

# 10 ESSENTIAL MIX CHECKS

Learn to stop worrying and love your mixes with our 10-point checklist!

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**T**he hardest thing about mixing is stopping mixing. No matter how many songs you work on, you never lose the fear that comes with pressing Send. Have you missed something obvious? Will the client or the mastering engineer throw up their hands in horror? Does your mix contain some deadly flaw that will make it unlistenable on phones or over the radio?

It's easy to worry too much, and at the same time, you can't anticipate what other people will think of your mix. But if peace of mind is what you're after, there are a few simple checks that can help you pick up on common problems while there's still time to fix them!

## Mono Compatibility

There are still plenty of mono or near-mono playback devices around,

but even if you don't care about how your music sounds on phones or cheap radios, auditioning the mix in mono will give you another window on your mix balance, especially if you A/B your own mix against your references. Most decent monitor controllers and many audio interfaces have a dedicated mono button, and if not, it's easy to use a plug-in in your DAW's master channel. If at all possible, I strongly recommend using a single speaker to do your mono checks.

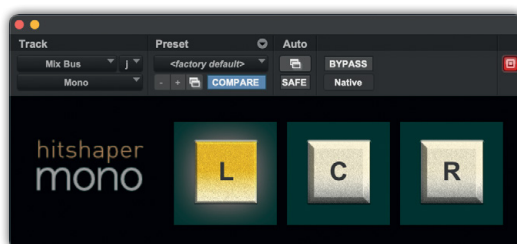
On a related point, it's also worth looking at your mixes through the prism of a phase correlation meter. A consistent negative reading may indicate problems that aren't obvious even on a quick mono check. For example, in a mix I did recently, the same

guitar track was hard panned left and right with different amp simulator settings, but I'd failed to spot that one of them was inverting the polarity of the signal. So much for my lovely wide guitars...

## Small Speaker Listening

Some engineers like to do the bulk of their mixing on small, bandwidth-limited speakers such as NS10s or Auratones. Others prefer to use the best monitors available. Either way, though, it's a confident engineer who allows their mixes to go to mastering without having listened to them on some sort of consumer playback system, whether that's a boombox, a car stereo, or a modern device such as a smart speaker or digital radio. But what are you listening for?

■ If your monitor controller or interface doesn't have a mono button, there are lots of free plug-ins that will do the job for you. I like Mono from Hitshaper because it offers the option of routing the mono signal only to the left or right speaker.







■ Avantone's Mixcube is a popular update on the classic Auratone 5C, and fulfils the same role in the studio, throwing the focus on the midrange.

The point of doing this is to check what's often called translation: that the mix balance doesn't change too much from system to system, and that all the important mix elements can still be heard. So, for example, in most genres you'd probably want the bass instrument and the kick drum still to be audible even on small speakers, but you don't want to achieve this by piling on 50Hz until the speaker can't cope any more and starts to distort! Small speaker listening is also very useful in implementing several of the other checks I'll be describing in this article.

### Vocal Level, Tone & Intelligibility

One reason why some engineers work on small speakers is because they find it easier to get the vocal level right that way. Mono listening can also be a great way to confirm that the vocal is sitting at the Goldilocks point in your mix. Either way, what's vital is to be clear about what you're trying to achieve with the vocal.

In general, it's desirable that the words be intelligible and that the voice sits at a consistent level in the mix. But that can be achieved in many different ways. In a sparse piano ballad, you'll probably want to keep the vocal very forward, the vocal sound full-range and hi-fi, and the effects quite lush. In some rock genres, the aim might be to get the voice to cut through despite it being quite low in level relative to the guitars, and doing so might involve audible distortion and considerable sacrifice in the low-mid department. Note that consistency of

level is relative, not absolute. Simply pinning a compressor doesn't guarantee that the voice won't subjectively be too loud in some parts of the song and too quiet in others. It will depend what else is happening! Check, too, that elements such as breaths, lip smacks and sibilants aren't distractingly loud.

