THE
HOME STUDIO

MASTERING

PRIMER

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NEW ARTIST MODEL

The Home Studio Mastering Primer
Essential Music Mastering Terms, Definitions, and Concepts Explained

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Rather than simply list a bunch of technical terms with quick, incomplete definitions, this *Home Studio Mastering Primer* has been designed to thoroughly and clearly define important concepts specific to Home Studio Mastering -- and the real-life application of those concepts, as well as straighten out any myths, confusions and lies that exist regarding mastering for the Home Studio owner.

Study this Glossary well, and free yourself from confusions and frustrations! If you'd like to go deep and learn the details behind the definitions in your home studio, consider signing up for The Lucrative Home Studio program.

NOTE:

Part 1 lists mastering terms in order of priority importance.

Part 2 lists mixing, mastering and general music production terms in alphabetical order.

Part 1: Mastering

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Mastering

A new workable definition of Mastering has been needed in a big way. A definition that could not only help organize the chaos that has infiltrated the Music Production and Audio Engineering world, but a definition that would allow anyone to apply the knowledge of Mastering directly and immediately to any project or recording task at hand.

The New Definition of Mastering:

In the real world today, there are three different approaches and applications of Mastering, but up to this point, there has been only one definition. A new definition would clearly define each separate approach and application.

Mastering is a set of actions that governs the final outcome of how a recording will sound, with the final goal being a pleasant listening experience for the end-user, listening on any medium. Mastering can be broken down into three separate activities all aiming for that same final goal, a pleasant listening experience. These three activities are TRADITIONAL MASTERING, STEM MASTERING, INDIE MASTERING.

The TRADITIONAL definition of Mastering is: Modifications made to a track to make it sound even better and louder – those modifications being made after the track has been mixed down to a single stereo recording.

Before we get into Stem Mastering and Indie Mastering (both brand new definitions), it's important to note that in the real day-to-day world of what YOU are doing in your home studio on your D.A.W., Mastering actually takes place, BEFORE, DURING & AFTER a mix is done. If you keep this in mind and learn the tips and advice given to you in this course, you'll be submitting tracks that Music Supervisors will accept, instead of getting rejections due to your tracks being "not 'radio-ready.'"

STEM MASTERING

Stem Mastering is actually a combination of both Mixing and Mastering. Stem Mastering consists of the Mastering Engineer receiving stem files (in this case the stem files, rather than being each individual instrument and/or vocal track exported separately, would be grouped stem files; that is – submixes of groups

of instruments and/or submixes of groups of vocals pre-mixed by the mixing engineer) and taking those stem files and first Mixing them, and then Mastering them. Examples of stem file sub-mix groups would be: VOCALS (sometimes broken down into LEAD VOCALS and BACKING VOCALS), GUITARS, KEYBOARDS, BASS, DRUMS, ORCHESTRATION.

Or another example of stem file sub-mix groups would be: VOCALS and INSTRUMENTS. When the Mastering Engineer receives the stem files, he loads them up into his workstation and the first thing he does is Mixes the tracks to his taste. The Mastering Engineer may export a final stereo Mix of these sub-mixes prior to Mastering, or he may Master the stem files separately and export the combination of Mastered stem files as the final master of the song.

The advantage of Stem Mastering for the client as well as the Mastering Engineer is that if the Mastering engineer hears something such as a problem with a vocal performance in the second chorus, let's say – he might cut and paste something from the first chorus and use it instead – or if he hears a problem with the relationship between the guitars and the drums (let's say the guitars were mixed too loud) – with Stem Mastering, he can bring the level of the sub-mix group of guitars down exactly where he feels they should be – rather than trying unusual solutions to bring them down if he only had a single stereo mix-down of the entire song.

Rather than have to give the mix back to the Mixing Engineer and asking him to fix something and then send it back, the Master Engineer has more control over the final product, because, though he cannot mix individual items such as the Kick Drum or one particular Guitar, he can adjust GROUPS of instruments and/or vocals and achieve a product overall closer to his liking. The possible disadvantage is that the artist and/or mixing engineer, if they already attempted a final mix that they

love, might not like what the Mastering Engineer Mixes/ Masters compared to their own mix.

INDEPENDENT MASTERING

Independent Mastering is so named due to the fact that a new form of Mastering has evolved in the Music Industry; Mastering in Project Studios and Home Studios by Independent Musician/Producer/Engineers.

Due to various reasons; such as economic limitations (not being able to afford a pro Mastering Engineer), or perhaps due to personal pride in do-it-yourself workmanship, and perhaps due to the joy of learning and executing a new science and artform, or any other number of reasons, a new discipline has emerged – where Mixing and Mastering are done by the same person on the same equipment.

Rather than trying to say that this is not a workable and successful assembly line for sound recordings (it very much IS) or that it violates the Traditional definition of Mastering, this newer approach -- which grows in members by leaps and bounds every year, this new approach has organically created its own definition of Mastering.

By observing this approach face to face for more than ten years now, and by doing it myself for thousands of hours, I have been able to distill it's essence down to a workable definition:

INDEPENDENT MASTERING - 1. Mastering is a set of actions with the purpose of creating the best possible audio recording possible, starting even before recording begins.

Examples: Before you start recording, you should carefully check the actual inherent noise floor levels of each instrument, mic, plug-in (that's right — plug-ins that you predict you will be using on that recording, if not already tested before in previous projects) or pre-recorded samples you are using for your project. Many times you will find some fascinating MASTERING problems that exist BEFORE RECORDING EVEN BEGINS!

For instance, I was checking the optimum setting for a microphone before I recorded a vocal session the other day. I chose a microphone for an upcoming vocal session. I then test-recorded vocals with that mic (without the singer around, as these tests can take time and you don't want a vocalist wasting their time on your job). By test-record I mean this:

a. I adjusted the input gain knob on the pre-amp slowly while test-recording, noting down where the settings were at any given moment by talking into the mic, stating what exactly I was adjusting at that moment, so I could listen to the effect of any change or adjustment during playback and know what was causing any good or bad effect on the signal being recorded.
b. Recording the mic without any vocals at all – just the "silence" of the room, while making both major and fine adjustments on the pre-amp; while noting down in writing

what was being adjusted and how (including any numbers or readouts of the equipment or meters) at any given bar on the track.

c. I then played back the “silence” and listened very carefully to make sure no background noises that could affect the recording exist (known as the “noise floor,” Note: Keeping your Home Recording Studio environment as quiet as possible is very important in the recording stages. Hence, the reason I suggest applying your budget towards soundproofing more than sound treatment.

