20 TIPS ON... MIXING

PAUL WHITE delivers a crash course in instant mixing.

The vocals sound great, the drums are really kicking and the guitars are exceptional, but put it all together and what have you got? A mess! Sound familiar? Until you've gained plenty of experience in mixing music, the process can seem very frustrating. There are probably as many correct ways to tackle a mix as there are successful engineers and producers. Even so, I've taken 20 tips that I've found to be helpful over the years and presented them below in the form of a checklist. These are not immutable rules, just general guidelines that can be broken any time you feel you can get away with it. Have fun!

1. **Put the mixer into neutral (EQ flat, aux sends down, routing to Left/Right only and so on), before you start work and pull down the faders on any channels not in use. Make sure all unused aux sends are set to zero and that unused mixer channels are unrouted as well as muted, as this will further reduce the level of background noise. If you don't do this, you may find effects on tracks that don't need effects, or unwanted tracks creeping into a bounce due to a routing button being left down. You should also have a track sheet for your recording from which you can label the mixer channels. The time-honoured way to do this is to use masking tape and felt pen, so that you can peel the whole lot off when the job is finished.**
2. **Optimise the gain settings not only for the multitrack returns, but also for all effects sends and returns and for your external effect units. Also ensure that your master recorder is being driven as hard as possible, without overloading on signal peaks. These simple measures can significantly improve the clarity of your mix. If your recording is going to be digitally edited, leave any fade-outs until the edit stage, and don't try to chop off the noise that precedes or follows the mix -- you may need this when setting up a digital denoiser that requires a bare noise 'fingerprint' for calibration purposes.**
3. **Subgroup logical sections of your mix, such as the drum kit or the backing vocals, so that you can control the overall level of the subgrouped elements from a single fader or stereo pair of faders. This allows you to control the mix using fewer faders, and fewer fingers! Be aware that any channels subgrouped this way must also have their effects routed to the same groups(s), otherwise the effects level won't change as you adjust the group fader.**
4. **Where level adjustments need to be made, mark the fader settings with a chinagraph wax pencil and, if necessary, take note of the tape counter or timecode locations at which the level changes occur. This way you can solicit help from other musicians in the studio if the mix gets too busy. If you're lucky and are using mix automation, listen to the whole mix through without watching the levels, so that you can concentrate on the balance of the instruments.**

5. **Don't assume that your ears always tell you the truth. Rest them before mixing and constantly refer to commercial recordings played over your monitor system, so that you have some form of reference to aim for. This is particularly important if you use harmonic enhancers, as your ears can grow used to the effects of over-enhancement very quickly.**
6. **Don't overdo the effects, especially reverb, as this can clutter your recording and take away the contrast that is needed to give your mix punch. As a rule, the drier the sound, the more up-front it will sound, while heavily reverbed sounds tend to move into the background. If you need strong reverb on lead vocals, try to add some pre-delay to the reverb effect and adjust both the vocal level and reverb level so that the vocal sits comfortably over the backing.**
7. **Don't pan bass sounds such as kick drums or bass instruments to the sides of the stereo soundstage, as these high energy sounds need to be shared equally between the two stereo speakers for best results. As a rule, very bassy sounds contain little or no directional information anyway, although bass sounds that also contain a lot of harmonics can sound more directional.**
8. **Leave any final EQ and effect adjustments until the full mix is playing. If you work on any single instrument in isolation, it's likely to sound different when everything else is added. If you can avoid using any heavy EQ, the result is more likely to sound more natural.**
9. **Try not to have too many instruments competing for the same part of the audio spectrum. The mid-range is particularly vulnerable, so try to choose the best sounds at source. You can improve the separation when mixing by using EQ to narrow the spectrum of the sound you're working with. Try rolling off some low end and occasionally taking out any excessive top end. This is sometimes known as spectral mixing, where each sound or instrument is given its own space in the audio spectrum. A good example of this is the acoustic guitar which, in a rock mix, can muddle the low mid. If you roll off the low end, you still get plenty of definition, but the mix will seem far cleaner. Sidechain filters on noise gates (set to Key Listen mode) are often very good tools for trimming the high and low ends of sounds without unduly changing the section you want to keep.**
10. **Don't over EQ sounds as they're likely to sound unnatural, especially when boosting. As a rule, good external equalisers will sound better than your console channel EQ when you're trying to make significant tonal changes. If you can confine your EQ to gentle shelving cut or boost rather than using heavy sweep mid, you're less likely to end up with nasal, harsh or phasey sounds.**
11. **If possible, fix problems by using EQ cut rather than boost. The human hearing system is less sensitive to EQ cut than it is to boost. This is especially true if you are using a low-cost equaliser or the EQ in your desk.**
12. **Compress the vocals to make them sit nicely in the mix. Few vocalists can sing at a sufficiently even level to be mixed successfully without compression. Soft-knee compressors tend to be the least obtrusive, but if you want the compression to add warmth and excitement to your sound, try an opto-compressor or a hard-knee model with a higher ratio setting than you'd normally use. Be aware that compression raises the background noise (for every 1dB of gain reduction, the background noise in quiet passages will come up by 1dB), and heavy compression can also exaggerate vocal sibilance.**
13. **From time to time, check your mix balance by listening from outside the studio/bedroom door. This tends to show up level imbalances more clearly than when listening from directly in front of the monitors. Nobody is quite sure why, but it works.**
14. **Don't monitor too loudly. It may make the music seem more exciting (initially), but the end user is unlikely to listen at the same high level. High monitoring levels also tend temporarily to shift your hearing perspective and can lead to permanent hearing damage. It's fine to check the mix loudly for short periods, but most of the time, it's useful to try and mix at the level you think the music will eventually be played. (Forget I**

said this if you're mixing dance music for nightclubs!)

15. Check your mixes on headphones as well as speakers. Headphones show up small distortions and clicks that you may never hear over loudspeakers. However, don't rely solely on headphones for mixing, for they represent the stereo image differently to loudspeakers and are notoriously unpredictable at low frequencies.
16. Don't vary the level of the drums and bass unnecessarily during a mix, as the rhythm section is traditionally the constant backdrop against which other sounds move. Natural dynamics within rhythm instrument parts is OK, but don't keep moving the faders on these sounds.
17. In a busy mix, try 'ducking' mid-range instruments such as overdrive guitars and synth pads under the control of the vocals, so that whenever the vocals are present, the conflicting sounds fall in level by two or three dBs. Just a little ducking can significantly improve the clarity of a mix. Use a fairly fast attack time for the ducker (which may be either a compressor or a noise gate that has ducking facilities), and set the release time by ear. Shorter release times will cause more obvious gain-pumping, but in rock mixes, this can add welcome energy and excitement.
18. If you are recording a primarily MIDI-based track, try not to look at your sequencer display while mixing; the visual stimulus interferes with your ability to make subjective judgements based only on the sound. If necessary, close your eyes. Watching your sequencer progress through the arrange page can also give you a false impression of how well the arrangement is working, which is why some composers prefer hardware sequencers.
19. If a close-miked sound seems unnaturally lifeless, but you don't want to add any obvious reverb, try an ambience or early reflection setting to induce a sense of space. The shorter the reverb time, the easier it is to move the treated sound to the front of your mix.
20. Listen to your finished mix again the day after you've finished it, as your perception is likely to change after resting your ears overnight. Also check the master recording on as many different sound systems as you can, to ensure it sounds fine on all of them. Even then, save all your mix information and track sheets, including effects settings, as you never know when you might want to try to improve on the 'final mix'!