### Tuning & Timing

It shouldn't be the mix engineer's job to make sure things are in time and in tune, but it often is. And because fixing those things is tedious and difficult, it's easy to put it off, or turn a deaf ear to problems that really should have been dealt with further up the production chain. Vocal tuning is the most obvious issue here, but don't ignore the possibility that other aspects of the performance might need touching up. The drums might have been played to a click, but how closely do they actually follow it? Does the guitarist tend to lean forward just a bit too much? Are those doubles as tight as they could be? Is the bassist really in the pocket? Does he or she tend to push the odd note a bit sharp when fretting hard?

Depending on the genre and the artist's preferences, it may be that you should leave well alone. But one thing to be careful of is the possibility that your mixing work has actually created or exaggerated issues that weren't obvious in the rough mix. For example, compression is a time-based process, and applying audible amounts of gain reduction with different time constants to different sources can alter the perception of musical timing — sometimes in ways that you don't intend. And once you start



■ Simply compressing a vocal or other lead instrument hard is no guarantee that it will sit in the mix at a consistent subjective level. Use your ears and, if necessary, fader automation.

applying pitch correction to anything, it's alarmingly easy to go too far. Take a step back and ask yourself whether your work actually enhances the track, or whether it stands out as clumsy and heavy-handed.

### Mix Tonality

By far the most common mix issue I encounter is a lack of balance across the frequency spectrum. This is often caused either by a deficient monitoring environment, by only monitoring on headphones, or by forgetting to reference against known good mixes in the same genre. Most often, the symptoms are too much or too little going on below 100Hz, exaggerated treble, or a deficient upper midrange.

Matching the tonality of a reference by ear is not always easy, especially if the tracks themselves are noticeably dissimilar, so don't be afraid to use metering tools to compare them. Frequency-matching equalisers such as Logic's Match EQ can also be a great way of experimentally putting your mix in the ballpark of another. Be aware that the window of acceptability in terms of tonality is fairly broad, though. If matching the tonality of a reference track would require extreme EQ, and the only good-sounding way to get there would be to re-record the entire song, you might be better off finding more references! Note, too, that if your reference track is in a different key from the song you're mixing, the low end is unlikely to measure »



Many DAWs and third-party plug-ins offer EQ matching features, as well as spectral analysers that will compare your mix against a reference.

- » exactly the same, because the root notes will be at different frequencies.

### Bass & Kick Level

In most rock, pop and electronic music, the low end of the mix is provided by just two parts: a bass drum or kick, and a bass guitar or synth playing a melodic line. These are key elements in any mix, and they need to be at the right level. They also have a strong influence on the tonality of the mix, as described above. A synth bass that is all 50Hz sine waves might simultaneously make the mix too sub-heavy whilst also being inaudible on nearly all playback systems. A bass guitar played aggressively through a distorted amp might cut through the mix perfectly well without actually anchoring it at the bottom as it's meant to do.

Checking the bass and kick level, therefore, means two things. On the one hand, those elements need to sit consistently at the right musical level within the track, regardless of the playback system in use. And on the other, they need to contribute the right amount of sub-100Hz content to the mix as a whole. Generally speaking, this is a lot easier to achieve if the two parts are tonally complementary: for example, your bass drum might provide most of its low-frequency energy in the 50-60 Hz region, whilst the bass guitar mainly occupies the next frequency band up. It's also a lot easier to achieve if there aren't too many other parts using up the limited headroom in this part of the spectrum. Pianos, guitars, voices, snares: there are lots of sources that can have significant low-frequency content, especially

when close-miked, and in many cases it contributes only mud.

### Devils In The Detail

Mixing on headphones alone is fraught with difficulty, but as a mix checking tool, they can be very valuable. That's especially the case when it comes to ironing out those little glitches and gremlins that can creep into any mix. So give your track the once-over on cans and listen out for hiss, bad edits, clicks, plosive pops, messy fades, parts that don't start and end in quite the right place, rogue snare hits that haven't made it past your gate settings, clipping on loud notes, and so on.

