

# The Art of Recording: Delivery

**One of the most-asked questions I hear from musicians is how to prepare audio files properly for mastering; after all, you want the mastering engineer to have the best possible raw materials. Following are some guidelines relating to the three most common issues: volume, resolution, and editing.**

by Paul Abbott

## VOLUME

A common mistake the well-meaning musician makes is attempting to get a mix as loud as possible. As far as I can tell, this is because most people don't know whether mastering addresses this issue (FYI, it does). Many artists — believing it's better to be safe than sorry — do one of two things: normalize their tracks, or send them through a compressor/limiter (or some sort of "finalizing" plug-in). Unfortunately, both degrade sonic quality and neither delivers the desired result.

Contrary to common belief, normalizing does not make tracks as loud as possible. The normalization process scans a digital audio file and looks for its peak volume, then moves that point up to digital zero. All other sounds in the file are adjusted proportionally. So, if the file's loudest point is a snare hit that registers one dB (decibel) below digital zero (-1 dBFS), normalizing will make the entire track one dB louder. This is hardly what most users of this function are trying to achieve. Furthermore, normalizing does nothing to address the *average* volume of songs — which is more crucial for the proper aural perception and flow of a good CD.

Another problem occurs when musicians add a "mastering" plug-in to the mixdown process. I receive a lot of files that have been treated this way and it creates two problems. First, the files may be so hot that they overload any process applied in mastering (equalizer, limiter, etc.). Second, the process's effects cannot be removed, so I have to pull every trick in the book to counteract the plug-in's negative effects. This turns mastering into an audio salvage effort, not a fine-tuning improvement process.

## RESOLUTION

Always deliver the highest possible resolution digital audio files for mastering. If your hard disk recording setup offers 20-, 24-, or 32-bit — as well as 48, 88.2, 96, or 192 kHz — capability, it's to your advantage to utilize it. Even though your audio files will eventually convert to 16-bit/44.1 kHz for the CD's commercial release, editing done on the files before that point will be much more transparent-sounding when processed at a higher resolution. While it's okay to burn audio CDs to

reference your work, always make sure that what you deliver for mastering is the same resolution as what you used while recording and mixing.

## EDITS

Another common problem comes from musicians who've already done intro edits and outgoing fades, because "the song only needs EQ and level treatment." Contrary to common lore, adding fades does not make the mastering engineer's job any easier, and in some ways it can make specific tasks nearly impossible. Consider a recording that needs to have some electronic hum or microphone hiss removed. To do this successfully, a bit of that noise must be taken from a part in the song where there is no music, so as to effectively isolate a digital "fingerprint" and create a filter (Fig. 1). Ironically, the best place to take this fingerprint is the few seconds before or after a song. If that space has been removed, it is much more difficult to get a good sampling of the problem noise.

If you need an exact fade or edit point in the recording, it's best to carefully document these requirements (H:M:S) on a song-by-song basis for the mastering engineer. Accuracy can be confirmed in the reference disc.

The next time you're working on a project, keep these concepts in mind. They will give your mastering engineer the necessary flexibility to bring out the best in your music, and result in a more professional-sounding product. **EQ**

Paul Abbott owns and operates ZenMastering ([www.zenmastering.com](http://www.zenmastering.com)), a full-service audio mastering company located in San Diego, CA.

**Fig. 1.** This narration example was recorded on location, and had severe camcorder noise. Fortunately, it was sent for mastering with the end untrimmed, thus making it easy to grab a piece of the noise (the yellow stripe toward the right) for use in the Diamond Cut 5 noise reduction program.