Mastering Engineer

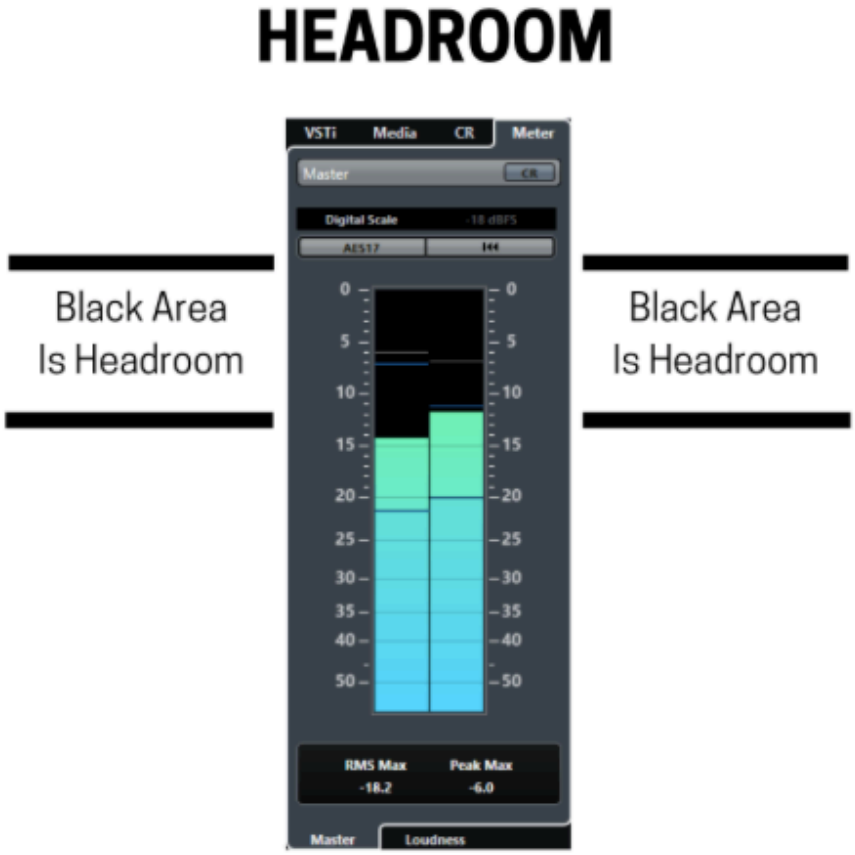
As a Home Studio Owner, you should absolutely do your own mastering. Mythmakers and Brainwashers abound in the field of mastering. I do all my own mastering and have a 100% first time submission acceptance rate for my last 35 tracks.

Here's a big Myth: Mastering is harder than mixing.

Think about it. That makes absolutely no sense. A ridiculous statement that "everybody knows." Once you learn what Mastering really is and how to do it, you'll see what I mean. In any given mixing session there are more than a hundred decisions to be made per hour. In any given mastering session there are maybe a dozen or so decision to be made. Mixing can challenge you with more than 20, 30, 40 or more tracks to manage. Most mastering sessions require you to manage 1 stereo track. One.

Once you uncover the myths and clear out some of the brainwashing, you'll be an amazing mastering engineer. All of my students are. And one other thing - the person who knows best about how the master for any given track should sound - is you. You don't need "outside ears" or a "fresh point of view." That's all bs, designed to make Mastering Engineers money. I'm not saying not to use a Mastering Engineer, I'm saying learn how to do it yourself. Take total control over your art and your presentations.

Headroom



You can see headroom on a meter while mixing or mastering. On this meter the headroom is the black area at the top of the meter. If you had no headroom, the signal would rise all the way to the top of the meter - to zero - and stay there. If it were any louder than zero at the top, it would clip - meaning go into the “red zone” and you would most likely hear unwanted distortion.

You can also see headroom on the actual wave forms in your DAW. Here is a stereo mix, prior to mastering.

The amount of headroom in your mix prior to mastering, contrary to a lot of what you read and hear and see out there, is unimportant. Doesn't matter if you have 25 dB, 12 dB, 10 dB, 2 dB or 0 dB (that's right 0 dB) of headroom. Saying headroom is important in a final mix, prior to mastering, is like saying the shoes you wear will affect how much food you can eat.

That's right - it doesn't make any sense, because the amount of headroom in your mix has nothing to do with how good the mastering process will be executed. If you have 25 dB of headroom and you want 12 dB of headroom, then just turn up the stereo mix file track prior to mastering. If you have 0 dB of headroom and you want 12 dB of headroom , then just turn down the stereo mix file track prior to mastering.

Here's what does matter: How the mix sounds to you, how it feels, how much emotional impact you are achieving with your mix, does the mix have the amount of dynamics vs. raw energy and loudness that you want (prior to mastering), is there any unwanted noise, hum, buzz, hiss, distortion in the mix, and most importantly, how good is the MUSIC - does it give you chills or not?

Loudness Normalization

A process practiced by Streaming services such as Spotify, YouTube, Apple Music, etc. whereby a certain loudness level is decided that is considered comfortable for listeners. Each track submitted for streaming is then either turned down if it’s too loud, turned up if it’s too quiet, or left alone if it matches the loudness specification.

Loudness War

This is the phenomenon of the seemingly never ending saga of trying to constantly master music as loud as possible, and even louder!! Up until 2017 the Loudness War was in full bloom. Is it over? Yes, I'd say it's pretty much over. However, in its place is a Cold War that has brought with it even more unrest and confusion than the War Itself! You'll want to study the remainder of this glossary for sure, because the confusion being created needlessly about mastering for streaming services -- is about to disappear.

LUFS

If you haven't already, you will soon be hearing two words being used in connection with Mastering for Streaming Services: one is minus fourteen LUFS and the other is, believe it or not, Penalty!!

You'll be happy to know that I am NOT going to explain to you in detail what -14 LUFS means in scientific detail and how you need to get a bunch of special metering plug-ins and special limiter plug-ins to save you from the PENALTY involved in getting it wrong! God forbid! Penalty is an actual term being used by a company selling a special plug-in for making sure you get it right. However, as you will discover, I do not agree with using a negative term that tends to lower the confidence of a home studio owner, and just adds to the already confusing mess of conflicting information out there.

