The Mixcoach Guide To Setting Levels And Panning

The Value of Reference Tracks

Before you begin setting initial levels and making panning decisions for a mix it can sometimes be helpful to find a commercially released reference track in the genre you are mixing.

Listening to a reference track can provides great insight into the relative levels between the various parts in a mix, i.e. the level of the vocal relative to the bass, the level of the bass relative to the kick drum, etc.

How to Listen

When listening to a reference track it is good practise to listen at very low levels – just loud enough so you can hear every element in the mix, but quite enough so you can have a conversation in the room and be heard.

The aim when listening to reference tracks in this way is to:

1. Note which elements in the mix are loudest relative to other elements
2. Identify where sounds are panned in the stereo field
3. Identify where sounds are placed from top to bottom, i.e. which parts occupy specific frequency ranges

For example, listen to the vocal. Is it the loudest element in the mix? How loud is the snare drum in comparison? Is the vocal louder than the bass? Is the bass louder than the kick? You get the idea!

Listening to reference tracks in this way is a great way to get an idea of what constitutes a well-balanced mix.

Naturally you are completely free to ignore the information gained from listening in this way. However it can be useful as a way to develop a sense of what a good balance sounds like in the genre of music you are mixing, as well as being a useful guide when charting your way through the often choppy waters of creating a great mix balance.

Setting Levels

Here is a strategy you can use to set levels and begin the process of demagnetizing your mix. As with all cookie cutter mixing strategies use what produces results for you and disregard the rest!

(For more on why demagnetizing your mix is essential to a great mix check out the links at the end of this guide.)
1. **Print your starting mix.** This is always useful to do as a point of comparison with your mix as it progresses. I use a great little plugin called Magic A/B that allows me to load up to 9 reference mixes into my session and A/B each mix at any time with the song I am mixing. (Check the links section below for more info.)

![Image of Magic A/B plugin]

2. **Apply strip silence.** This will help eliminate any unnecessary or unintended noise on tracks, which can eat up valuable headroom.

3. **Check for major level discrepancies in every instrument.** Check every instrument for major discrepancies in level and adjust with clip gain or gain/trim plugin automation if necessary.

This step is important. For instance if you have a vocal that is quiet in the verses but 8dB louder in the chorus, the levels you set during this phase of the mix process will work for one section but not the other, meaning you’ll need to keep reaching for the fader to keep your mix balanced.

Another problem with level discrepancies is that any compression applied to an instrument with major level discrepancies will work for one section but not for the other.

If an instrument has sections in which you would like to retain major level differences between sections you may want to consider splitting the part onto separate tracks.

![Image of vocal waveform showing discrepancies]

The beginning of this vocal is noticeably quieter than the ending and the ending is louder than the middle

![Image of vocal waveform with discrepancies resolved]

This is the same vocal with the discrepancies between sections resolved. This vocal will now feed any compressor a consistent signal. Additional dynamics can always be created later in the mix with fader automation.
4. **Monitor as quietly as humanly possible!** For some great advice on monitoring levels when creating a mix balance check out the always excellent advice from Gregory Scott of Kush Audio. (See the provided link at the end of this guide.)

5. **Find a section where every instrument or most of the instruments are playing**

6. **Pull down all the faders**

7. **Decide which element will be either the focus or starting point of your mix** (i.e. vocal, kick, bass, etc.) and set its level so it peaking somewhere between -12dBFS to -6dBFS. -10dBFS is usually a safe bet. Once this has been done…

8. **Bring in each instrument in turn and set relative levels.** As you bring the fader up on each instrument listen to the level of the instrument relative to the other instruments in the mix.

   In other words if you start your mix with the kick and have set its level in the method described above, set the snare level by listening to the kick and **not** the snare as you bring the snare fader up!

   In practise this means that you will bring the snare fader up until it starts to overshadow the kick and then back off a little. Doing this will ensure you’re kick and snare are well related!!!!

   Once you have done this introduce every other instrument in the mix one at a time in exactly the same way. Set the level for each instrument by listening to what is going on around it in the mix.

   In practise this approach may take a little getting used to but is a great way to balance a mix quickly.

9. **Position each instrument in the stereo field** using panpot knobs so each instrument has its own space in the mix. (This step can also be done as you set fader levels.)

   How far something appears in the left or right monitors is frequency dependent. This means that if you can a bass guitar hard left and a hi-hat hard left, the hi-hat will sound like it is panned further to the left than the bass as high frequency information helps the ear to localize a sound. This is one of the reasons we often perceive thunder as coming from somewhere in the distance and not right in front of us – it has no high frequencies, just plenty of roar!

10. **Check mix balance in mono and adjust levels.** Now that you have set all fader levels and panpot positions for the entire mix, mono the mix, turn the monitors up to a moderate level and make further adjustments. You may find that your kick is now too quiet. If it is…turn it up!

    Audio panned hard left or right often drops in volume when listened to in mono. So be aware of this when listening in mono and adjust accordingly.
11. **Take A Break!**  Seriously! Once you have set the levels for the entire mix take a break. Your ears need a chance to recalibrate. After your break (you did take one didn't you?)…

12. **Listen to your mix from start to finish.** Both at a moderate and quiet monitoring levels and make further adjustments as necessary.

13. **Compare your mix balance against your reference track.** Checking your mix balance against your reference track in both mono and stereo and at both moderate and low levels is also really useful at this stage to ensure you have a good starting balance for your mix.

14. **Compare your mix balance with the start mix** you printed before you began to set levels. Notice how your mix has begun to disappear the ‘imaginary box between the speakers’.

And that’s it! You should have now created a great starting balance for your mix and begun the process of demagnetization too!

### Links To Check Out

Please copy and paste these links into your browser:

- **The Demagnetizing The Mix articles (Parts 1 – 3)**

- **Gregory Scott’s post on setting levels**

- **Sample Magic’s Magic A/B Plugin**