The Mixing Checklist

By Craig Anderton

You “build” a mix over time by making a variety of adjustments. There are (at least!) twelve major steps involved in creating a mix, but what makes mixing so difficult is that these steps interact. Change a track’s equalization (tone quality), and you also change the level because you’re boosting or cutting some element of the sound. Alter a sound’s stereo location, and you may need to shift the ambience or equalization. Think of a mix as an “audio combination lock” — when all the elements hit the right combination, you end up with a good mix. Let’s look at these 12 steps, and remember, though they represent just one person’s way of mixing, having a process like this is the best way to battle option anxiety and to keep from being overwhelmed.

Step 1
Mental Preparation and Organization

Mixing requires concentration and can be extremely tedious, so set up your workspace as efficiently as possible. Many programs and recorders let you save “layouts” of particular window combinations or programmable encoder assignments. When you find a setup that works for you, save it for future mixes. If possible, assign any layouts to a function key so you’re one keypress away from the ideal mixing environment.

This is also a good time to set up any hardware controller (e.g., fader box) you use for mixing. What?!? You don’t have a fader box? Get one — you’ll never go back to mixing solely with a mouse again. See the “Gear Envy Buster” at left.

Step 2
Review the Tracks

Listen at low volume and familiarize yourself with the tracks. Make sure all tracks are named, note which tracks have active plug-ins that may need to be adjusted, mute or archive takes that aren’t being used, etc. Group sounds logically, such as having all the drum sounds on consecutive channels (Figure 1).

Step 3
Put On Headphones and Listen for Glitches

Fixing glitches is a “left brain” activity, unlike the “right brain” creativity involved in doing a mix. Switching between these two modes can hamper creativity, so clean up tracks as much as possible before you get involved in the mix.

Use the Solo button to solo each track and listen to it from beginning to end. With MIDI tracks, check for duplicate notes that “flam” or create chorusing-type effects, and avoid overlapping notes on single-note lines (such as horn parts). With audio tracks, listen for any spurious noises just before or after audio appears (such as mic handling sounds). These low-level glitches may not seem that audible, but multiply them by a couple dozen tracks and they can muddy things up.

Step 4
Render Soft Synths as Audio
If you're sequencing soft synths devices via MIDI, consider converting them to hard disk tracks as this frees up DSP processing power for any effects you want to use during mixdown. Also, these audio tracks make the project more "transportable" because if you do a remix in the future, or someone else mixes the track, it won't be necessary to have the soft synth itself resident within the DAW.

Step 5
Set Up a Relative Level Balance Among the Tracks
With the preparations done, it's time to set levels. It's not time to add any processing yet. Concentrate on the overall effect of hearing the tracks by themselves and work on the overall sound; don't get distracted by detail work. With a good mix, the tracks sound good by themselves — but sound even better when interacting with the other tracks. Set levels with everything panned to the center at first, because if the instruments sound distinct and separate with a mono-like placement, they'll only open up more in stereo. Also, you may not notice parts "fighting" with each other if you start off with a wide stereo field.

Step 6
Adjust Equalization (EQ)
This can help dramatize differences between instruments and create a more balanced overall sound. Work on the most important song elements first (vocals, rhythm section) and once these all "lock" together, deal with the more supportive parts.
The audio spectrum has only so much space, and you need to make sure that each sound occupies its own turf without fighting with other parts. Processing added to one track may affect other tracks; for example, if you boost a piano part's midrange, it may interfere with vocals, guitar, or other midrange instruments. Sometimes boosting a frequency for one instrument implies cutting the same region in another instrument to make room. Try to think of the song as a spectrum. Decide where you want the various parts to sit and rank their prominence (Figure 2).

Step 7
Add Essential Signal Processing
This isn't about "sweetening," but processing that is an integral part of the sound (such as a rhythmic echo, vocoding, etc.). As this sound will presumably be a part of the mix, you want to take it into account when mixing the other instruments.