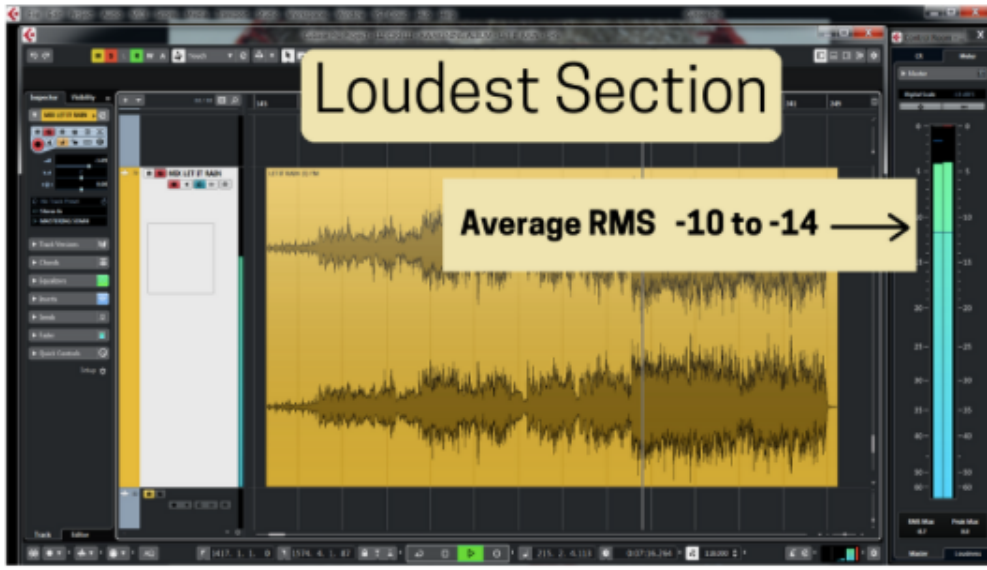
A simple explanation of -14 LUFS. LUFS stands for Loudness Units Relative to Full Scale. It's a measurement of loudness over a period of time (in this case, the duration of an entire song or instrumental piece) Technically it is called -14 LUFS Integrated. Integrated simply means for the entire duration of a recording. -14 LUFS Integrated is the Loudness standard that SPOTIFY has adopted. Here's what I want you to remember about -14 LUFS - it's a good thing because it's not as loud as the earlier Loudness War levels. I also want you to know that, contrary to what many people are spreading, it is absolutely NOT vital that you master all your tracks exactly at this level. In fact, it's better if you master your tracks slightly louder than this level. Stick around to find out why - and exactly how to do that in three simple stupid steps.

Since Spotify is so popular among fans and music creators, this particular number -14 is being talked about a lot.

To make things even more confusing, other streaming services have adopted other standards. I also will not go into all of the other standards, because it may lead you to believe you have to do something about the various standards. Here's the good news:

Do you need a separate master for each streaming service?

No! Believe it or not, there are people advising others and teaching others how to export separate masters for each streaming service. The problem? Most distributors such as CD Baby or DistroKid or TuneCore ask for one file for all services. The main point I'm trying to make is that a tsunami of confusion has just hit the music industry on the subject of mastering for licensing, and I feel very fortunate that I was able to put in over 200 hours of research on the subject so that I can help steer you clear of the confusion.



1 Simple Rule of Thumb

When you are in your final stages of mastering - which would normally be using your limiter, Raise your threshold until a simple RMS meter is averaging between -10 and -14 RMS ON THE LOUDEST SECTION OF YOUR RECORDING and set the Ceiling of your Limiter to -0.5dB. RMS stands for Root Mean Squared. You don't need to know what it stands for, so don't worry. All you need to know is that an RMS meter is like riding a bike and using an LUFS Meter is like flying a jet - when all you're doing is going to the corner store for some Ben & Jerry's. I'll take the bike, thank you.

Almost all DAWs have RMS meters. If not, there are simple free RMS meters available online.

What I discovered in my research was that if I kept my RMS Meter between -10 and -14 on the loudest section of any given track, the result was that my tracks were compliant with not only streaming services, but also with licensing end-users, for CDs, Cassettes and even Vinyl!

You will end up with tracks that are slightly louder than the LUFS standard for streaming, which is a good thing. The streaming service will turn your track down slightly, but no worries. It will be the same for everyone. It's called Loudness Normalization - they are turning louder tracks down and turning quieter tracks up. The problem with quieter tracks is that they use a limiter to turn them up - so you could end up with a problem, such as clipping (distortion).

Also know that SoundCloud does not use Loudness Normalization, so if you try to match the specs of Spotify, your SoundCloud streams will sound quieter than most other tracks. Also, iTunes does not turn quieter tracks up, so it's better to be a bit above the specs.

Basic Fundamental Mastering Chain

There is no "perfect" or "must-do" mastering chain of effects to use on any given mix. Mastering is as much an art as it is a science. However, in observing and producing hundreds of pro mastering sessions, here is a Basic Fundamental Mastering Chain of effects (plug-ins are just as good, if not better, than their analog counter-parts). I say this after personally conducting 5,800 hours of research on the difference between analog and digital recording, mixing and mastering.

EQ
COMPRESSION
LIMITING

Not only do these three effects make up the most widely used chain for mastering in the industry, but they are also usually used in this order. This does NOT mean that you have to use any of these plug-ins or that they have to be in this order. However, it's a good starting point. Experiment and use your ear to determine which effects, and in which order, give you the best sounding master for any particular track.

EQ or Equalization

Adjusting (and saving the parameters) of the volume of low frequencies, mid frequencies and high frequencies in a mix, in order to bring about the best emotional impact possible for that recording.

Search & Destroy (EQ Technique)

Using a thin band of frequencies, raising one node of an EQ plug-in or processor, and sweeping it to the right and the left until a problem frequency is heard. That specific frequency is then pulled down below the flat line of the EQ plug-in or processor, a small bit at a time while listening, until the mix either sounds better, or not. One determines if the frequency found is a problem by lowering it (with eyes closed) and listening to see if there is a sweet spot below the flat line that sounds better. If not, no need to lower it.

Compressor / Compression

A compressor is simply an automatic volume adjustment device. More specifically it turns down the volume only where any sound rises up above a certain threshold.

On most compressors, you can manually set the threshold. Sounds that are lower in volume than the threshold do not get affected by the compressor, they stay the same loudness as they already were. A common use of a compressor includes "make-up gain." That's a knob on most compressors where, after you set up the threshold and the compressor is doing its thing, you can then turn the overall volume of that track up. This results in the loudest sounds being closer in volume to the softer sounds, and the overall volume of that track higher than before (if the "make-up gain" was turned up). The bottom line is that the compressor can make a performance sound smoother and fuller, with less differences between the loudest and softest parts of that performance.

Compression can be used on any instrument, any voice and even on the overall mix.

