

Mixing & Mastering Review

Panning, Volume, Effects



I am not a recording engineer, nor do I claim to be an expert on audio recording, mixing and mastering. My experiences and observations here are just that – my experiences and observations. Other PG Music software users may disagree with my suggestions. All of us who record, mix and master have our own special way to get the sound we want, or at least close to it. We don't all employ the same methods.

For example, I never mix any midi tracks – I always convert my midi tracks to audio tracks. That's just my preference. You can do as you wish. And, by the way, I welcome your feedback on anything you read in this document. I welcome new ideas, tried and tested methods, other input from PG Users. I am NOT the supreme know-it-all on this subject. I welcome hearing other points of view.

Some time back I published a file on how I record, mix and master in PowerTracks. And then a few months ago I produced some video tutorials on mixing and mastering with PowerTracks Pro. Most recently I produced a document on mixing and mastering with RealBand. Since that time, I have received numerous emails and MP3 files from users asking me to evaluate their productions based on what they had learned from the tutorials. Several users who viewed the tutorials have posted their songs on the PG MUSIC forums for others to critique.

I've made a few observations on some of these recordings and I wish now to share my comments and even some suggestions on what I liked and what I didn't, and what I would do to change what I didn't like. I will not mention any specific user names, of course. I'll also include some other tips that have worked for me. You may not choose to employ my methods, and that is okay. I'm not attempting to get everyone to do it my way. Such action would be foolish to say the least.

When I listen to various users' recordings, the first thing I listen for is how well the PANNING works. Quite often I have listened to recordings where all the instruments were banked dead center, or too many instruments or vocals swayed strongly to the left or right. Panning is one of those issues that must be addressed early in the mixing process. Volume levels would be my first priority, and as I am adjusting those volume levels on the various instrument or vocal tracks, I would also be trying out various PANNING actions on those tracks. PANNING is not an instant, do it once exercise. Listening to the recording over and over again, one hears ideas and sounds that need to be addressed with volume and panning techniques.

Perhaps some users are unfamiliar with panning and are not sure how to do it... and even why it must be done and why it's so important. When you think of PANNING, consider where your various instruments and vocalists are standing on an auditorium STAGE. Does everyone stand in the dead center of the stage? Of course not. At least I would not want to hear a group perform like that. Watch some YOUTUBE videos of concerts, performances and such. Notice how they place the various vocalists and instrument players on the stage.

Typically, you generally find that the drums are dead center towards the back of the stage – behind the other performers. Your bass player might be a little to the right or left of the drums, or you might discover that his amp is dead center in the front of the drums. Or, it could be over to the edge of the stage, but the signal is being fed into a master mixer. Whoever sits at that mixing console has to decide how to PAN that bass player – where to position him on the physical stage as far as his/her SOUND is concerned. The piano quite often will be seen in a band to the obvious left or right of the stage. Then consider the other instruments. Consider the solo instruments that take a lead during a portion of the song or chorus. Where will they be positioned? Think about where the vocalists and backup singers are placed on the stage.

That environment has to be given serious consideration when we are mixing tracks of our songs. We use PANNING to place these various instruments and vocalists on a STEREO SOUND STAGE (not unlike the auditorium concert stage) so that a good sound will be heard when the recording is played back. In PowerTracks and RealBand, the panning sliders are quite similar. Pan an instrument dead center would be a ZERO 0 for that particular track. And then where do you place all the other instruments and vocalists? Create in your mind a "vision" of where you want each and every musician/singer placed on

your STEREO SOUND STAGE. And then invoke that with the PANNING sliders on each and every track of your recording. Keep in mind that depending on how far to the left or right of center stage we place a musician or singer, we may need to adjust the volume for that track.

Let me give you a typical example of the STEREO SOUND STAGE with panning as I might have used it in one of my recordings. DRUMS are always placed dead center with the PANNING slider. Absolute ZERO position. Next I may have a piano that will NOT be the featured instrument and I most likely will place that on the far right. How far can you pan an instrument/musician? I spread out my instruments across the STEREO SOUND STAGE in my head, and for the most part the farthest I have placed any instrument is around +35 (to the right) or -35 (to the left) with the panning slider. The bass is generally preferred to be placed dead center at ZERO just like the drums; however, most of the time I place the bass about -5 (to the left) of DEAD CENTER. You may choose otherwise.

