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How Loud Should You Mix?

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Sweetwater

Thumping bass. Roaring guitars. Let’s face it — cranking up the volume is fun. It gets you pumped. But if you do it while you’re mixing in the studio, you’re shortchanging yourself. Here are several reasons why you should turn it down when mixing.

Everything Sounds Better Loud

Your ears aren’t linear devices. Just ask Fletcher and Munson. (The Fletcher-Munson curves are graphs based on their scientific research that illustrate how our ears hear different frequencies at different volumes.) Our ears are most sensitive to midrange frequencies (around 3–4kHz). Increasing volume, however, accentuates lower and higher frequencies. This flattens out the listening curve, creating an illusion of power and clarity. That’s why everything sounds better loud. If you mix under these conditions, your music will sound incredible — until you turn down the volume. Then your mix will sound puny and midrange-y. Conversely, if your mix sounds great at lower levels, it’ll still sound great when you pump up the volume (Figure 1).

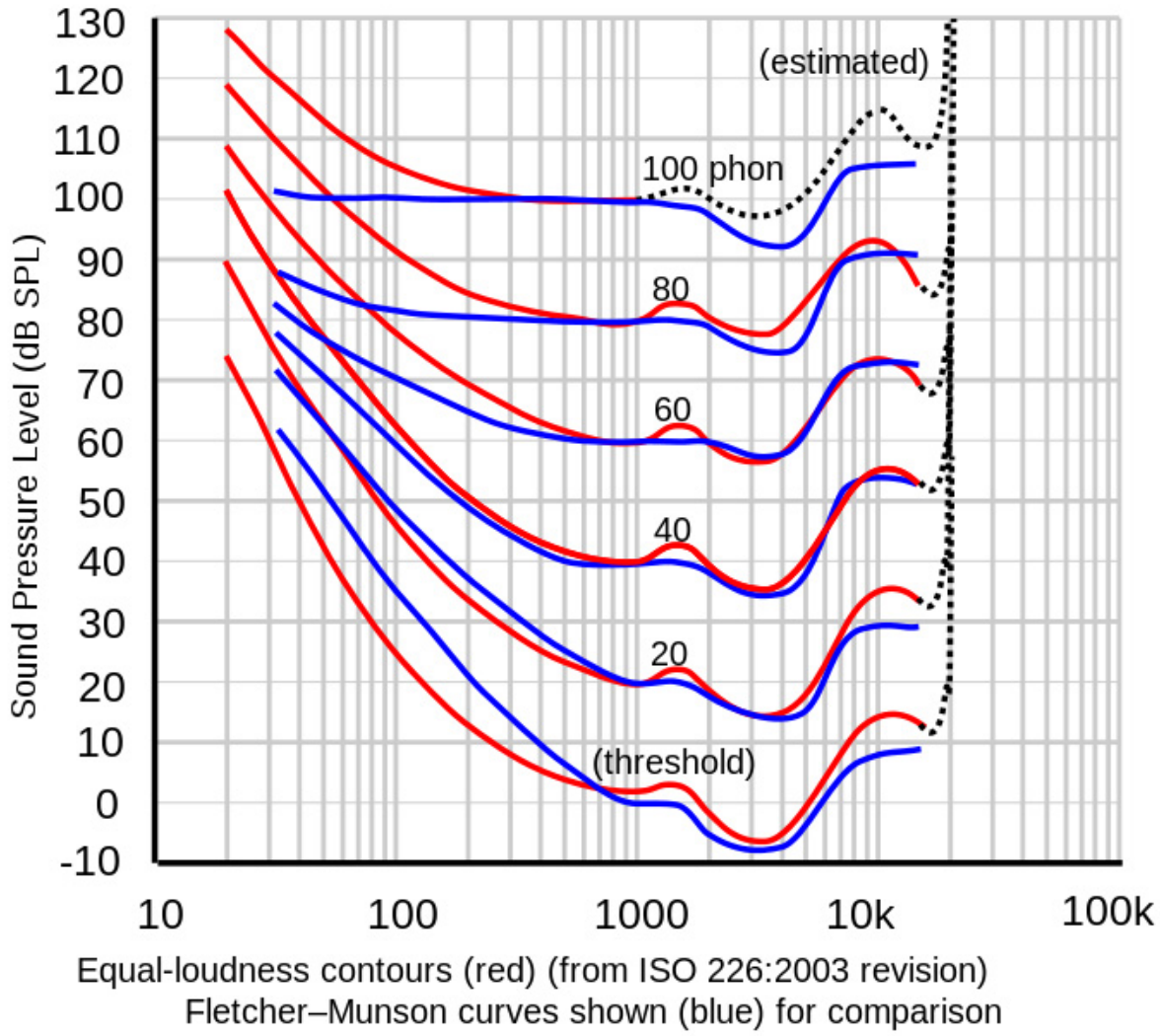

Figure 1. The Fletcher-Munson curves.