What you are doing with your compressor is listening for any kick hits, or snare hits, or loud effects or momentary short duration loud sounds, which are called transients. If you hear loud transients, you are going to adjust your compressor, starting with the threshold at -20dB and the ratio at 2 to 1, so that these loud transients are tamed, are turned down a bit, in other words are compressed.

Limiter

Limiting is similar to Compressing, but instead of averaging out the loudness and softness of a track, the Limiter can be set to just increase the overall volume level of the track itself, while Limiting the maximum upper end volume of the track to ensure it doesn't distort or damage the speakers. Limiting also has a side benefit; a side-effect as it were, of making a track sound "beefier" and more "punchy."

Here is a limiter in action. Notice the threshold is now at -2.1 - which means the volume of my master is coming up - it's getting louder. The lower you adjust the threshold, the louder the track becomes. Also notice the margin, or ceiling, is set at -0.5. The ceiling stops the loudest sounds from getting any louder than -0.5 decibels, so that your music will not go over 0 and clip, which means go into the red and distort. You can see the meter on the right literally has a ceiling of -0.5 at the top. You can't see it because it's too small, but I've clicked on prevent inter-sample clipping. This is important when it comes to streaming as you will find out soon. If you don't see "prevent inter-sample clipping" on your limiter, than look for the words True Peak, and check that off. A workable target loudness to shoot for in mastering your tracks, with the limiter usually being your final effect, as shown in the illustration above, is anywhere between minus 10 and minus 14 RMS.

Part 2: Alphabetical Glossary of Music Production Terms

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A/B

A/B can be a verb, “to A/B” or a noun, “listen to this A/B.” A/B means to compare. To compare “A” to “B.”

For a Home Studio Owner, the most effective way to consistently create radio-ready mixes and masters is to A/B recordings to successful commercially released recordings; to A/B original recordings to reference tracks. Several videos in The Lucrative Home Studio program go into A/B’ing in great detail, demonstrating specific workflow approaches to A/B’ing, both during mixing and mastering.

Analog

A workable definition of analog for a Home Studio Owner would cover any device or process that serves a function of recording, editing, mixing or mastering - that is not computer-based. Such as tape machines and outboard gear which does not utilize computer-based digital technology (such as a compressor that uses tubes and electronic circuitry without digital computer-based circuitry).

Note: Some equipment sold as “analog” are actually computer-based digital devices dressed up as analog.

Analog also can be defined as the science and the art of capturing sound in real-time, on real-time media, rather than digital media which captures sound “every other moment” and fills in the moments in between. The analog capturing of sound is continuous. However, modern digital recording captures sound so quickly (48 kHz recording, as an example, records a sound event 48 thousand times per second), that the ear hears the flow of playback as continuous.

In double blind-fold muted tests, I discovered with over 5,800 hours of research at a multi-million dollar recording facility in Tampa, Florida (Springs Theatre Studios “The Abbey Road of America”), that the idea that analog recordings were and are superior to digital recordings is a myth.

I don’t ask you to agree with me or believe me, but if someone can show me research findings to the contrary, I’ll be the first to adopt the findings.

For a Home Studio Owner, the research findings I discovered and compiled form a large part of The Lucrative Home Studio program. And I offer you hard evidence and proof to back-up my findings. The good news is that you can be rest assured that your little digital home studio can equal and even surpass the quality and output, quality-wise, of any pro studio - analog or digital!

And that information and education is something I categorize as a Confidence Builder. Confidence Builders, as opposed to Confidence Killers, are what allow any Home Studio owner to take full control of their career and potentially rise to A-List status in the industry.

Checkerboard A/B

A process and a resulting exported audio file, called a "Checkerboard A/B File," which is the most powerful process and tool for any Home Studio Owner that will necessarily lead closer and closer to radio-ready mixes and masters for anyone who applies this procedure.

A Checkerboard A/B file is a stereo file (wav or mp3) exported from a DAW containing approx. 5 seconds of your mix, 5 seconds of your reference track, 5 seconds of your mix, 5 seconds of your reference track, etc., seamlessly edited with no silence in between, with the volume of your mix and the reference track exactly matched (for mixing) to the volume level of your mix (not the volume level of the reference), and matched to the volume level of the reference track (for mastering) as close as desired by the artist, producer and/or engineer.

The Science behind the efficiency of a Checkerboard A/B file has to do with the fact that if any physical movement takes place (such as clicking a mouse or flipping a switch) while A/B'ing -- and/or if any silence exists between A and B, the mind

will “adjust the ears,” and it will be impossible to truly A/B the recordings you are trying to compare. Once the process is put on automatic, with no physical movement of the person listening, with the ability of the person to close their eyes and listen, a true and actual comparison can be made, bypassing any auditory or mental illusions inherent in all other forms of “A/B’ing.”

In other words, if you want to know exactly where you and your mix stands in relation to the industry, then the only way to know for sure, without second guessing and without falling prey to the many illusions that occur during traditional forms of “A/B’ing,” then the one fail-safe way to find out is to understand and apply the technology and process of “Checkerboard A/B’ing.”

Compressor / Compression

A compressor is simply an automatic volume adjustment device. More specifically it turns down the volume only where any sound rises up above a certain threshold.

On most compressors, you can manually set the threshold. Sounds that are lower in volume than the threshold do not get affected by the compressor, they stay the same loudness as they already were. A common use of a compressor includes “make-up gain.” That’s a knob on most compressors where, after you set up the threshold and the compressor is doing its thing, you can then turn the overall volume of that track up.

This results in the loudest sounds being closer in volume to the softer sounds, and the overall volume of that track higher than before (if the “make-up gain” was turned up). The bottom line is that the compressor can make a performance sound smoother and fuller, with less differences between the loudest and softest parts of that performance. Compression can be used on any instrument, any voice and even on the overall mix.

Engineer, Home Studio

A Home Studio engineer is a fun hat to wear. It’s so fun, in fact, that most Home Studio enthusiasts wear ONLY that hat. And that, really is the only problem with this aspect of Home Studio tracking, mixing and mastering. The engineer is the knob twirling, fader sliding, mouse clicking whiz kid who keeps his or her attention on the details of the recording process, and is directly hands-on when it comes to making adjustments.

It’s important to note that the engineer is subordinate to the producer, and in a smooth running studio, the engineer listens to and follows the directions of the producer.

Whereas in a pro studio, where you often find two separate people wearing the hats of engineer and producer, in a Home Studio setting, you most often find one person wearing both hats. Therefore, it is important, *vital* actually, that when wearing the hat of engineer, you remember that you are primarily and most importantly also a producer.

