On the Level

GET BETTER-SOUNDING TRACKS BY RESTORING DYNAMICS

By David Walley

As professional entertainers, we care about the quality of our work. We spend countless hours preparing for events, and invest thousands of dollars on lighting, equipment and music. It's important to have the right equipment, so our clients and their guests enjoy great music and want to dance at their celebrations. We take great care to select the right players, mixers, amps and speakers...but what if the original music is not a good as you expect it to be?

Many seasoned DJs know that music was produced differently years ago. Today, it seems that every song is "at maximum volume" with little or no dynamic range. Dynamic range in music is the difference between loud and quieter passages of the song; unfortunately, much of today's music lacks this key element of quality.

But there is a partial solution to this problem; I have even been able to make the MP3s that I add to GoodMusicDJ.com's library sound even better than the original CDs! That may sound impossible, but I have evidence. So sit down, have a cup of joe, and see if you want to spend a little more time and effort to make your DJ business sound better.

I'm using several examples from different sources to demonstrate what I've learned, and I'll explain the process to make your music sound better.

EXHIBIT #1

The first example is "Nice to Meet Me" by Tino Cochin, a VBR MP3, recently purchased from Amazon at 6,908 kb. I opened the file with Sony Sound Forge 8. Here's what the song looks like:
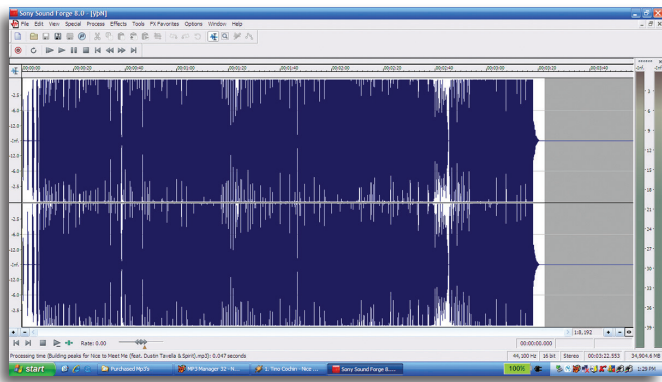

Ugly, isn't it? Look at how the levels are slammed. There is constant clipping!

The next step is to reduce the volume of the entire song by 5.25 dB. This involves trial and error and the amount of volume reduction depends on whether or not the final MP3 contains any clipping. Here's what reducing the volume by 5.25 dB looks like:
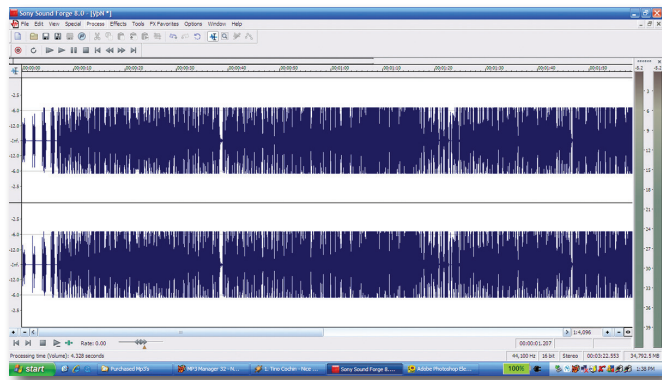
The final process in Sound Forge is to save this file at 128kb/44kHz. Here's what the final MP3 looks like, which I added to the library (after proper tagging, of course):
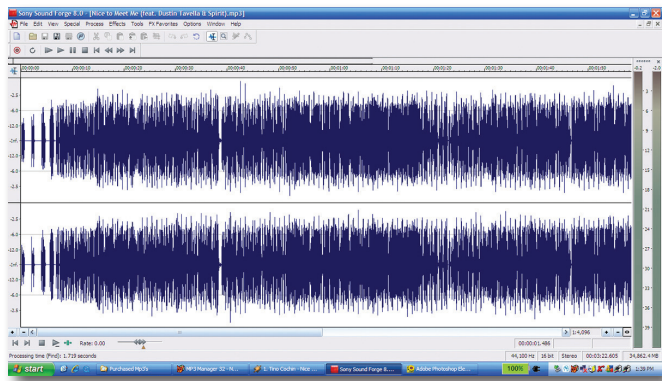
The final MP3 is less than *half* the size of the original VBR file and sounds so much better! Clipping has been eliminated and there is improved dynamic range. (Clipping is a type of distortion that is often mistaken for just too high volume.) This improved dynamic range makes the sound much more pleasing to the ear because the music is not constantly at the maximum volume.

