EXPERT ADVICE

By Paul Abbott

What EXACTLY Is Mastering? And Why You Need It.

The other day I went to a friend's studio to help him calibrate the monitors in his control room. He felt the low-end was out of balance, and after running some tests I noticed he had a big peak at 100Hz and then things dropped off sharply from there down.

After repositioning the mains and tweaking the sub I was able to get the 100Hz bump smoothed out and the information below that to a more even level. While I was working, we talked shop and he said, "You need to write a simple, non-technical article about what mastering is. I'll pay you $100 if you write it."

Now I doubt he's going to actually pay me when he reads this, but I think his point was that if I could write an article clearly explaining what mastering is, it would make his life easier, because he's always trying to explain its importance to his clients.

A PLACE TO START

We need to start with a clear definition, so here it goes. *Mastering is the creative and technical process of analyzing and adjusting final mixes so they sound balanced and consistent in the multitude of playback systems in the consumer world.*

That's it… or at least that's my definition of mastering. And though the concept is simple, the reality can be—and often is—complicated. Here's why: While I can explain the *purpose* of mastering, what actually happens is different from project to project, based on both the facts of the recoding and client expectation.

WHERE IT GETS FUZZY

Mastering is a reactive process determined by what happenend in tracking and mixing. And so, obviously, you can't know what you're going to do until you hear what's been done. As an example, if someone's monitoring system isn't properly setup, a mastering engineer has a lot more work to do because basic frequencies and stereo placement will not be balanced. That's why my colleague wanted me to come over: to tighten up his room so that he knows what his mixes *actually* sound like and, therefore, what he gives me will need less radical adjustment.

If a recording is well done, with accurate monitoring, then the mastering engineer focuses on refinement, not rough balancing. And this is where the real technical and creative art happens, because there are many ways to accomplish the same goal and often times success depends not just on *what's* done, but also *how* it's done. For instance, small details can make a huge difference in the effectiveness of mastering. Should the equalizer come before or after the compressor? Will a left-right EQ work or should it be mid-side processing? Maybe parallel compression is the ticket. Perhaps the mix really just needs a limiter, but what kind of limiter?

Starting to get the point? It's hard to say, technically, what actually happens in mastering from one project to another other than "equalizing for balance and controlling dynamic range for impact and consistency." But how those are done is the art that makes mastering mysterious, elusive and magical. And it could be anything from super simple to ultra-complex. Again, decisions depend not only on the recording quality but also on the style of music being mastered, and whether a heavy hand or light a touch is most appropriate for the recording.

A FEW ABSOLUTES

What I've learned from 12 years as a mastering engineer is that there are only three things truly required for successful mastering:

- Experience
- Objectivity
- A world-class playback system/listening environment

An accurate work environment, objectivity and experience can't be faked, and they'll never exist in a box or plug-in. They're either there or they're not. And that's why professional mastering is valuable: it's based on intangibles that produce real results. All you need to do is compare a professionally mastered album to an amateur one to know what I'm talking about. A seasoned pro hears a mix and may decide that nothing but the smallest touch-ups are required, where an amateur may add the latest linear phase multi-band plug-in, throwing an already great mix out of balance. How does the pro know his decision is correct? He has a better listening environment and more experience to draw from, so he's not guessing from presets or generalized notions.

WHAT ABOUT ALL THE MAGIC BOXES?

Yes, processors are important. In a technical sense, it's critical for the mastering engineer to create a signal chain with the highest headroom and lowest noise floor possible. And that gear is quite expensive, and the process of putting it together is tricky and time consuming. And then, of course, every known M.E. has their "secret processing sauce" they swear by that may be a combination of tubes, solid-state or digital gear for when coloration is required.

But I would bet dollars to donuts that the world's best mastering engineers armed with nothing more than an average plug-in bundle could still deliver amazing results because they have the experience, objectivity, and professional listening environment. If it was about the gear, anyone could walk into Gateway Mastering and do as good a job as Bob Ludwig, but that isn't case. In the end, equipment is just a knife. The key is having the right one for the task at hand, and knowing when and how to use it. It doesn't do the work or know how to make a decision.

DID I EARN MY MONEY?

While I can deliver a definition for master, I can't offer a definitive answer as to what happens from project to project. Everything that happens (or doesn't)—from the best way to receive the finished mixes to cutting the master disc—is up for legitimate debate based on the recording and the style of music captured. But whatever occurs, it must result in the final master sounding consistent in the multitude of listening environments that exist in the world. And the only way to really achieve that is with objectivity, experience and a world-class playback environment.

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