That means you should take a breath, take a break and switch hats on a regular basis during any tracking, editing, mixing or mastering session - go into a nearby phone booth somewhere, change your super-hero costume and exit as super-producer! The quality of your mixes and masters will increase in a huge way.

Finished or Completed Track (When to STOP working on your mix)

No emotional weak links for the listener, from the very first note to the last moment of silence.

Gain Staging

Inside a D.A.W. (Digital Audio Workstation, such as Logic, Cubase, Ableton, ProTools, etc.), all the tracks in a mix eventually flow over to the Stereo Buss Out. The Stereo Buss Out is a Stereo Channel (Left and Right) which sends the audio it receives from all of the separate tracks directly to your speakers. The Stereo Buss Out, therefore, is like a funnel.

If you allow the volume levels of all of your separate tracks to get out of control while mixing, the Stereo Buss Out will receive so much volume that it will “go into the red” and start “clipping” (unwanted distortion).

Gain Staging is a term used to describe the process by which a mixing engineer manages the volume levels of all the different separate tracks, as well as the volume of the Stereo Buss Out itself, in order to avoid clipping. Gain Staging, though this isn't usually taught, can be handled very simply, without any slightest loss of quality, by simply turning down the Stereo Buss Out fader. This is assuming that none of your separate tracks themselves are distorting.

Harmonic Exciter

This is usually set up in a "Multi-Band" set up, much like the Compressor. Accordingly, you can choose any part of the Low, Mid or High Frequency Spectrum and adjust the amount of Harmonic Exciter applied to that frequency range.

What does a Harmonic Exciter do exactly? Well, it actually applies a small amount of pleasing distortion to a track (that's right, sounds like an oxymoron, doesn't it? Pleasing Distortion – but that's exactly what it is, a certain type of distortion (not the kind you hear from a guitar amp!). Used in very small doses, this type of distortion actually creates the effect of adding punch, warmth, brilliance and CLARITY to a track). You can also use a "Soft Clipper" plug-in, or a Maximizer" plug-in, or a "Tape Emulation" plug-in for this purpose.

Headroom

Headroom simply describes how much “room” is left for someone to turn the volume up before a recording starts distorting or “clipping.”

If you can hardly turn up the volume before the recording starts distorting or “clipping,” than there is very little “headroom.” If the volume of a recording is low, and you have to turn the volume way up before it will distort or “clip,” than there is said to be a lot of “headroom.”

Technically, “headroom” is said to be the loudness level of the recording below 0dB, (0db being the loudest possible level before distortion). I know, 0db should mean silence, or very soft, but it’s upside down and backwards in digital audio - 0db is at the TOP of the loudness meter!

The exact amount of “headroom” cannot be “heard,” though it can be seen on loudness meters and it can be described in numbers. Decibels (unit measurement of loudness) is used to describe headroom. No one can train themselves to “hear” the amount of headroom on any given track. It’s impossible to do. The only way to figure it out, is to look at your meters or to have a computer analyze your track. A computer can “hear” how much headroom your track has.

When it comes to digital recording, there is a volume level meter in your D.A.W. (Digital Audio Workstation, such as Logic, Cubase, Ableton, ProTools, etc.). In fact there are many of them: there is a volume level meter on each track, and on the Stereo Buss Out. headroom simply refers to how much, if any, the recording has been turned down below the loudest possible level that can be achieved without distortion (on the volume level meter, this loudest point is numbered as Zero).

Again, the volume level meter numbers are "upside down," meaning, the quietest sounds are described with the largest numbers (-40dB, -50dB) and the loudest sounds are described with the smallest numbers (-4dB, which is quieter than -2dB, which is quieter than 0dB). 0dB is the loudest a signal can go in digital recording and mixing, before it "goes into the red" and before the sound will begin distorting. There are numbers that describe "louder than 0dB," and these are described in positive numbers, such as +1.5dB or +2dB. These levels will normally be distorting and/or sound very compressed.

You will hear some Mastering Engineers talking about "headroom." What they are talking about is what they prefer, in terms of how much "headroom" they want in a client's mix before they Master it.

Why do they want "headroom?" Because when you master a track, the mastering process will turn it up, and if it's already almost all the way up to the loudest it can be (very little "headroom"), then, as many people believe (incorrectly!), it's too

loud for them to master. They don't have enough "headroom" to work with. So they believe they won't be able to master that track. The believe if they start mastering a track with very little "headroom," the track will start distorting and clipping right away and as they try to master it even more it will majorly distort and clip, and so, forget it -- not enough "headroom" on this mix, buddy -- rejected!

You will hear things like, "Make sure you give me 12dB of headroom on your mix when sending to me for mastering." Or, "I need 6dB of headroom before I can Master your track." That means the mix needs to be turned down in volume by 12dB or 6dB before exporting the file.

These discussions are actually and factually unnecessary. Though it is usually not taught correctly, the truth about headroom is this:

"Headroom" fails to describe the quality of a mix, in other words how good the mix sounds to the ear. "Headroom" describes only how loud the volume is below 0dB. Therefore, "headroom" is a quantity definition, and not a quality definition, of a mix. The best Mastering engineers understand this. Instead of communicating to mixing engineers in terms of "headroom" specifications (quantity) they talk about how the mix sounds to the ear (quality).

Empirically speaking, a mix could have pretty much NO headroom and still be completely ready for Mastering.

How can that be you ask? Well. If the mix sounds great, with no distortion and it doesn't sound overly compressed or overly limited, and it has just about no headroom, guess what? All the mastering engineer has to do in order to master it and to create instant headroom is, drum roll please...turn the volume of the mix down!

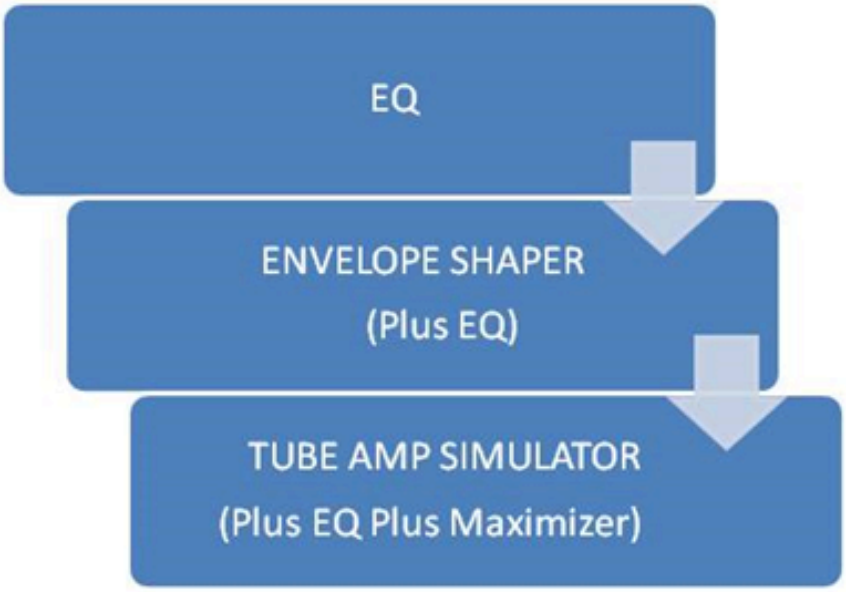
What makes a mix ready for mastering is not "number of decibels below zero" [headroom], or whether or not limiting or compression was used on the stereo buss out channel, or how many decibels of LUFS [Loudness Units Full Scale] the file contains by digital analysis, or any number of "scientific" criteria.

