



In the Doghouse

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Pickup/Mic Blending Overview - Part 2

In our last installment, we discussed the basic topics involved with getting the components for a live amplification setup together for blending a mic and a pickup. These components included choosing a mic and mounting method, finding a two-channel blending device that allows both mic and pickup to see a desirable input impedance, and making connections so that all of these are plugged in and ready to experiment with. In this issue, I'll talk about strategies for maximizing the effectiveness of the blended signal through the amp in live performance situations.

Over the years, I've spent what seems in hindsight a ridiculous amount of time obsessing over how to blend in a mic signal with the pickup through my amp in live situations. For years, much of this obsession involved coming up with a sound that was wonderful in my living room, but far less than that out in the real sonic environment of the gig. Even if I realize that technology will continue to produce better and better gear that can help me improve my sound in the future, and even if I admit that some of the improvement in my blended sound now as opposed to five years ago can be attributed to the acquisition of better gear, there are still a number of concepts that I've found useful to improve the blended sound regardless of the gear used. I'll list the most important of these as subtopics here, and elaborate on each with what my experience has been with these aspects on my ongoing quest to get closer to THE SOUND. For ease of formatting, I'll post the topics as

questions – since this is how they first occurred to me while experimenting – and then attempt to give at least a partial answer to each. Remember that each person will have to answer these questions to their own personal taste, and will have to travel the road of personal experimentation to get closer to their own personal sonic ideal.

How much mic signal do I really need to blend in to improve my sound?

This question is in many ways the toughest of all, and in my case it was particularly difficult because of a fundamental disconnect in my rational mind. The disconnect went down a path something like this: *Since the best sound I've ever heard out of my bass has come in the studio using only a mic, then surely the more mic I can use live, the more natural my sound will be. Therefore, it would be best if I could find the perfect mic that would allow me to use as little pickup as possible, or none at all.* While this reasoning seems to make sense on the face of it, hundreds of gigs in live sonic environments have taught me that it's fundamentally untrue for many reasons. The biggest of these is the difference in the environment in the studio (or living room) and the stage. In the studio, there is often complete isolation of instruments (if you're recording in a booth), or very good isolation of instruments (using portable sound baffles to contain the sound each instrument mic "hears"). On stage, there is little or no isolation, and all sorts of ambient noise happening most of the time. Microphones are designed to pick up all the sounds within their polar patterns, so if they can "hear" other instruments like drums, guitar, piano, etc., they'll be amplifying that along with that precious bass signal you're trying to blend with your pickup.

In my experience on lots of different stages, the best sound I've ever gotten for the overall mix of the ensemble has been

with a setting of about 50% mic and 50% pickup (according to the preamp settings only – in reality, there's quite a bit more pickup "weight" to the sound than comes from the mic). The moment the mic signal starts to get too high, all sorts of "tubbiness" (for lack of a better term) gets introduced into the signal, making the overall result much worse than if I weren't using a mic at all. I finally came to realize that what I'm really trying to get from the mic is basically two things: a little "air" and "wood" into the sound to compensate for that flat piezo electric-y sound that can make a double bass sound like a giant fretless bass guitar. And, a little extra sense of "oomph" behind the amplification of the *G* string, in particular, and the upper registers in general. The toughest lesson for me in all of the experimenting has been the concept that sometimes with a mic, less is more. Each mic has a volume threshold beyond which the results get harder and harder to control. Once the basic mix is found for the mic, I try to adjust only the pickup gain when and if more volume is needed.

How should I set the EQ on my mic to get the most "air" and "wood" in the mix?

This is very personal for each player, but in my case, the answer has been that rather than have the mic and pickup trying to do the same things in all registers, I designate each a primary color and try to make them compliment each other. Most pickups (in my case, the Fishman Full Circle) are capable of producing a massively solid bottom end and a decent low-midrange signal. Where many fail is in a realistic interpretation of the upper mids and highs, often substituting a glassy, slippery string noise for note articulation and overtones of each note. Most mics, on the other hand, cannot compete with the lows and low-mids that a pickup can put out without becoming boomy and hollow sounding

through a stage amplifier. But they can produce a much more realistic reproduction of highs and upper-mids. While my left brain insists that it makes more sense to *get the best possible total sound out of both mic and pickup and then blend them together*, my experience has shown me that the best result comes from understanding that the blended signal is the real bottom line. The best way to maximize that bottom line is to forget about trying to make the parts perfect and focus on making the whole sound better.

