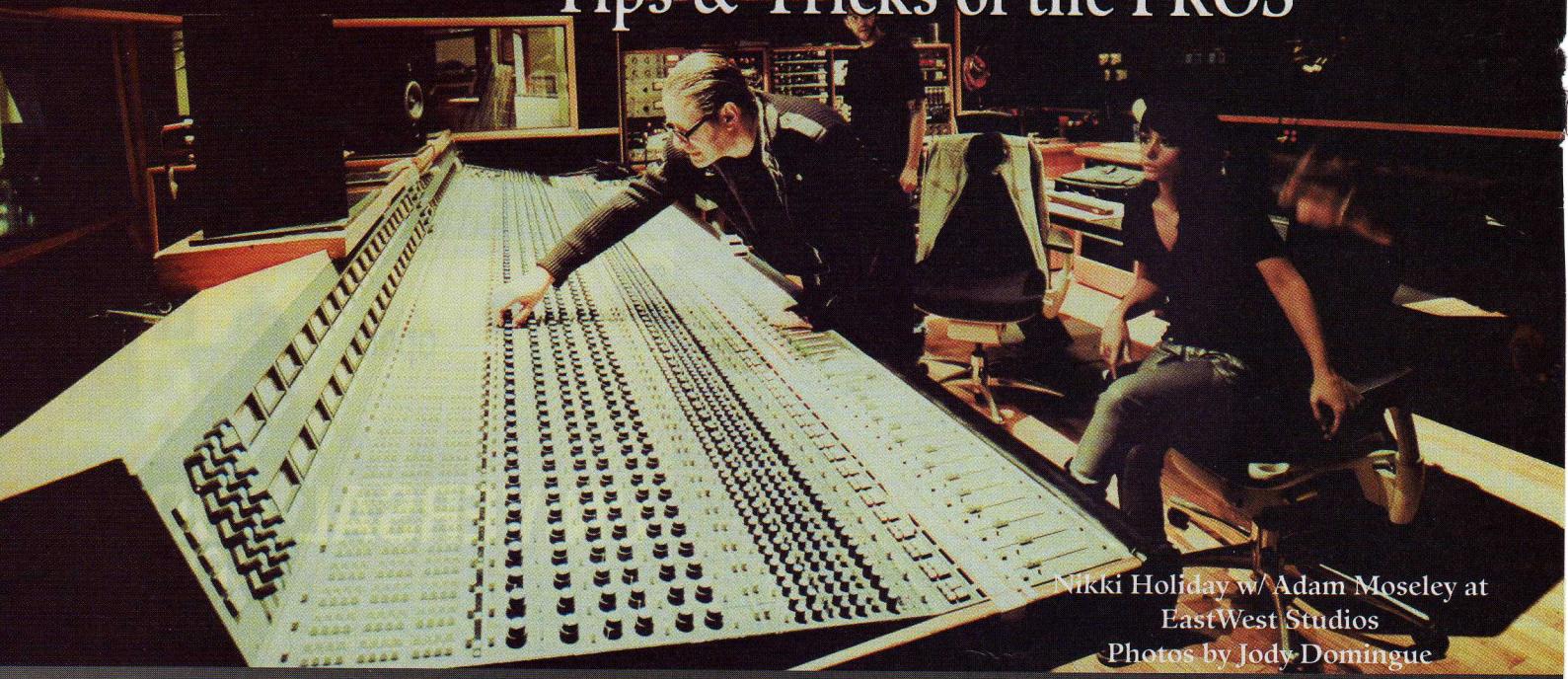


Reverb and Delay: Tips & Tricks of the PROS



Nikki Holiday w/ Adam Moseley at
EastWest Studios
Photos by Jody Domingue

By Bobby Owsinski

When it comes to mixing, one of the things that separates the pros from the wannabes is their use of effects. While it's true that not every song needs a lot of effects, you'd be surprised just how many are on a modern mix, even though it might sound like not very many are used at all. That's the trick. Many times you want something to sound larger than life, but you don't want it to sound like it's swimming in artificial sonic goo, and that's where the effects tips and tricks of the pros come in.