What makes a mix ready for mastering is: a great mix. A great mix is defined as a mix that sounds great, a mix that feels great, a mix that brings emotional impact to the listener. I know it can be a lot of fun to discuss all manner and sorts of complicated and impressive sounding terms on whether or not a mix is ready for mastering, but it happens to mostly be b.s. and a waste of time.

Insert vs. Send-Return Signal Flow

INSERT SIGNAL CHAIN

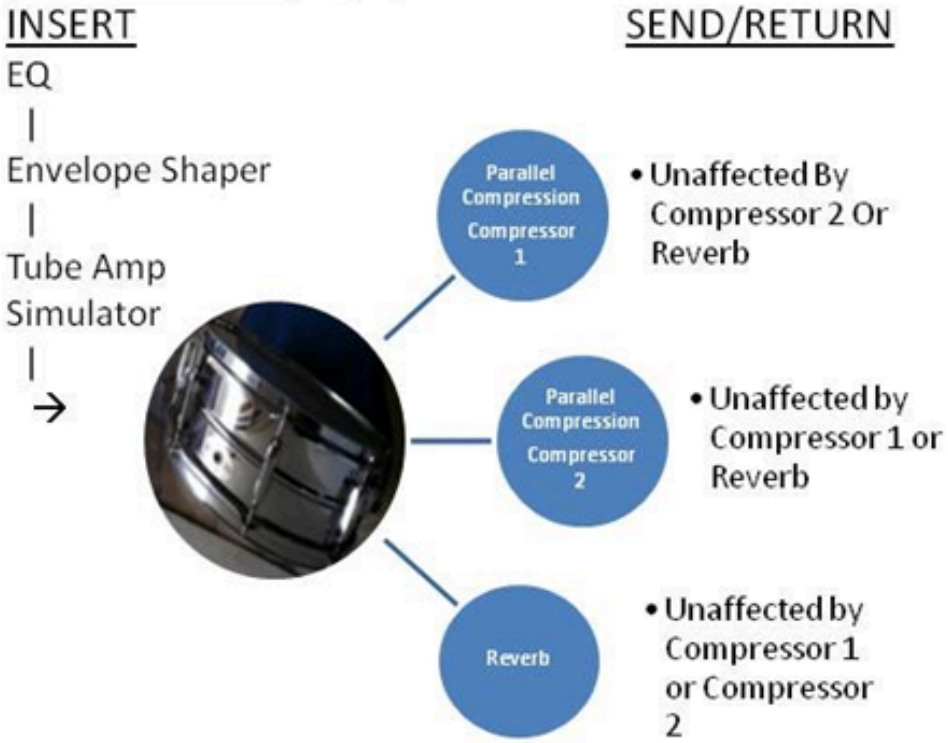
In this example we have an EQ Plug-in first, followed by an Envelope Shaper Plug-in and then a Tube Amp Simulator Plug-In. The order of the Plug-Ins is VITAL when using the INSERT configuration for effects, because with the INSERT configuration, each plug-in feeds into the next, in sequence. The RESULTING Signal (in this case EQ'd, ENVELOPE SHAPED and TUBE AMP SIMULATED all together), will feed into each SEND/RETURN Plug-In used. [See Next Illustration]



Snare Drum Track
Example

SEND/RETURN Signal Chain

Note: The Sum Of The INSERT Signal Chain Feeds each Plug-in in the SEND/RETURN Signal Chain. In this example, let's say this Snare Drum Track had 3 plug-ins on the INSERT Signal Chain; an EQ , an Envelope Shaper and a Tube Amp Simulator Plug-in; in that order:



Limiting

Limiting is similar to Compressing, but instead of averaging out the loudness and softness of a track, the Limiter can be set to just increase the overall volume level of the track itself, while Limiting the maximum upper end volume of the track to ensure it doesn't distort or damage the speakers. Limiting also has a side benefit; a side-effect as it were, of making a track sound "beefier" and more "punchy."

Mastering

A new workable definition of Mastering has been needed in a big way. A definition that could not only help organize the chaos that has infiltrated the Music Production and Audio Engineering world, but a definition that would allow anyone to apply the knowledge of Mastering directly and immediately to any project or recording task at hand.

The New Definition of Mastering:

In the real world today, there are three different approaches and applications of Mastering, but up to this point, there has been only one definition. A new definition would clearly define each separate approach and application.

Mastering is a set of actions that governs the final outcome of how a recording will sound, with the final goal being a pleasant listening experience for the end-user, listening on any medium.

Mastering can be broken down into three separate activities all aiming for that same final goal, a pleasant listening experience. These three activities are TRADITIONAL MASTERING, STEM MASTERING, INDIE MASTERING.

The TRADITIONAL definition of Mastering is: Modifications made to a track to make it sound even better and louder – those modifications being made after the track has been mixed down to a single stereo recording.

Before we get into Stem Mastering and Indie Mastering (both brand new definitions), it's important to note that in the real day-to-day world of what YOU are doing in your home studio on your D.A.W., Mastering actually takes place, BEFORE, DURING & AFTER a mix is done. If you keep this in mind and learn the tips and advice given to you in this course, you'll be submitting tracks that Music Supervisors will accept, instead of getting rejections due to your tracks being "not 'radio-ready.'"

STEM MASTERING

Stem Mastering is actually a combination of both Mixing and Mastering.

Stem Mastering consists of the Mastering Engineer receiving stem files (in this case the stem files, rather than being each individual instrument and/or vocal track exported separately, would be grouped stem files; that is – submixes of groups of instruments and/or submixes of groups of vocals pre-mixed by

the mixing engineer) and taking those stem files and first Mixing them, and then Mastering them.

