GEAR

MASTERING THE ART

Inside one of the most crucial and mysterious steps of the recording process

MASTERING ENGINEERS HAVE ONE of the most specialized and hard-to-define roles in the music business. They sit in finely tuned rooms surrounded by boutique and vintage equipment, often finishing a record a day. But what does it mean to master a completed mix? Especially in this age of affordable digital home recording, asking five experts might elicit five different answers. We caught up with two of the industry's foremost mastering engineers to get their perspectives from behind the desk. Bill Wolf of Wolf Productions has mastered albums for artists such as Nils Lofgren, Seldom Scene and Tony Rice, while David Glasser of Airshow Mastering has worked with acts including the Grateful Dead, Beausoleil, Pete Seeger, Bill Kirchen and String Cheese Incident.

What do you need from an artist or producer to do your best?

WOLF: These days, most of my projects are sent to me as opposed to presented in appointments. In that situation, one of the most important things to receive is accurate paperwork and instructions. This area seems small, but actually ends up costing more time than anything else. I need a text-based file with the sequence, proper spelling and punctuation of the titles, the name of the CD—all the busywork. It helps to have the technical information, too—sample rate, bit depth, so on. My least favorite format to receive is a playable audio CD. Some kind of data format in 24-bit resolution or higher is preferred. When mixing inside a DAW [digital audio workstation], the mix bounce should be at the same sample rate

as the project, even if that means the tracks submitted for mastering will not all be at the same sample rate. In other words, if the song project is at 48 kHz, don't bounce it to a 44.1 kHz file. Mixing software provides on-the-fly sample rate conversion as a convenience, and using it on a final mix can degrade the sound.

What are some of the standby pieces in your gear chain?

WOLF: It definitely varies by the music and the sound. Digital and analog outboard chains are available. Generally speaking, when I get something that has been mixed inside a DAW, the first thing I reach for is my analog chain. It has some tube equipment, a Studer tape machine that I will sometimes print to, vintage compressors and the like.

Which devices I use will depend on the program content. Mixing inside the box has been often criticized, but it can produce good audio with proper use of the software. Outside-the-box mixing requires high quality, expensive digital-to-analog and analog-to-digital converters. Otherwise, the negative effect of the extra layer of conversion can outweigh the benefits of analog summing.

GLASSER: Most of the processing I do is in the analog realm. The basic tools are compressors, limiters and equalizers. A compressor may sound great on one mix and not work at all for another, so I have several of each and I try things out. Of course, not all mixes are going to need more compression.

I imagine projects come to your studio relatively topped-out these days.

GLASSER: Well, not all projects are intended to be slammed into the super-loud. I don't tend to use compression to bring the level up. I use it more for its tonal character, or to create a vibe. I also like to remind myself that if I couldn't make good-sounding records with half of the gear that I have in my room that I'm probably in the wrong business.

What about software?

GLASSER: The main program I use is called soundBlade, but I use it primarily as an editor and recorder. I don't really use it to process things. When I do stay digital it's not "in the box," it's using the box as a recorder and a player with outboard digital devices [doing the processing]. From what I know about these workstations, it is more about what you feel comfortable using. They're all capable of doing the same thing and plug-ins are available in all kinds of different formats, so I don't think it matters much which workstation you choose. It used to, but I don't think it does anymore. I get mixes done on a variety of platforms and I don't think I could tell the difference. It's more a question of the engineer using the tools in the best way. We're at a point where Wavelab, Pro Tools and soundBlade each do a quality job of capturing audio, processing audio and

David Glasser

spitting it back out.

WOLF: With the proliferation of inexpensive quality plug-ins, it's become popular to put processing on the stereo output bus while mixing. Some mastering engineers are vigorously against that. I am not quite in that school. Properly used, bus limiting or compression is just another tool. However, there are some caveats. It is very difficult to un-limit a heavily limited file, and the tone of the limiter is permanent. The flip side of that is that unless there is some unintended distortion, I won't say to a mixer, "OK, now take your limiter off and send me the un-limited mix." That's because if the mixer is

'Mastering offers the opportunity to work in a variety of music genres. Every day will bring something different.'

–Mastering engineer Bill Wolf

working with the limiter on, then he or she is making adjustments based on what the limiter is doing. If the limiter is removed, the mix could fall apart and not sound like what was approved by the artist or label. I might suggest starting out with nothing on the mix bus and controlling the peaks using track- and clip-based automation. Using heavy limiting or compression on the mix bus can mislead the mixer because it's correcting level differences between, say, an instrumental section and a chorus. It also will be grabbing peaks, like in a snare drum track

or solo, that could be overloading the digital summing bus.

What do you find most rewarding about your work?

WOLF: Mastering offers the opportunity to work in a variety of music genres. Every day will bring something different, and the variety in itself can be rewarding. Once in a while an extraordinary performance, regardless of genre, will come into my room. It could be a rhythm section, orchestra, vocalist, sax solo, lead guitar break, rap, mandolin solo, bagpipes, anything. That can make the workday much easier. Tracks with high quality engineering and mixing are also a pleasure. Then I can concentrate on what is traditionally thought of as mastering: adding that "sheen," adjusting track-to-track levels, maybe tightening the bass, hopefully contributing to the creative process. The challenge of repair work and solving problems can occasionally be rewarding. Last night I worked on a track where the kick drum had not been controlled in the mix and was overpowering the bass. It was an indie singer-songwriter project, and they wanted the bass full and featured. I called about a remix but the time and budget were not available. I found a spot, using multiband compressors, where the bass was present and the kick wasn't killing the voice. A remix probably would've sounded better, but there was a sense of accomplishment in helping the music to "work."

GLASSER: When it gets down to it, recording your music and making it available for download or for sale is fairly easy. People really can do that all by themselves now. The challenging things are things not everyone can do, tasks that take specialized gear and knowledge to achieve, and working with oddball formats. Working with analog tape sources is a dying art, and I like that we have a lot of tape machines here. But that requires constant maintenance and alignment and isn't something most people can do at home. So that's where a dedicated mastering house can help. The most satisfying thing for me is when the client listens and says, "Wow! I thought my mixes were good, but this really takes it to another level."

–Dave Jones