In The Doghouse

by Chris Fitzgerld

Pickup Lines: Making the Most of Your Imperfect Pickup Signal

Double bassists deal with the issue of amplification in many different ways, mostly revolving around the circumstances of their performance venues. While a select few may have the luxury of just showing up with their basses and trusting in the soundman to mic their bass and take care of getting their beautiful acoustic sound out to the audience and other band members, most of the other 99.732% of working bassists have to deal with using pickups through amplifiers at some point. And as anyone who has dealt with this paradigm knows, there are a lot of things in that signal chain, from pickup signal to amplified sound in the mix, that can go wrong and mangle the sound we work so hard to produce on our noble instrument. In this article, I'll be discussing some of the ways that we bassists can take some measure of control of this fact of live performance life and hopefully help make the best of a very imperfect situation.

At the end of each topic section, I'll give a mention to how I deal with this aspect with my current setup, but keep in mind that everyone will have their own personal tastes, and that the same setup in two different sets of hands is likely to sound very different. The topics chosen are things that every bassist using a pickup will have to deal with whether they choose to think about it or not.

Pickup Choice

This is the obvious first step in the process, and unfortunately, there are no easy answers, here. There are a good number of workable pickups out there, and the only way to know if one works for you is to try it and see. Obviously, this can get expensive, so it's a good idea to take advatage of the brotherhood of bassists whenever you can and ask to play other peoples basses (when appropriate, of course!) with different pickups on them and see how they suit the sound you're after. *After using many, many pickups over the years, I have settled on the Fishman Full Circle as the best option for my needs at the moment. Like all pickups, it's imperfect, but it's the closest thing to the sound I'm looking for, so when I go to play, that's the signal I'm working with.*

Input Impedance Load

This issue easily lends itself to excessively technical language, which most bassists (myself included) do not really understand. For this reason, I'll try to discuss this very important issue in the simplest possible terms. There is a relationship between the input impedance of an instrument preamplifier and a piezo pickup; in the simplest terms, most piezo pickups like to "see" a input impedance load of anywhere from 1-20 megohm. Many amplifiers designed for bass guitars will not load the pickup properly, and from that point on, the signal is compromised and not likely to sound optimal. In addition, each pickup has a slightly different "sweet spot" in terms of the input impedance load it likes to "see." If your head is swimming at this point, don't worry – just check the specs of your amplifier's input, and make sure that the input impedance is at least 1 megohm. If it's at least that high, you should be getting a usable signal. If it isn't, you may want to invest in an outboard preamp to load your pickup properly. *To my ears, the Full Circle sounds best with an input load of 4 megohm, but is certainly workable with anything above 1 megohm.*

Setting Preamp and Master stages to Optimal Levels

Most amplifiers have two gain stages: the preamp stage, and the power amp stage (usually controlled by the "Master Volume"). The way these volume controls are set is an important component of the resulting amplified sound. In general, for a more direct, "electric-ish" sound, set the preamp very hot and keep the master volume at a lower level. For a softer and more ambient attack, set the preamp stage lower and the master higher. Many double bassists, equating the idea of "ambient attack" with "acoustic sound," adhere to the formula of turning the master volume up to about 3 o'clock (i.e., most of the way up) and controlling the overall volume with the preamp setting, thus keeping the sound as "un-

electric" as possible. *I tend to set the preamp gain where I like the tone best by setting the master at a fixed point and then using my ears to judge the tone that a sweep of the preamp knob produces, and then adjusting the master from there.*

Blending the Acoustic and Amplified Sound

This one is pretty simple: as players of acoustic instruments, every time we amplify, we are blending the acoustic sound with an amplified sound. Since for most players, the acoustic sound is the holy grail and the amplified sound is a necessary evil, we should strive to use as little amp signal as the musical situation will allow. While this might seem obvious to us, it is not always obvious to those we are playing with. An awareness of this blend and the threshold beyond which we become glorified electric bass players is a useful thing, if for no other reason than to help both we as players and the other musicians we are playing with to understand what kind of bass sound to expect at various volume levels. Often, when they stop to think about it, other players would prefer to limit the overall volume of the group to preserve the purity of the acoustic sound. *I use as little amp as I can get away with, but like everyone else, sometimes I need to just accept that in some situations I'm playing a large unwieldy electric bass that is prone to feedback.*

Subtractive EQ

Even when you have an optimal input impedance for your pickup and set volume levels to get the best tone possible from a pickup, it's still a pickup, and often will need some adjustment from the EQ section of your amp or preamp. There are two possible ways to adjust your sound with EQ: you can boost the frequencies you aren't hearing enough of, or you can cut the frequencies you're hearing too much of. Most players feel (and I agree) that it's more natural-sounding to cut excessive frequencies than to try to boost missing ones. Think like a sculptor – your amplified sound is like a block of stone with a beautiful (or at least, a better) tone hidden in it somewhere; chisel away the excess to reveal the more natural tone underneath. My favorite piece of EQ gear, the high-pass filter, is the perfect example of subtractive EQ for use with piezo pickups. It carves away excess low end (which tends to sound more and more unlike a real double bass the louder the amplified signal gets) with a single intuitive control that can be adjusted to taste with ease at any volume. *With my current setup, I set the EQ stage of my amp completely flat and only use the high-pass filter to gradually remove excess lows as the volume increases.*

Bass and Speaker Placement

Think of the top of your pickup-equipped bass as the diaphragm of a microphone that picks up vibrations from the air, and then think of what happens when you place a microphone directly in front of a speaker connected to that microphone. That imaginary feedback you're hearing in your mind as you think of this contains a great lesson for bassists: whenever possible, don't let the top of your bass "see" the speaker amplifying the bass. If it's possible, sit beside and slightly behind your amp, or find a way to point the amp so that the amplified sound can't make its way back to the top and body of the bass. There are a number of ways to do this. Years ago, I used to mount my amp up on a PA speaker pole so that the sound would go over the body of the bass. This worked beautifully, but carrying and setting up this system was a hassle that I eventually abandoned. Another option is to point the amplifier upward by tilting it back, or setting it up on a chair. Both of these things can work, as can other solutions. The important thing to remember is that if amplified sound is best minimized, doubly amplified sound that is the result of the pickup amplifying not only the sound of the bass, but also the amplified sound from the amp is especially unnatural and should be avoided at all costs. *For the moment, my current amp solves this dilemma by having two small speakers on the top pointing upward toward my ear while a larger number of small speakers point forward. This allows me to technically keep the bass "behind" the majority of the amplified sound but still be able to hear myself.*

Onstage Sound Versus Out Front Sound

Last, keep in mind that even if you find a sound that is pleasing to you on stage, that sound will be different out in the room. Ask yourself where you would like the sound to be optimal. If the answer is "out in the room, where people will hear it," then it's a good idea to test your out front sound by bringing a long cable and getting as far in front of your amp as possible during sound check and hearing what the amp signal sounds like once it starts to be shaped by the room. In my experience, rooms tend to warm up the amplified signal once the sound starts bouncing around, which can be pleasing. But at the same time, they also darken it, and if the source stage sound was already nice and warm and dark, there's a distinct danger of muddiness. *For this reason, I try to dial in my stage sound a little brighter and harsher than I like to hear onstage, so that the sound in the room will be warmer, but still have definition.*

While it's true that pickups are a compromise, at best, in our quest for a double bass sound that exists in situations that are louder than the double bass can sound acoustically, an awareness of the issues mentioned above – and a lot of trial and error – can make this very imperfect (and very common) scenario a little more manageable. Once we've done all we can to get the best sound possible, it's time to forget about gear and focus on making music. BGM