### Delivery Requirements

Mixing is primarily about making a track sound as good as possible. But in

many cases it's also necessary to fulfil a technical specification, and before you upload your final version, make sure you know about and meet any such requirements. For example, many broadcasters and production music libraries will lay down fairly detailed stipulations about sample rate, loudness and so on. You may be expected to supply vocal up and instrumental versions of your mix, or worse still, to generate stems. Some clients will even check that your stems sum perfectly to match the stereo mix you've supplied, and if you're using any sort of dynamics processing on the mix bus, this is not trivial to achieve.

### Development Opportunities

Most of the checkpoints I've covered so far are more technical than creative, but as with anything in music, technical perfection is ultimately secondary to artistic value. That doesn't necessarily mean your mix will be better if it's full of glitches, or if no-one can hear the bass drum — but it does mean that a mix can be technically adept whilst also being utterly boring, or missing the point of the song. So I think it's worth asking yourself whether you've really made the most of the materials at your disposal.

For example, one common mix failing is being too safe. It's easy to fall into the trap of thinking that your job is done when every part in the multitrack has its own little niche in the mix, allowing the interested listener to clearly hear each instrument at a respectable level. But



The kick drum is one of the most important elements in nearly all rock, pop and dance mixes. Whether it's acoustic or electronic in origin, it has to deliver the right amount of low-frequency thump, yet usually needs to be audible on small speakers too.



■ Mixing on headphones alone is not recommended, for good reasons, but mix checking on headphones is a very good idea!

and compressing the room mics to snot. Or maybe there's more you could do with spot effects, risers and so forth to create attention-grabbing moments throughout the song. Would it be a better mix if it

is that actually the approach that best serves the song?

Another common issue is that a mix doesn't develop or maintain the listener's interest. Perhaps you've thrown the kitchen sink at the intro in order to grab attention from the get-go, and left yourself with nowhere to build. Perhaps you've been too afraid of making big gestures such as dropping parts out altogether, or muting all the close mics

focused more strongly on a few key parts, rather than presenting everything at once? Does the chorus feel like a let-down after the verse and bridge?

### **Beware Of Over-mixing**

When you're hired to mix someone else's track, there will usually be a demo or rough mix. Very often, the artist or producer will be attached to that mix, and not just because it's familiar. Before

you send yours in, carry out an honest, level-matched comparison. Have you lost some of the excitement? Have you missed the point of the production? Could the things you're hearing as flaws actually be qualities that they like in the rough?

In the DAW age, over-mixing is a constant danger, and it can manifest itself in all sorts of ways. It can mean time wasted pursuing technical excellence at the expense of making the results sound too polite. It can mean over-using effects. It can mean compressing and EQ'ing things that don't need compressing and EQ'ing, including the mix bus. It can mean over-reach on the part of the mixer, for instance by using samples to replace perfectly good drum tracks, or quantising parts that actually had good natural feel. Don't feel that you need to justify your existence as a mix engineer by doing needless or intrusive work for the sake of doing it! If in doubt, open up your DAW's mixer and scan quickly across all the plug-ins you've used. Can you, hand on heart, give a simple and clear explanation of what each of them is doing, and why? ■■■



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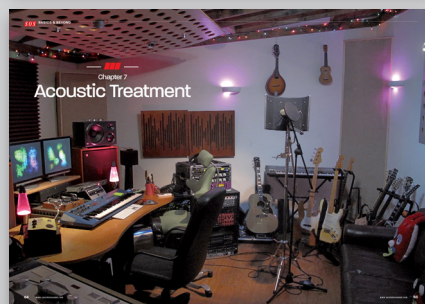
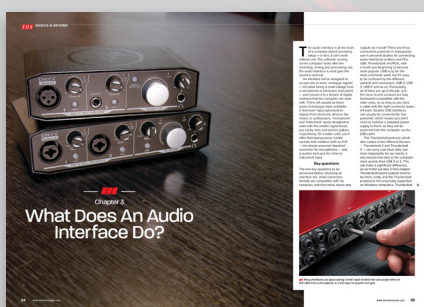
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