If a piano sound is bass heavy, I will always place it on the opposite of the stage where I have placed the bass guitar. I don't need to be mixing mud with the bassy piano sound and the actual bass guitar. Okay, next, I have a lead guitar player. I may choose to place him on the left side of the stage at about -20 or -25 with the panning slider. I also have a rhythm guitar player, and I may choose to place him on the right side of the stage at around +20 or +25. I may plan to use an organ player and I will place him on the left side of the sound stage at around -15 or -10, as I would not want personally to have the piano and organ on the same side of the panning. Now, all of these are purely subjective – much to do with what sounds best to my ears.

Now, I can also use REVERB to push instruments back further on the sound stage. I always use REVERB on my drummer. And for an organ, I would probably raise the reverb level on that. If I'm using a pedal steel player, I would most likely push up the reverb on that instrument. This is all done to push these instruments back a bit. Pedal steels and organs can be overpowering to a mix.

You've heard the expression over and over again: TRUST YOUR EARS! I know you're sick of hearing it. But that's what you have to do! So, just do it. As you change the panning of various instruments, don't forget to also consider the volume of that instrument. It may need to be raised or lowered. Keep your ears open for that!

Speaking of the EARS, let's talk about headphones. When you're critically listening to your mix, do you have your headphones on? If so, take them off. Use your speakers or monitors or stereo system or whatever you're running your sound out to for listening. Choose the placement of those speakers carefully, and position yourself carefully. You want to be able to hear the SEPARATION of the various instruments and vocalists when you play back that song. Headphones are fine for general listening and a quick listen, and they're strongly advised if it's 2:00 AM and the rest of the household and neighborhood is asleep. Be considerate. But don't make final decisions from what you hear in those headphones. You will not be happy with the mix. You must hear it and hear it well. So use whatever speakers, monitors you have and trust YOUR EARS to that sound source, not the headphones for serious mixing!

Speaking of vocalists, where do you place them. Well, let's analyze them first. Are they the lead singer? If so, you'll most likely want to place or PAN them at the CENTER of the panning slider. Backup vocals can be set at zero also, but add some reverb to push them back a bit from the lead singer. Better yet, pan the backup singers to +5 or -5, possibly even as far as +10 or -10. Trust your ears. Sorry to repeat that statement again - my apologies.

Be a tester! Play with your mixes a bit! Move instruments around. Swap them from side to side. Further away from zero, closer to zero. Try all positions out. Listen to your changes through the speakers or monitors. You may find you like something totally different than what I would use. It's your song, you be the judge. But for goodness sake, please use PANNING. Experiment with it; play with it. Try out various possibilities. Mixing is work. And if you mix a song within seconds, don't expect to like what you hear (generally). The more you experiment with panning, however, the better you will become at doing it. Final word here: PAN THOSE INSTRUMENTS and VOCALISTS!!! Season that panning with changing volume controls also. Listen, listen, listen to your mixes!!! By the time you are ready to master your mix, you will most likely be sick of the song or sick of mixing --- maybe even both!

Can you add effects plugins to selected audio tracks, of your mix? Of course you can! Remember that you can use the AUX bus to plug in an effect and that effect can then be shared or not shared by all the tracks in your mix. Or, you could apply various types of effects to each individual instrument or vocal track to get the sound you want. These are decisions you have to make.

Sometimes I use effects plugins on individual tracks, sometimes I don't feel the need to.

Okay, let's review some mastering methods. Everyone does it a little differently. Everyone uses plugins in the OUTPUT INSERTS a little differently than the next user would do. I'm no exception. I will tell you, however, that when I'm ready to master my recordings, I do this: I have already taken my mix with all the tracks and effects, if any, and I have merged all those audio tracks out to a stereo wav file. When I master, I like using ONE file (consisting of one track) for the mastering.... and not a console full of various tracks. It's just my preference.

When I bring that STEREO WAV file into PowerTracks or RealBand for that matter, I then have ONE TRACK (preferably stereo) to work with. I push the volume slider for that track to the top. Next, I listen to the mix now that it is in ONE FILE - ONE TRACK. If everything sounds well, particularly the effects from the mix, the panning, the volumes of each track, then I know I have a good single file mix to work with at mastering.

My next step is to go to the OUTPUT INSERTS and use whatever effects/plugins I am going to select. This varies from recording to recording, but most of the time this is where I begin: I like using the CLASSIC products of effects. These VST plugins are free and available on the internet. Here's the URL where to find them, in case you're interested.

<http://www.kjaerhusaudio.com/classic-compressor.php>

Now when I am mastering, I do not use any REVERB. I've already soaked in all the reverb I've needed into the MIX. I don't need it now. You may still choose to use it. It's up to you.