Step 8
Create a Stereo Soundstage
Now use the pan controls to place your instruments within the stereo field. Your approach might be traditional (i.e., the goal is to re-create the feel of a live performance) or imaginary. Pan mono instruments to a particular location, but avoid panning signals to the extreme left or right; they just don't sound quite as substantial as signals that are a little bit in from the extremes.
Remember that you can automate panning moves in virtually all DAWs and in most hardware recorders. An instrument needn't have a static location throughout a song; for

example, you might want to spread background vocal parts wider in some portions of the song, and narrower in others.
Because bass frequencies are less directional than highs, most engineers place the kick drum and bass toward the center. Also consider timbral balance. If you've panned the hi-hat (which has a lot of high frequencies) to the right, pan a tambourine, shaker, or other high-frequency sound somewhat to the left.

Step 9
Make Final Changes to the Arrangement

Less is more — minimize the number of competing parts to keep the listener focused on the tune, and avoid "clutter." Get rid of anything that doesn't serve the song. Conversely, if you find that a song needs some extra element, this is your final opportunity to add an overdub or two.
You can also use mixing creatively by selectively dropping out and soloing tracks. This type of mixing is the foundation for a lot of dance music, where looped tracks play continuously, and the mixer sculpts the arrangement by muting parts and doing radical level changes.

Step 10
The Audio Architect

Start building the acoustic space in which your song lives by adding reverberation and delay to give the normally flat soundstage some acoustic depth. Generally, you'll want an overall reverb to create a particular type of space (club, concert hall, etc.) but you may also want to use a second reverb to add effects, such as a particular "splash" or gated reverb on a snare drum hit. For your main reverb's starting point, try about 15% wet, decay of around 1.5 – 2 seconds, short early reflections (longer than 25 ms, shorter than 70 ms) at a low enough level to blend with the reverb, moderate room size, high diffusion (around 80%) if there's a lot of percussive material, and lower diffusion (around 40%) if the music is more sustained, like a country vocalist against a fairly simple background.

Step 11
Tweak, Tweak, And Retweak

Now that the mix is on its way, it's time to make your mixing moves. The minute you start tweaking, turn on the automation and "save as" often, under different names. Sometimes your gut instinct about a mix is the right one, and you'll want to return to it. Also remember that all of the above steps interact, so go back and forth between EQ, levels, stereo placement, and effects until you get the sound you want. It's also important to take an occasional break; returning to a mix with a fresh outlook will improve the final results.
I can't emphasize enough that you should mix until you're satisfied. There's nothing worse than hearing one of your tunes six months later and kicking yourself because of some flaw you didn't take the time to correct, or didn't notice because you were in too much of a hurry to complete the mix.
However, the flip side is don't beat a mix to death. Quincy Jones once offered the opinion that recording with synthesizers and sequencing was like "painting a 747 with Q-Tips." A mix is a performance; overdo it, and you may lose the spontaneity that can add excitement. A mix that isn't perfect but conveys passion will always be more fun to listen to than one that's perfect to the point of sterility. Be careful not to waste time making changes that no one, not even you, will care about a couple days later.

Step 12
Check Your Mix Over Different Systems

Before you sign off on a mix, check it over a variety of systems. If the mix sounds good under all these situations, your job is done.

With a home studio, you have the luxury of leaving a mix and coming back to it the next day when you're fresh, and after you've had a chance to listen over several different systems and decide what tweaks you want to make. This is one reason why automation is so wonderful — if everything was perfect about a mix except one little thing that bothers you, you can edit the automation to fix the one problem.

Finally, once you've captured your ultimate mix, run off a couple extra mixes, such as an instrumental-only mix or a mix without the solo instrument. These additional mixes can really come in handy at a later time, if you have a chance to re-use your music for a film or video score, or need to create extended dance mixes. Be prepared!

Now it's time to have your mix mastered .