When music is constantly at the maximum volume, over time it starts grating on the nerves and people begin to complain that the music is "too loud" and you'll be asked to turn down the volume.

My reconstructed music is also good for your gear. GoodMusicDJ has never experienced blown tweeters or other speaker components, but sometimes other DJ companies have this problem. Perhaps the cause can be traced to these clipped waves or square waves. When square waves are pumped constantly into a speaker, the result can be blown tweeters.

EXHIBIT #2

Now let's take a look at a song we play nearly every night: "Billie Jean." This track is taken from Michael Jackson's *History* double CD. I used an older version of iTunes to rip the CD to a WAV file. WAV files are uncompressed and allow for lossless saving. Here, the original WAV file is huge, at 50,589 kb. You would think this

would have the best quality possible, right? Well, I'll show you that my MP3, which is 1/10 the size, actually sounds better! Why? Because it does not have the clipping that is present in the original CD. Here's the a zoomed-in view of the clipping present in the first drum beat of the original "Billie Jean" WAV file:
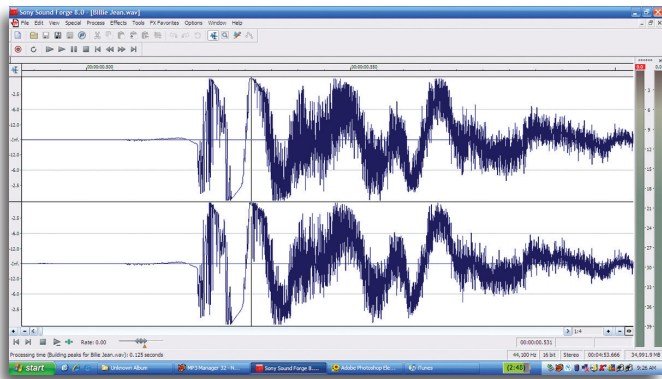

I placed my cursor (vertical line) on the part of the wave where you can actually see the top of the wave is squared off. This is clipping. That's horrible distortion, although in this case, it's just a little bit of time. But I don't want *any* distortion in my music!

Next, I reduced the volume of the original wav file, this time only -2.25dB (via trial and error). Here's what that looks like (zoomed out):
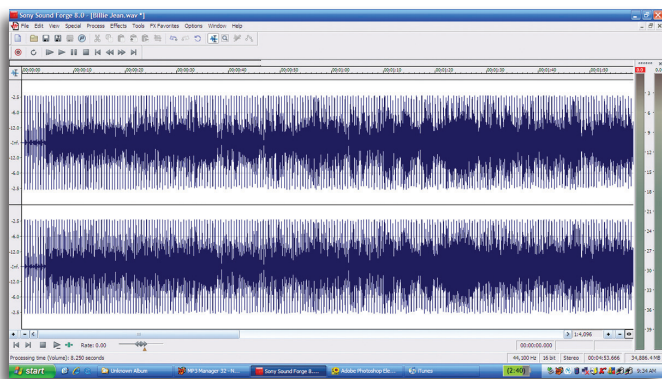
After saving it as a 128kb/44kHz file, this is what I added to GoodMusicDJ.com's library:
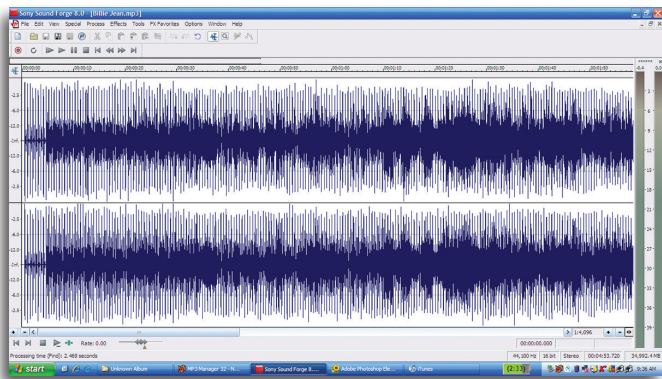

Again, the result is zero clipping. The MP3 sounds better than the original CD because clipping has been eliminated. Many of us don't realize that making an MP3 file can increase the volume

of our music in the process of encoding; so a song already at 0dB on the CD will be clipped when converted to MP3. We play this distorted music over our expensive gear and hope it sounds good. I've actually found a source for my music that has taken this into account and doesn't record the CDs with a 0dB level.

EXHIBIT #3

So far, I've given two examples; a VBR MP3 purchased via the internet and CD purchased directly from the artist. Each one is a good example of how this process can improve fidelity.