I've culled a number of the most important effects techniques from my two books on mixing (*The Mixing Engineer's Handbook* and *The Audio Mixing Bootcamp*) into a short article that will hopefully raise the quality of your mixes immediately. By the way, these are the tricks that I've been collecting through the years from some of the biggest hit-makers in the business whose works you hear on the radio, Spotify and Pandora every day. Since we simply can't cover everything in an article like this, we'll look specifically at reverb and delay.

6 PRINCIPLES FOR ADDING EFFECTS

Before we use any effects, it helps to know when and why they work. There are six principles that offer a general guideline on how effects can be used.

Principle 1: Picture the performer in an acoustic space, then recreate that space around them. This method usually saves time, as it is a lot faster than simply experimenting with different effects presets until something excites you (although that method can work too). Also, the artificially created acoustic space doesn't need to be a natural one. In fact, as long as it fits the music, the more creative the better.

Principle 2: Smaller reverbs or short delays make things sound bigger. Reverbs with decays under a second (and usually much shorter than that) and delays under 100 milliseconds (again usually a lot shorter than that) tend to make the track sound bigger rather than push it back in the mix, especially if the reverb or delay is in stereo.

Many times a reverb will be used with the decay parameter turned down as far as it will go (which may be as low as .1 second), but this setting is sometimes the most difficult for a digital reverb or plugin to reproduce, resulting

“Most mixers set the delay time to the tempo of the track.”

in a metallic sound. If this occurs, sometimes lengthening the decay time a little or trying a different preset will result in a smoother, less tinny sound, or, try another plugin or hardware unit that performs better under these conditions.

Principle 3: Long delays, and long reverb predelay and reverb decay settings push a sound further away if the level of the effect is loud enough. Delays and predelays longer than 100 milliseconds are distinctly heard and begin to push the sound away from the listener. The trick between something sounding big or just distant is the level of the effect. When the decay or delay is short and the level is loud, the track sounds big. When the decay or delay is long and loud, the track just sounds far away.

Principle 4: If delays are timed to the tempo of the track, they add depth without being noticeable. Most mixers set the delay time to the tempo of the track. This makes the delay pulse with the music and adds a reverb type of environment to the sound. It also makes the delay seem to disappear as a discrete repeat, but still adds a smoothing quality to the mix element.



Timing the Delays

Three of the many ways to time the delay to the track:

1. Sync the delay in your DAW. Almost every delay plugin provides a way for you to sync it to the tempo of the track and it's as easy as a simple selection.
2. Tap the tempo in. Most plugins allow for tapping in the tempo via the space bar on your keyboard. Although it can usually get a rough idea of the tempo by about the third tap, give it eight or 10 to average out and give you a more accurate reading.
3. If you want to easily find the right delay time to the track and you have an iPhone, grab my "Delay Genie" app from the iTunes App Store. It's free and will make timing your effects to the track easy.

Principle 5: If delays are not timed to the tempo of the track, they stick out. Sometimes you want to distinctly hear a delay and the best way to do that is to make sure that the delay is *not* exactly timed to the track. Start by first putting the delay in time, then slowly alter the timing until the desired effect is achieved.

Principle 6: Reverbs sound smoother when timed to the tempo of the track. Reverbs are timed to the track by triggering them off of a snare hit and adjusting the decay parameter so that the decay just dies before another snare hit (or two in some cases). The idea is to make the decay "breathe" with the track. One way to achieve this is by making everything as big as possible at the shortest setting first, then gradually make the settings longer until it's in time with the track.

* Of course, the biggest part of adding effects to a mix is experience, but keeping these principles in mind will provide a perfect place to start.

DELAY TIPS AND TRICKS

Here are a number of techniques often used for particular mix elements. Don't limit yourself to the examples cited though, as they can easily work for other instruments, vocals or program sources as well.

Delay Tips For Vocals

A stereo delay with a 1/4 or 1/8th note delay on one side and a 1/4 or 1/8th note triplet or dotted note on the other provides movement along with depth and is a favorite trick of EDM mixers.

To simulate a vocal double, dial in a 1/16th note delay, then modulate it so it slowly raises and lowers in pitch. If the modulation can be set so it's random, it will sound more realistic.

For a quick vocal effect to give it some space and depth during tracking or overdubs, set up a mono 220 millisecond delay with a couple of repeats.