Examples of stem file sub-mix groups would be: VOCALS (sometimes broken down into LEAD VOCALS and BACKING VOCALS), GUITARS, KEYBOARDS, BASS, DRUMS, ORCHESTRATION; or another example of stem file sub-mix groups would be: VOCALS and INSTRUMENTS.

When the Mastering Engineer receives the stem files, he loads them up into his workstation and the first thing he does is Mixes the tracks to his taste. The Mastering Engineer may export a final stereo Mix of these sub-mixes prior to Mastering, or he may Master the stem files separately and export the combination of Mastered stem files as the final master of the song.

The advantage of Stem Mastering for the client as well as the Mastering Engineer is that if the Mastering engineer hears something such as a problem with a vocal performance in the second chorus, let's say – he might cut and paste something from the first chorus and use it instead – or if he hears a problem with the relationship between the guitars and the drums (let's say the guitars were mixed too loud) – with Stem Mastering, he can bring the level of the sub-mix group of guitars down exactly where he feels they should be – rather than trying unusual solutions to bring them down if he only had a single stereo mix-down of the entire song.

Rather than have to give the mix back to the Mixing Engineer and asking him to fix something and then send it back, the Master Engineer has more control over the final product, because, though he cannot mix individual items such as the Kick Drum or one particular Guitar, he can adjust GROUPS of instruments and/or vocals and achieve a product overall closer to his liking. The possible disadvantage is that the artist and/or mixing engineer, if they already attempted a final mix that they love, might not like what the Mastering Engineer Mixes/ Masters compared to their own mix.

INDEPENDENT MASTERING

Independent Mastering is so named due to the fact that a new form of Mastering has evolved in the Music Industry; Mastering in Project Studios and Home Studios by Independent Musician/Producer/Engineers.

Due to various reasons; such as economic limitations (not being able to afford a pro Mastering Engineer), or perhaps due to personal pride in do-it-yourself workmanship, and perhaps due to the joy of learning and executing a new science and artform, or any other number of reasons, a new discipline has emerged – where Mixing and Mastering are done by the same person on the same equipment.

Rather than trying to say that this is not a workable and successful assembly line for sound recordings (it very much IS) or that it violates the Traditional definition of Mastering, this newer approach -- which grows in members by leaps and

bounds every year, this new approach has organically created its own definition of Mastering.

By observing this approach face to face for more than ten years now, and by doing it myself for thousands of hours, I have been able to distill it's essence down to a workable definition: INDEPENDENT MASTERING - 1. Mastering is a set of actions with the purpose of creating the best possible audio recording possible, starting even before recording begins.

Examples: Before you start recording, you should carefully check the actual inherent noise floor levels of each instrument, mic, plug-in (that's right — plug-ins that you predict you will be using on that recording, if not already tested before in previous projects) or pre-recorded samples you are using for your project.

Many times you will find some fascinating MASTERING problems that exist BEFORE RECORDING EVEN BEGINS! For instance, I was checking the optimum setting for a microphone before I recorded a vocal session the other day. I chose a microphone for an upcoming vocal session. I then test-recorded vocals with that mic (without the singer around, as these tests can take time and you don't want a vocalist wasting their time on your job).

By test-record I mean this:

a. I adjusted the input gain knob on the pre-amp slowly while test-recording, noting down where the settings were at any

given moment by talking into the mic, stating what exactly I was adjusting at that moment, so I could listen to the effect of any change or adjustment during playback and know what was causing any good or bad effect on the signal being recorded.

b. Recording the mic without any vocals at all – just the "silence" of the room, while making both major and fine adjustments on the pre-amp; while noting down in writing what was being adjusted and how (including any numbers or readouts of the equipment or meters) at any given bar on the track.

c. I then played back the "silence" and listened very carefully to make sure no background noises that could affect the recording exist (known as the "noise floor," Note: Keeping your Home Recording Studio environment as quiet as possible is very important in the recording stages. Hence, the reason I suggest applying your budget towards soundproofing more than sound treatment.

Mastering Engineer

As a Home Studio Owner, you should absolutely do your own mastering. Mythmakers and Brainwashers abound in the field of mastering. I do all my own mastering and have a 100% first time submission acceptance rate for my last 35 tracks.

Here's a big Myth: Mastering is harder than mixing. Think about it. That makes absolutely no sense. A ridiculous statement that "everybody knows."

Once you learn what Mastering really is and how to do it, you'll see what I mean. In any given mixing session there are more than a hundred decisions to be made per hour. In any given mastering session there are maybe a dozen or so decision to be made. Mixing can challenge you with more than 20, 30, 40 or more tracks to manage. Most mastering sessions require you to manage 1 stereo track. One.

Once you uncover the myths and clear out some of the brainwashing, you'll be an amazing mastering engineer. All of my students are. And one other thing - the person who knows best about how the master for any given track should sound - is you. You don't need "outside ears" or a "fresh point of view." That's all bs, designed to make Mastering Engineers money. I'm not saying not to use a Mastering Engineer, I'm saying learn how to do it yourself. Take total control over your art and your presentations.

Masterpiece Recording

We talk about "Iowa Ears" (the average listener with no music or production background) and the definition of a completed track, "No emotional weak links for the listener from the very first note to the last moment of silence." There is a level above a completed track, and that is a masterpiece.

I would say the definition is, "A recording that evokes extremely strong emotional reactions in the listener such as extreme sadness, extreme tears, extreme joy, extreme happiness,

extreme hope, etc. and even possibly goosebumps - in a universal way to the vast majority of people listening to your recording -- to the point where people not only want to share your music with others, but they do so, with the hope of spreading the same feelings in others."

Microwaving

As in, “that guy is trying to microwave his career. He doesn’t realize how much hard work and time it takes to achieve craftsmanship quality which will raise the value of his work and himself in the marketplace.”

Microwaving was a term I learned from Iz Avila, of the legendary Avila Brothers. It means trying to achieve instant results without the willingness and action of experiencing the frustration, pain and character-building reality of life.

Iz is known in the industry for helping up and coming artists. His biggest barrier, he told me, is the fact that young artists are focused on one thing for the most part: Microwaving everything they touch: music theory, music production, sound design, networking, marketing, performances, practicing - just about everything.

The counter philosophy to Microwaving is doing things right the first time, which sometimes means things will take longer to do right than you might guess.

Mixing for the Home Studio Owner

Mixing for the Home Studio Owner is exactly the same as Mixing for the Grammy Award-Winner or the A-List Mixing Engineer. And the equipment has nothing to do with it. Your ear has everything to do with it. The great news is that you can develop your ear (especially with the Music Production Ear-Training Exercises in The Lucrative Home Studio program), to a point where you can mix like the pros -- in your own Home Studio.