Safeguard Your Hearing

Would you hit yourself in the head repeatedly with a hammer? Of course not, that's ridiculous! The sonic analogy would be willingly subjecting your ears to the same kind of assault. Prolonged exposure to sounds in excess of 85 dB can damage your hearing – permanently! And if you can't hear, you can't mix. So, do yourself a favor, and turn it down.

Combat Listening Fatigue

Have you ever been completely satisfied with a mix, only to listen to it later and wonder what you were thinking? Did it sound a bit harsh? Like nails-on-a-chalkboard harsh? That, my friend, is a result of listening fatigue. Your ears reduce their sensitivity during prolonged periods of excessive volume in order to protect themselves. This greatly affects your mix decisions. To combat listening fatigue, take the volume down a few notches. And resist the urge to increase the volume when you perceive a decrease in level. Take a break instead. Your mix will sound louder when your ears are rested. If you mix while your ears are fatigued, you increase the chances of needing to remix your project later.

So, How Loud Should You Mix?

Frequencies sound the flattest at around 85 dB, and that's where many engineers like to work. But keep in mind, that number pertains to larger, professional mix rooms. If you're working in a small bedroom studio on nearfields, 85 dB can seem pretty loud. A lot of us here at Sweetwater calibrate

our studios to as low as 70 dB to accommodate our smaller recording spaces. A good rule of thumb is that your volume level should be low enough to allow for conversation without raising your voice. If you need to shout to be heard, your monitors are too loud.

Calibrate Your Monitors In 10 Easy Steps

Okay, you're onboard. So how do you calibrate your monitors? First of all, you'll need an SPL meter, such as the Galaxy Audio Check Mate CM-130. Or, in a pinch, you can download an SPL meter app for your smartphone. Then follow these simple steps:

1. If you're calibrating with your speakers' volume controls, turn them completely down. If you're calibrating with your audio interface or monitor controller, set your speakers to 0 dB and turn your interface/controller volume knob completely down.
2. Fire up your DAW.
3. Create a mono pink noise file that reads ?20dB RMS at your master bus. If your DAW doesn't come with a noise generator, you can easily find one or download a pink noise file from the Internet by searching for "pink noise generator."
4. Place your SPL meter at the mix position and set its frequency weighting to "C" with a slow response.
5. Make sure that all your DAW's faders are at unity gain (0 dB).
6. Load the noise into your DAW and loop it.
7. Pan the noise to your left speaker.
8. Slowly raise the volume on your speaker/audio interface/monitor controller until you reach somewhere between 70 dB (for a small room) and 85 dB (for a large room). Do not calibrate at a level higher than 85 dB.
9. Mark the position on your volume knob.
10. Repeat the process with your right speaker. When you reach the marked position, your SPL meter should read the same level as the left one. If not, adjust the right speaker's gain so both read the same level.

Summing It Up (Pun Intended)

While it's okay to briefly listen to a mix at a louder level to hear what it sounds like cranked, you need a default volume level to call "home." Renowned mix engineer Chris Lord-Alge agrees, recommending that you mix at a consistent volume that's quiet enough for comfortable extended listening. See Chris's final tip in this article: Chris Lord-Alge's #1 Mix Tip. Once your ears adjust to this baseline, you'll find that your mixes sound great at any volume, are consistent from song to song, and translate better than ever.

Some Final Thoughts

1. Check your levels periodically while you're mixing and adjust as needed. Adding dynamics processing and EQ can increase your mix's volume and mess with your perceptions.
2. Take frequent breaks. Even though monitoring at a safe level will allow you to work longer without experiencing listening fatigue, your ears still require adequate rest to perform their best.
3. Monitoring at low levels is especially important if you're mixing in a not-so-perfect room. When you crank your studio monitors in a room with questionable acoustics, it accents undesirable reflections and resonant frequencies.

At Sweetwater, we want to give you the tools to create the best mixes possible, and these tools go beyond gear — knowledge is just as important (and possibly *more* important). On top of that, we want you to take care of yourself so you can enjoy a lifetime of music making. If you have

questions about mixing or monitoring, give your Sales Engineer a call at (260) 222-4700. They'll be happy to point you in the right direction.