There are four primary SLOTS for inserting effects in RealBand or PowerTracks Pro. Here's how my panel would look:

SLOT 1 - CLASSIC COMPRESSOR
SLOT 2 - CLASSIC EQ
SLOT 3 - CLASSIC LIMITER
SLOT 4 - PG PEAK LIMIT

Now, some users prefer to EQ before compression; I choose to compress before adding EQ. Try it both ways, you might notice a difference in the sound, and then you'd need to choose which you prefer. It could even vary from recording to recording as to which you prefer.

I've been told that using the CLASSIC LIMITER is overkill – that if I'm going to use PG PEAK LIMIT, which I ALWAYS USE in the 4th slot, I don't need the classic limiter. Most of the time I use it, but not always. I like a HOT MASTER! I don't want my listeners to have to reach for the remote control and turn up the volume on their CD players or car stereos to hear my CDs.

With these plugins come some PRESETS. Here's the ones I use:

CLASSIC COMPRESSOR – PRESET: MIX DOWN

CLASSIC EQ – PRESET: Punchy Mix

CLASSIC LIMITER – PRESET: (default)

PG PEAKLIMIT – PRESET: (default)

Making these selections should prove to you that I'm no recording engineer. There are manual controls on these plugins and I should learn to use the various controls, manually. But I haven't yet, so I use the presets (shame on me). But, hey, they work well for me!!

When you use the CLASSIC MASTER LIMITER, adjust the knob on that preset so that only the top and bottom red lights LIGHT UP on the far right end (0 dB). If more than the top and bottom lights light up on the far right, you are really pushing the limiting on this recording... back off a bit. And of course you'll discover that turning the knob to the LEFT will increase the lights that light up, and turning it to the RIGHT will reduce the number of lights that light up. Watch this carefully!

While the song is playing I am constantly watching the CLASSIC LIMITER, as well as the PG PEAK LIMIT. I flip the output insert dialog box back and forth. Do NOT let your recording CLIP! It most likely WON'T happen with the PG PEAK LIMIT in place. Just watch it though before you save this mastered file.

If your song is sounding like you want it now, it's time to merge it out again to a stereo wav file. Those output inserts above that we have chosen to use will

be “merged” into that stereo wav file. I then listen to the song on my PC. I also will burn a CD and listen to the song in my stereo CD player, or take it with me in the car and listen to it there. Maybe even visit a friend and see how it sounds on his stereo receiver. I make notes of what still doesn’t sound right, if I find such occurrences, and generally I do.

I then go back to PowerTracks Pro or RealBand and re-open my original mix. I do not use that merged file I created from the mix. It’s no good to me now. I will make any changes to the original SEQ file (the mix with all the tracks). Adjustments here and there based on your notes can only help to improve your final sound.

Once again, then, I do what I feel needs doing in the mix and merge those tracks out to a stereo wav file and then reopen that file to begin the mastering phase again. Quite often I end up doing this four or five times, sometimes more, sometimes fewer times. And yes, you will have to put back in to this mix wav file the output insert plugins again to begin or finish the mastering phase once again. Work! Work! Work! Mixing and mastering is work!

Once I finally get the song sounding like I want it, it’s ready to be written for the last time to a CD or put away safely in an archive somewhere --- on a CD, DVD, hard drive backup, or wherever you keep your “masters.”

Keep at it, but remember this: give yourself a break from time to time. Don’t sit for hours doing the mixing and mastering thing. Take a break. Go swimming, go play golf, take the kids to a movie. You need a break. Tackle the project again tomorrow, or even wait a few days before you re-address the mixing and mastering again. Don’t get burned out! Relax! You’ll get it the way you want it. What’s the hurry? Haste makes waste --- especially in mixing and mastering audio recordings.

You could even load it on your webpage wherever you have storage to do that, and post it on the PG forums. Invite others to listen to it and recommend changes, etc. But remember, the final decision is up to YOU. It’s done when you say it’s done. Take all critiques seriously, but make the sound your own. If you don’t like suggestions that someone makes, don’t use them. Politely, I said POLITELY, ignore their suggestions. Do what you want and get the sound YOU want. After all, it’s your recording!

Remember too, that you can use whichever plugins for effects that YOU LIKE! I’ve simply offered some suggestions here. PG MUSIC offers some fine plugins

and you may find those are all you need. These are personal preference items. I audition plugins frequently. I download them, install them, try them out, and then most of them get deleted. I keep a few here and there and use them.

Keep on mixing and mastering, friends!!

**Ray Thigpen
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Contact me through my webpage: <http://rsthigpen.com>

THANK YOU!!