To this end, I like to use the following settings on the pickup (assuming a high-pass filter and three EQ knobs: low, mid, and high – if you don't have the luxury of a high-pass filter, you may need to attenuate the lows a bit): high-pass filter set at about 60 or 70Hz to remove the gooey low-lows that always sound unnatural to my ears when amplified too much; lows set at, or slightly below, “flat,” depending on how boomy the room is; mids set at about 9 or 10 o'clock, assuming noon is “flat”; and highs rolled back to 9 o'clock or below to get rid of that glassy string noise “bass direct” character. By itself, the pickup sounds beefy and solid, but somewhat dull, when set this way.

For the mic, I'll usually start with a setting that accentuates what the pickup signal is missing: high-pass filter set at 80Hz, and sometimes even higher to tame the boomy noise created by hollow stages, tom toms, and (especially) bass drums; lows set to about 10 o'clock – this seems counter-intuitive at first, but the pickup makes up for it in a cleaner way than the mic can; mids close to “flat,” understanding that there's a fine line to be walked between “able to cut through the mix” and “harsh and bright;” highs at about 9 or 10 o'clock, or maybe even a little higher in a dark-sounding room.

Taken separately, each of these EQ settings on their respective sources produces a sound that is clearly lacking something. Taken together, each source is being asked to do what it's best at in the circumstances. The net result is not only greater than the sum of its parts, but also (when things are going well) warm, articulate, and more detailed and complete than either element could be

on its own.

How can my physical stage setup help me maximize the benefits of the mic blend?

On this topic, the key word is isolation. Sounds impossible, right? You're on a stage with a bunch of instruments that are louder than yours, and you're trying to make sure that the sound of your bass is louder in your mic than the sound of the other instruments. It's a difficult situation, but there are some factors that you still control. The first thing I always ask on the subject of isolation is “what am I trying to isolate my mic from, and in what order?” While the obvious and funny answer is “drums, drums, and drums,” that's only partly accurate in my experience. My real answer would be: cymbals, especially the ride cymbal; toms, especially low ones; bass drum, especially if tuned low and; ironically, your own amp.

While it's technically impossible to isolate your mic from all of these things, there are some things you can do. First, have a good understanding of what your mic “hears,” and in what way it hears it. For instance, your mic “hears” in a pattern radiating from the diaphragm of the mic, and therefore catches reflections off of the top of your bass. The best way I know of to isolate the mic from most of the drum signals mentioned above is to position the bass body between the drum sound sources and the pickup pattern on the mic. In my case, I mount the mic on the bass side of the lower bout, and when the drums are on my left (as is usual), I try to make sure that the ride cymbal, bass drum, and toms can't “see” the front of the mic (translation – no clear unobstructed line can be drawn either to the front of the mic or to the top of the bass that the mic is pointed at). It's still amazing to me how much of a difference this simple setup principle makes on almost any stage.

For your amp, the trick is similar to what is described above with the drums – find a place to place is where the mic can't “hear” what is coming out of it and start producing a feedback loop out of the results. The problem is that while you don't want your mic to hear what's coming out of your speaker, it's often helpful if your ears can

hear exactly what your blended sound sounds like so you can try to blend in with the totality of the ensemble sound. The secret for me is intimately related to what's described in the above paragraph: since the mic is already “isolated” from the direct path of the drums by the step described above, I try to place my amp on the side of the drummer and a little behind me so it's isolated by the same measures. Since the lows can still be transmitted through the body of the bass, I usually try to set the amp up on a chair and tilt it upward slightly toward my left ear, allowing my ear to hear the amp, but directing the sound away from the direct path of the mic. Variations on this setup also allow for a personal mix that has a studio-like “more me” quality for me personally, but not for the others on stage.

One final tip – the real bottom line

As I've mentioned earlier here, the real bottom line of the blended sound isn't how each element sounds by itself, but what the overall blended result sounds like. The biggest lesson I've ever learned about amplifying double bass in general has a similar moral to the story – namely, that no matter how good I think my amplified sound is onstage when I'm the only one playing, the real goal is to make the bass fit into the mix of all the other instruments in such a way that makes the whole band sound good. To this end, I've found it useful on many occasions to keep a long set of cables in my car for sound checks. When I can, I try to get everything situated onstage, then play for a minute or so (preferably with the rest of the band) from as far out in front of the stage as my cables will get me and listen. I'm often surprised at what aspects of the sound are out of whack from out front, but when I discover an imbalance, I try to correct it in the “out front” sound and learn to live with the imbalance onstage. It's hard to reconcile, but knowing that it's making the band sound better to the audience is more than compensation enough. At that point, it's time to forget about all of this obsessive gear/tone related stuff and just focus on making music. Isn't that kind of the point of it all anyway? ■