For getting a dry vocal to jump out, use two bandwidth-limited (at about 400Hz to 2.5kHz) delays in the neighborhood of 12 ms to the left and 14 ms to the right each panned slightly off center. Bring up the delays until you can hear them in the mix, then back it off to where you can't. Occasionally mute the returns to make sure it's still bringing the vocals out and they sit well into the mix. You can also time the delays to a 1/64th note on one side and a 1/128th note on the other.

Delay Tips For Guitars

During the 1980s, when guitars were often recorded direct, many L.A. session guitarists used a short stereo delay of 25 milliseconds on one side and 50 milliseconds on the other to provide some space around the sound.

To make the guitar sound larger than life, set a delay at less than 100 milliseconds (timed if you can) and pan the guitar to one side and the delay to the other.



Alexisonfire

PHOTO BY BRITTNEY DILLON

Use a mono delay on the guitar set to about 12 milliseconds (or whatever the tempo dictates) and hard pan both the guitar and delay. This makes the guitar sound much bigger and almost like two people playing perfectly in sync, yet still keeps a nice hole open in the middle for the vocals.

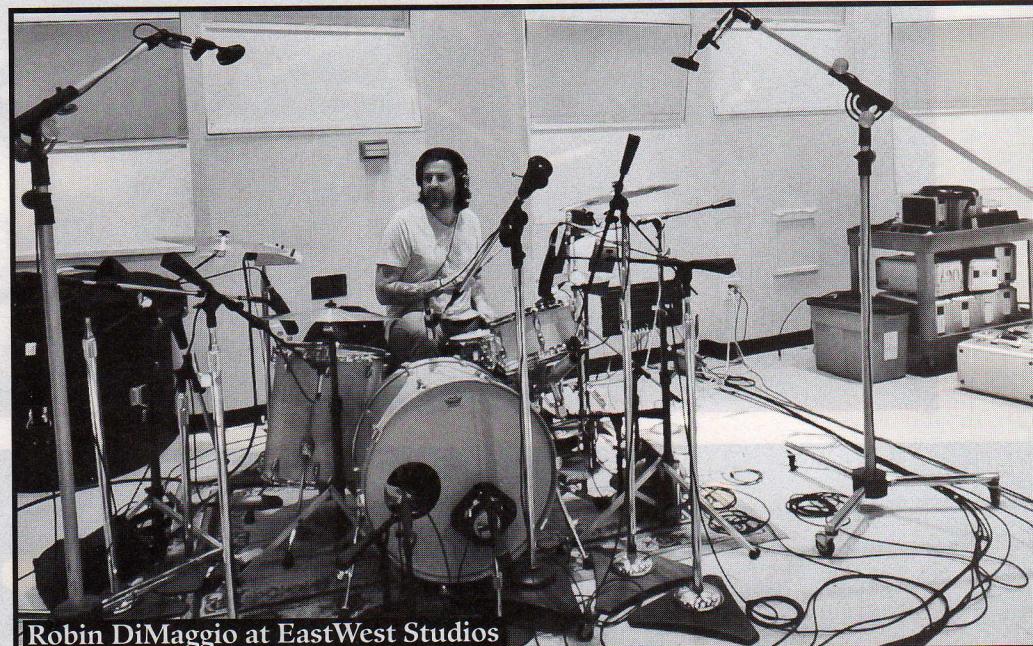
Pan the guitar track and the delay to the center (or put your monitors in mono), then slowly increase the delay time until it sounds bigger. Increase it a little more for good measure. You'll probably find the result is in the area of 25 to 30 milliseconds.

REVERB TIPS AND TRICKS

For many musicians who don't have a lot of experience mixing, adding reverb to a track can sometimes be a chore trying to come up with something that seems to fit without it either sticking out or disappearing. Here are some things to think about the next time you reach for that reverb plugin. Don't limit yourself to just these examples, as the settings can just as easily work for other instruments in certain situations.

Reverb Tips For Vocals

Automate the delay or reverb return so that in the sparse parts of the arrangement, particularly



Robin DiMaggio at EastWest Studios

in the beginning of the song, the vocal is less wet and more upfront and intimate, which also makes the effect less obvious.

