could get two different sounds. Stevie Ray Vaughan also had this viewpoint. When we did some things together we talked a lot about that. His thought was that neither a Marshall nor a Fender is, "Exactly the sound I like and want for me." Because a Marshall has all the crunch and the oomph, I can get it all punchy like I want, but the Fender has the clean tone and I can bring out the clean harmonics I like. He liked to play through them both at the time that we were working together. I thought the same way. So the way I would do that is - I did a lot of it on ZZ Top, not the *Eliminator* album, but some experimenting on other albums - was to use more than one amp. I still have a lot of these guitars I made with two sets of pickups and two different sets of outputs. I call them "dual exhaust guitars". For instance, I have some Strats that in each of the three different positions have two pickups instead of one. And then down there, two selector knobs instead of one. And two outputs, so I could run to two different types of amps. You get the same exact playing but you can get different sounds without having to reamp later. You could come up with something the guitarist could play against.

Of course, they're different because the pickups are in different places...

Slightly different or totally different. On some of them I have a Bill Lawrence [pickup] in the same spot as a Fender. Or I'll put a DiMarzio Super Distortion in the place and a Fender. So you get totally different tone qualities coming out. Then you could run one through a Fender, and one through a Marshall - different types of amps. One through a very small amp with a six-inch speaker like a Supro or something, and one through a big overbearing [amp]. It takes some time and trouble, but it can be worth it. In doing all this you start to run into all the age-old guitar problems, which are hums and buzzes, because two or three different ground potentials are happening at the same time, or you have your guitar output seeing more than one thing, which is loading your impedance improperly, and you may lose highs. You may have long cords and lose highs over that, so it's just a nightmare in the control room. You were spending half your time running around, plugging things in differently, looking for ground problems, changing things, putting on ground lifters or taking them off things, risking being electrocuted, trying to hook up things differently to get a clean, perfect sound like you want. So I finally said, "Enough is enough. I want to do it all right here." So I invented what I call the "Deceiver", which is a control room box which has one input and then four completely separate, totally buffered outputs. The guitar only sees the one input which is set impedance-wise as if it were a normal Fender amp. Each output is buffered from the other outputs, so it doesn't know there's another output. What it doesn't know is, they're all being deceived. Each output, then, has a phase reversal switch so all your cones are going the same way at the flip of a switch, or not if you want. There's a ground lift for each output, so you can quickly find your little hums and buzzes. And then I have a mute switch for each of the outputs, if you're going to be plugging in and out all the time, you're going to be clicking the mute, all of a sudden it's gone. It's a very expensive, time-intensive box to make, because it's full of good toggle switches, but it takes some electronics inside. It's got basically the workings of a Neve V-Series inside

it, so it sounds very good. It also is a line driver, so you can use a long cable without losing anything. I made this thing as a prototype for one of the ZZ Top albums. I'm in there just click-click-clicking away, we're happily doing our guitars in half the time, it lets us focus on the creative and the sounds, not turning knobs and switches and worrying about buzzes. And Billy [Gibbons] said, "This thing's great. I need one of these for stage. Can you make another one of them?" I didn't make it, I had my great tech, Frank Lacy, make this thing with what I wanted, refined it until it was just the right way and it all worked. I still have the single prototype, which ran on a battery. And then the next thing I knew we were making one, and someone else saw it, "I've gotta have one", and I've sold about a hundred of these things. It's an indispensable control room tool. And that worked so well, I said, "Now let's make other stuff."

The other thing that came at the same time, is that a couple of my UA 176s stopped working, I couldn't get parts, I need some more 176s, so I look over at Frank, and say, "Can we make these?" He says, "I'll take it home and look at it." Next thing I know he says, "Yeah, it can work, except I think with the components that are available today it will work even better if we do this", we started refining that in the studio. Because at the time, there weren't Manleys, there weren't Summits and there weren't all the other brands that came on the scene, new tube equipment, transformer, using the old way of doing things. We started just doing it ourselves. Since what I do as a living is not run a company that makes and sells equipment, we just made it for ourselves, just happily made it for us and used it. I ended up selling quite a bit because other people would use it.

We have a great tube equalizer. Equalizing is not a passive resistor network, where the only thing the tube does is bring the gain back up ten or fifteen dB, the equalizing is done inside the tube. Same with the limiting, it's not a VCA or an optical circuit where there's some other thing deciding the volume. Inside the tube the two sides of the tube are looking against each other and deciding what to turn up and down and not and when. The only others that do that are the UA and the Fairchild. Although now I think the Vari-Mu, Gyraf and a couple of people have done a variable-mu, but we didn't call it that, we just had the tube do the work. Engineers over the years have seen and heard these things, and a lot that have come in here, have found them and had to buy them. I've had to make some for people but it's too time intensive, it's a lot of work and expensive units to build. Our mic pre, tube Neve- based on 1073, 1084 type pre that we made, you just couldn't sell 'em at ten or fifteen thousand dollars a channel. I mean nobody is going to buy that. So, I've got the only one of those, but it's good stuff, I really like it. I'm not here to promote it, 'cause although we were thinking of ways to maybe try to make more because so many people were interested, in the future maybe we could have a company that actually did it. We just do it for what it costs us basically. Hopefully we're making back that cost if anyone buys one. The factory is in Oxford, Mississippi. Frank Lacy does it all by hand there, although we now do the Deceivers, which are not tube, we do those here as well.

It's fun, it's good to have your own stuff to record through, and I use a lot of API mic pres, because I only have a couple of the Lucas ones, one of the one I like and another prototype, but as far as my limiting and equalizing, I'll do more in that than anything else. I'm very, very happy with it. So, there's the Lucas story.

And you have monitors!

Yeah. That's the first set, I guess the Gamma test version of the Lucas monitors. What I'm going for monitor-wise, I'm just more and more increasingly sick of crossovers. Because every time there's a crossover there's some sort of little phase thing happening, and the definition in the midrange especially is lacking. I'm really just growing sick of it. I thought, "Well surely I can design a better Auratone that's more full-range, better sounding," and so I've been working on that. So far in the other room in testing, I really like these. Next, I'll build an 8" full-range version.

And when you test them, you listen to stuff you've done, you listen to other records?

I listen to everything. I try not to listen to too many finished and mastered CD's, because I want to hear raw sounds. So I'll listen to multitracks or individual tracks or mixes, things like that, and then we'll change out the different components that make it either beam more or beam less, or have more or less highs, different material inside, more or less, just trying to get it balance just right by ear, really.

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