The final example I'll use is from a source that supplies music to many of us. From a December 2004 disc, it's "Mr Brightside" by the Killers. Here's the original WAV file in Sound Forge before editing:
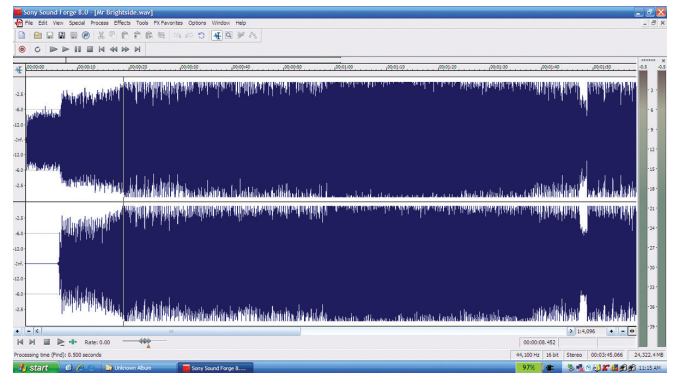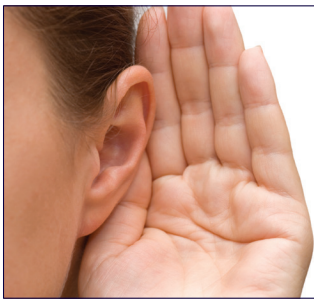

Once again, I employed Sound Forge to reduce this uncompressed wav file by -2.5dB (again trial and error) and the result looks like this:
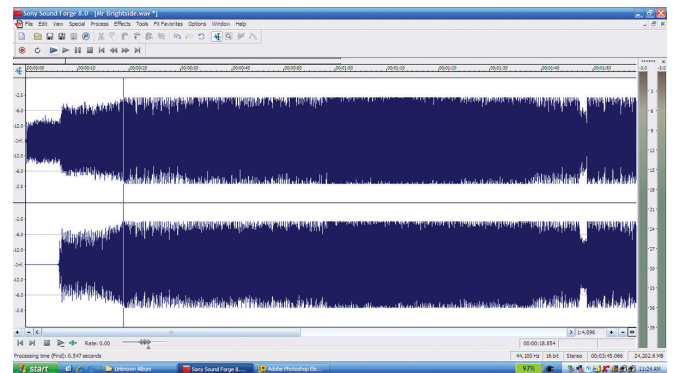
Saving this edited wav file to MP3 at 128/44 format, the result looks like this:
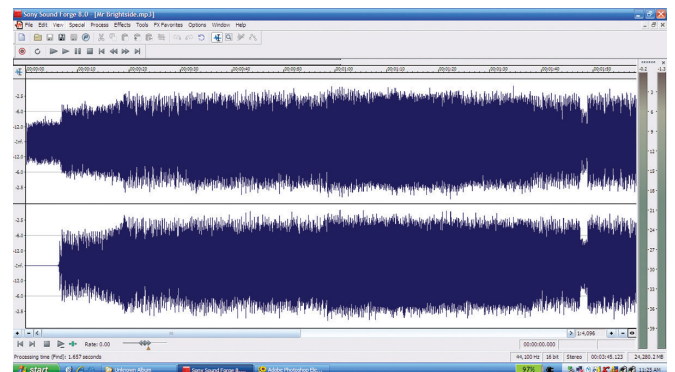
Improved dynamic range makes the sound much more pleasing to the ear because the music is not constantly at the maximum volume.

It's not much, but there is a little more dynamic range and no clipping!

I don't know why this works, but it does. I can actually improve the fidelity of some of the poorly produced music that is in our libraries. It's almost like changing lead into gold.

Another reason to revisit some of the music in our libraries is the opposite of the above: that some of the songs are not loud enough. One example is "Stayin' Alive" by the Bee Gees, from the *Saturday Night Fever* CD, which needed to have the volume turned up by +1.6 dB. Now it sounds better.

In conclusion, I'm not suggesting that you scrap your entire music library and start over, but you may want to see if this is something you might implement over time. Perhaps taking the Top 100 Fast Songs list and editing 10 songs per week. Remember to rip to a WAV file, make the edits, then save to your MP3 format. Over time you'll have a more musical sounding system with less irritation and fewer people complaining that the music is just "too loud."

For more on this topic, please visit my blog at www.goodmusicdj.com. Keep on rockin'! **MB**

David Walley owns and operates GoodMusicDJ.com and has entertained audiences and satisfied clients all over West Michigan. Check out his DJ blog www.goodmusicdj.com.