Try mixing various reverbs. Set up three reverbs; short, medium and long (the specifics of what the actual lengths are varies with the song). On a non-ballad vocal, favor the short and medium over the long. The short (try a .3 to .6 second Room or Plate) one will thicken the sound. Blending in the medium (.1.2 to 1.6 second Plate or Hall) will create a smooth transition that is quite dense but still decays fairly fast. Add a little of the longer one (2 to 3 second Hall) for whatever degree of additional decay you want. The three combined will sound like one thick reverb that will stick to the vocal and not muddy it up with excess length and diffusion.

With a singer-acoustic guitar player, try to picture the performer in an acoustic space and then realistically recreate that space around them. This lends itself to a medium sized room or a small plate, with perhaps a little more reverb on the voice than the guitar. If the vocal is wet and the guitar dry (forgetting about leakage for a moment), it's difficult to have them both appear to share a common acoustic space.

If a vocal effect is too prominent, bring up the reverb to where you can hear it, then back off the level 2 dB. Add a dB or two at 800 to 1kHz to either the send or return of the reverb to bring out the effect without it being too in your face.

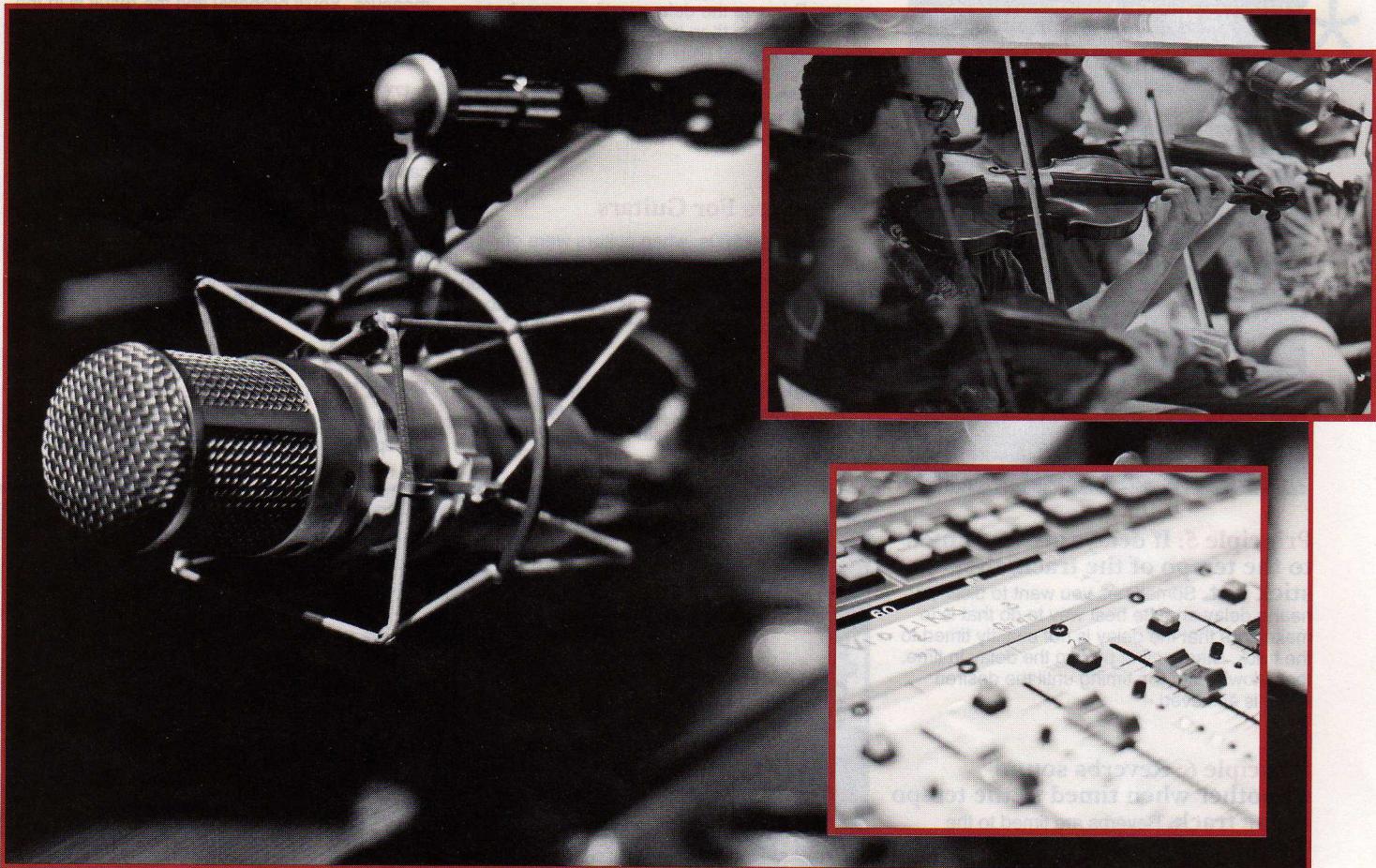
For an interesting reverse reverb effect on a vocal where it's whooshing in before the vocal begins, set a reverb to a very long decay time (over 4 seconds) then record the reverb only onto a second track. Reverse it and move it forward on the timeline so it begins before the vocal.

