Mixing Foundations

Nathan Schwartz
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Setting up the Listening Environment

Take time to properly setup your speakers.

Farfield monitors: Larger multi-driver loudspeakers. 3 drivers (one for each range). More accurate at medium to high levels. NOT accurate at low levels. Built into the wall. Good for a dance/club vibe. Cannot be repositioned!

Nearfield monitors: More representative of a regular listening environment. Remove reflections and resonances so they're more accurate. Best at average volumes. Can be repositioned! The best placement is at a triangle with the listener being at one point of the triangle, with 60 degree angles at each corner of the triangle.

Headphones: Crucial tool when mixing. Another listening environment to check out your mix in. A crucial tool in the spacial positioning in the stereo field (better clarity of image). It is an untrue representation of how things will sound coming out of a speaker/monitor. Allow you to get work done when there are other people in the room.

Monitor Listening Level

Use DIM circuitry as a way to compare loud level vs. low levels to make sure everything is easy to understand and enjoy.

Standard: 85dB loud listen back.

Metering

Setup your meters to see Average and Peak.

A. Low end signals, such as bass, kick, etc, tend to comprise the bulk of average level. Placement of these levels will help build the foundation of the overall final mix level.

B. Higher midrange and high frequency signals and fast transient signals such as snare, hats, etc, comprise the peak levels.

C. When measured in VU, an initial placement of kick and bass so that the meters hit about -2dBu tend to give an overall final mix level of about +3dBu in general.

D. In the digital arena, a beginning kick/bass level of around -6dBu will tend to give a final mix level of close to 0dBu, from experience.

Metering setup for Mixdown

We perceive loudness in terms of Average loudness. Average metering tends to be more realistic in terms of what we're hearing. We perceive loudness as how it behaves over time.

Peak meters show where the problems are. Average meters show overall loudness.

Both meters can be detrimental to a mix if you ignore what your ears are telling you. If your meter is telling you OVERLOAD but your ears disagree, go with your ears.

Different ways to approach a mixdown

Additive mixing: Built from an empty canvas. Faders start at nothing. It's pretty quick, but it forces you to make decisions about instruments without a reference to the rest of the song, these might have been bad decisions which are hard or impossible to fix later on. Amateur engineers and Live Sound engineers use this technique.

Subtractive mixing: More like a sculpture. Begin with a basic mix and add processing or EQ (etc) as needed and adjusts levels accordingly. More advanced, you can see where the issues are earlier on and can take care of them with an idea of the big picture. This process is more organic, the instruments are viewed in their "original context". Takes more time (especially for less experienced engineers). Has a domino effect, meaning that doing one thing leads to another, then another, etc etc.

Mono mixing: All levels panned straight up the middle. As additional signals are introduced to the mix, processing is used to alleviate signal masking. After most or all signals have been addressed, panning is utilized and fader levels are adjusted accordingly. EXTREMELY helpful for dealing with Phase issues. It has a clear utility regarding equalization/dynamics processing as a way to minimize masking. HUGE stereo image and crystal clear instrument qualities. It is challenging to accomplish and can take considerably longer to get from start to finish. Pan after the mix is as clear as possible. DRY MIX ONLY, NO EFFECTS.

Anytime you change the EQ you are effecting the Phase of the instrument.

Combined Additive/Subtractive mixing:

Begin with a basic mix. You then build instrument groups as needed. Utilizing solos to focus on individual instruments then going back to the overall mix to have a reference of the big picture. Best of both worlds.

Take a short amount of time to build your mix only using faders and pans. Do not focus on the meters yet. The goal is to listen to what you have and where you want to go. This is a quick step, 5-10 minutes. Save a recall or a session, take notes on what you liked.

ZERO EVERYTHING OUT.

In the next step do another rough mix (5-10 minutes) and incorporate things you might not normally do, IE: panning bass, lead vocal to the left, backing vocals louder than regular vocal. Listen to what sounds good from doing a pass that doesn't follow all the conventions of mixing and take notes as to what sounds good, what sounds surprising. This step allows you to better understand the song and its possibilities, makes the song seem fresh and shows you a new side of the song. Do this step three or four additional times if need be, just to hear different versions of the same song doing different things every time.

ZERO EVERYTHING OUT.

Now, do a proper mix starting with the kick and the bass, kick level around -2dBu VU or -6dBU Peak). Next the snare or the hat. Once placed the mix level should be hovering around 0 to +2dBu VU (-3dBu Peak). Now place a few central instruments, such as rhythm tracks, horns, etc. This should give you a basic picture of the song.

Begin applying dynamics and EQ processing where needed. A good place to begin is the kick or rhythm tracks. Take time to make sure your overall levels are in a good range. Start to add in the ignored instruments such as toms, overheads, cymbal mics, rooms, etc. As you clarify this mix, you are getting a better idea of how these instruments should sit in relationship to one another.

If necessary, patch outboard gear, create groups, etc. With groups, do not assign the subgroup master to the same group as the components, if you do this; unwanted level changes may arise during mix automation.

Now consider automation options. Make notes as to what instruments need automation, set your level where it needs to be the majority of the time before automation.

Begin considering effects, place effects on target instruments.

Up to this point, the process should have taken 3-4 hours.

Print the mix to a CD, take a break at this point. Let your ears refresh. Listen to the 'static mix', determine if now would be a good time to start automation. Take notes about what other issues need to be addressed.

Fix mixing issues.

Start automation. Do an absolute pass, beginning to end all of the automation moves that you can make in one pass. The move on to cleaning up the intro, do all of your mutes for cleanest signal. Do another pass (and another and another if need be), making the automation as perfect and pristine as possible. Once happy with the mix, burn the Automated Mix to a CD, go and listen to the mix on a few different sources.

Listen to mix, take notes, make changes, etc etc, until you are happy with your final mix.

When you are mixing through multiple days, try your best to not listen to the mix you burned at the end of the day on the way home. It'll burn you out and piss you off. Wait until the next morning.