

## ENGINEERS' ROUNDTABLE: MASTERING IN THE AGE OF DOWNLOADS

*We posed the question to our staff, "Does mastering still have a place in the era of the digital download?" Not surprisingly, we answer in the affirmative - and we give some good reasons.*

**Jim Wilson** I would say that mastering has become the most important step in the process now that so many artists are recording in small, inexpensive project spaces, which they may own for private use.

**Dominick Maita** Definitely - because music as a personal expression is often created in a personal environment. Without the benefit of objective ears, the mastering step is as essential as ever. The mastering engineer is often the only outside listener, and can provide valuable feedback.

**Jim** Often the mastering engineer is the only professional handling a recording project. While I think it is great that many artists now have the ability to explore their muse and capture the "sound in their head", it takes the skills and experience of a top-level mastering engineer to make that sound presentable and consistent on the vast types of modern playback systems, including car stereos, headphones and iPods.

**Dave Glasser** Mastering puts the finishing polish on a piece of music or performance and completes the producers' and artists' vision. That's true whether the end product is a CD, SA-CD, HD broadcast, or MP3 download.

**Jim** I don't think that a project slated for download has any different criteria than a project destined for CD. A great sounding master for CD is already optimized for mp3/ AAC encoding. And as mp3 encoding strategies improve, the need for a high-resolution source will only become more necessary.

**Charlie Pilzer** As always, audio technology has to be in service to the song and the performance of the artist. One of the goals of mastering is to maximize the emotional impact of the music and to make it compelling to the listener regardless of the playback technology involved. That can be difficult to achieve, with today's compression schemes removing so much information. But that's all the more reason to work from high-resolution mixes and to master in a high-resolution format.

**Dom** A mastering suite is set up to provide the best possible critical listening environment so that the mastering engineer can make the end product sound great no matter where it is to be placed, whether film, TV, high-end audio, or download.

**Ann Blonston** Even though "download" connotes "iPod" today, a download is just a way to receive a piece of music, and doesn't imply any particular playback system.

For under \$1,000 you can set up a computer-based, wireless system that distributes high-fidelity audio throughout your home to feed to your home theater system and a second stereo system in your home. You manage your music on a computer. That music may be ripped from a CD or it may be downloaded to the hard drive.

The new systems are so easy to operate, and (relatively) inexpensive for the one-time investment, it's clear to me that most of us will be using a management system for our music that involves wireless+computer, in addition to or instead of drawers and shelves.

**Jim** I agree with Ann that the future of home entertainment is a centralized Media PC with video, surround audio and Internet functionality. Our studios are already outfitted with powerful computers with high-end audio cards capable of multi-channel, high-resolution audio. The only things preventing high-resolution audio everywhere are portability and speed. High capacity drives and memory chips are only becoming smaller and cheaper, and high-bandwidth networking is becoming more commonplace. It's only a matter of time until we reach the technology/dollar breakpoint. That's when high-resolution will matter and data compression schemes (mp3, mp4, DTS, etc.) will no longer be necessary.

**Ann** With that (near) reality in mind, it seems that the most prudent approach is to produce the music for any listener's multiple environments, not just the least common iPod denominator. There's a lot of music on the web that is "of the moment;" a streaming-only offering, a casual jam for fans to download. Admittedly, these offerings may not call for "mastering" as we know it. But when an artist creates music that will have multiple delivery channels, (CD, satellite radio, digital download, for example), and that the listener can own, then the artist can't predict the playback environment. It could be low-res or a home entertainment system.

**Charlie** We lost some good music in the transition of LP>Cassette>CD, because the economic case couldn't be made for re-mastering. We learned we need to future-proof our work.

**David** The history of audio release formats doesn't end here. We know, from our own experience of the past 25 years of music technology, that the future will demand higher sonic quality.