Reverb Tips For Drums

For the Tommy Lee "Thunder Drums" effect, set a reverb on the "cathedral" or "large hall" setting and then add a little to each drum. Pan the reverb returns so the reverb sits behind each part of the kit. For this effect to work, the bass drum has to sound tight to begin with and have a decent amount of beater present, and all the drums should be gated with the release timed to the track.

For an "exploding snare" type of effect, add a short slap from 50 - 125 ms with a touch of feedback to the bottom snare mic. Bring

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Nikki Holiday

the slap back on a second channel. Using an aux, send signal from both top and bottom snare mikes and the slap to a short reverb of a second or less (timed to the song). By adjusting the proportions, phase and EQ, the effect will fit it into almost any situation.

Reverb Tips For Percussion

For hand percussion like shakers and tambourines, use a medium (.8 to 1.2 seconds) room or plate reverb with either zero or very short (20ms) predelay.

Reverb Tips For Guitars

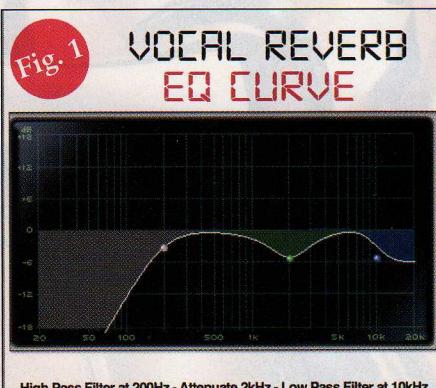
To make guitars bigger, take a mono reverb and lower the decay time to as low as it will go (.1 seconds if it will go that low). Pan the guitar to one side and the reverb to the other. Try different reverb types to see which works best in the song. Increase the decay time slightly

to make the sound bigger or to eliminate any metallic sounding artifacts from the reverb.

For that early Eddie Van Halen sound, use either a chamber or plate reverb set to about 2 seconds decay time and around 120 ms predelay that's timed to the track. Pan the guitar to one side and the reverb to the other.

Reverb Tips For Keyboards

For a keyboard pad sound that melts into the track, use a hall reverb with a 2 to 2.5 second decay and a short (20 ms) predelay that's timed



High Pass Filter at 200Hz - Attenuate 2kHz - Low Pass Filter at 10kHz



High Pass Filter at 600Hz - Low Pass Filter at 10kHz



High Pass Filter at 600Hz - Low Pass Filter at 6kHz



to the track. Set any EQ or filters so that the extreme high and low ends are rolled off to about 8kHz and 150Hz.

Reverb Tips For Strings

Use a hall reverb set to between 2.2 to 2.6 seconds with a predelay of at least 20 ms timed to the track.

- * To make an effect stick out, brighten it up.
- * To make an effect blend in, darken it up (filter out the highs).
- * If the part is busy (as with drums), roll off the low end to keep it out of the way.
- * If the part is open, add low end to the effect to fill in the space.
- * If the source part is mono and panned hard to one side, make one side of the stereo effect brighter and the other darker and pan the brighter side opposite the source track.

That's a lot of things to try the next time you're mixing, but you'll find that at least some of the above will improve your mix by a mile. If you want more tips and tricks, check out the books and video courses cited below.

miniBio: Bobby Owsinski is the author of 16 books on recording, music and the music business as well as several video courses for Lynda.com, including *Audio Recording Techniques* and the *Audio Mixing Bootcamp*. Get additional info from his website at <http://bobbyowsinski.com>.