So, what is mixing? Mixing is simply balancing all the sonic elements of a recording in order to produce a sonically and emotionally pleasing recording. It is mostly, believe it or not, balancing the volume of various elements in a recording. Period. Even certain effects such as EQ, Reverb and Delay, all are dealing with balancing volumes.

When I played a Home Studio recording I did of the U2 hit song "One," for Multi-Platinum Grammy Award-Winning U2 Producer Steve Lillywhite, he stated, "Gary, this sounds just like the original!!" First of all, the U2 hit was done at a multi-million dollar European analog studio and mine was done in my less than $2,000 all digital home studio.

Secondly, and most importantly was a lesson I learned while talking with Steve. I started asking him questions any Home Studio owner would start asking a Multi Platinum Grammy Award-Winning Producer, "How much compression do you use

on the drums and vocals, what types of reverbs are you using, what chain of gear did you use on this track, on that track, etc., etc."

Steve stopped me mid-sentence, and said, (in his famously direct way), you don't get it Gary, I don't know anything about compressors and that stuff, I sit behind the board with my hands on the faders and I close my eyes and I move those faders around until magic happens. Every once in awhile I'll ask the engineer to do something technical, and most of it goes over my head to be honest. But one thing I do know, is how to balance the volume of those tracks, man, the volume of those tracks. It's an art, brother."

And I will tell you, that conversation was mind-blowing and ear-opening for me. I went back to the studio and realized that my best mixes used the least amount of plug-ins (I took care to make sure the recording process was done right and the performances were kick-ass), and were 80% balancing volume levels! Now that's mixing in its purest form.

There ARE certain effects and plug-ins which I call "power tools" and which are amazing to work with, but they are few and I use them sparingly. The more I mix, the more I learn that simplicity is extremely powerful and creates incredibly emotional works of art.

Multi-Band Compression

Multi-Band is a fancy word which means the Lows, Mids and Highs are separated into 3 (or more in some cases) “bands”(or frequency ranges) and each “band” can be separately Compressed.

Note that when compression occurs (the loudest sounds are made softer), it is usually a good idea to turn up the volume of the track (this is called “make-up gain” on a compressor) after compression has been applied. The result of compression, and then applying make-up gain, is that the loudest sounds are made softer, and the softer sounds are made louder, thus averaging out, or “smoothing out” the differences in volume of a performance or sound design. If only compression is used without using the “make-up” gain, then the overall volume of the track will decrease. In the Mastering process, you are usually trying to get the overall volume level higher than the mix you were given to Master, so turning up the “make-up gain” in volume is usually done in the Mastering Process. The “make-up gain,” can also be used on individual tracks during the mixing process.

Networking

Finding people who you can help and who can help you, starting with you actually helping them (by finding out what they actually need or want), establishing a long-term reciprocating relationship.

The P.I.E. Formula for the Home Studio Owner

“P” stands for pre-payment. Always get payment up front. Not getting payment up front will eventually lead to failure for a Home Studio. This is my opinion, but it’s also based on more than 30 years of personal experience as well as observing other Home Studio operations.

“I” stands for Integrity. I have found that a lack of integrity while carrying out any task at all - from mixing, to selling to doing your paperwork, can create a cumulative weight of gloom and “burn-out” that is in actual fact a dark cloud that accumulates more and more energy and power over anyone who regularly allows their standard of integrity to drop. Conversely, if you uphold your standards of integrity and do a thorough job on everything that you touch, I also have observed in myself and others, that a cumulative momentum of energy and pride will develop over time.

“E” stands for “Ear-Fatigue,” which I have discovered is a misnomer, a false label which doesn’t have to exist at all. For instance, I regularly mix 10 to 12 hours a day -- sometimes for 7 to 14 days at a time -- with no “ear-fatigue.” How?

First of all, I watch my high end frequencies and make sure they are not abrasive or annoying, I don’t mix loud (85dB or lower, only checking my mix loudly for a few moments now and then), and I mix with my eyes closed as much as possible.

A lot of "ear-fatigue," I have found through my research, is really "eye-fatigue!" That's right, it's the result of a psycho-acoustic phenomenon and illusion called The McGurk Effect. (You see an amazing demonstration of The McGurk Effect in The Lucrative Home Studio program). It is actually a cumulative effect of The McGurk Effect on the EYES, that creates what many people believe is "ear-fatigue." When the truth is, you can go hours and hours without ear-fatigue, if you know how to mix and understand sonic illusions and how the mind processes sound.

Without knowing and applying the P.I.E. Formula for Home Studio Owners, I notice that many Home Studio Owners eventually give up on their original plans and visions and goals and dreams, only to become Broke, Burnt Out and Ear-Fatigued!

I'd much rather see you Flourishing, Energetic and Always Ready To Mix!

"Poor Man's" Mastering

If you just cannot afford to purchase a Mastering Plug-In Suite, such as Izotope Ozone, that's ok. There is an effective "poor man's" approach to mastering. It goes like this:

1. Open a new file and call it ('name of song' Mastering). Then open that file and import your stereo mix.
2. On the Master Stereo Track set up the following plug-ins (you can set them up in either the Insert Signal Chain or the Send/Return Signal Chain settings):
    a. An EQ Plug-In
    b. A Multi-Band Compressor OR a Regular Compressor Plug-In
    c. A Limiter Plug-In
    d. An Exciter Plug-In
    e. A Stereo-Widening Plug-In
    f. A Reverb Plug-in.

Note: An EQ Plug-In AS AN INSERT PLUG-IN is Usually the first Plug-In in the chain, no matter what else you do. This allows you to adjust the overall EQ of the track prior to the track being sent to other effects.

Basically, with the above tools, you can experiment to your heart's content, and you will be accomplishing a vital process in your own assembly line while learning how the pro's do it!

Producer, Home Studio

A Home Studio producer, as compared to an engineer, does not live in "rabbit holes" with his face stuck to a computer screen. Leave that to the engineer. A producer steps back, helps to keep the big picture of the project or song or album in focus, helps to pull the engineer out of rabbit holes and off the screen

every once in awhile, and is responsible for hiring talent, rehearsing talent, coordinating schedules, directing and guiding the engineer, and making the final calls on tracking, mixing and mastering decisions (until or unless the Artist and producer have decided that the Artist is to make the final decisions).

Smoke & Mirrors

The term “Smoke & Mirrors” traditionally refers to items or actions that fool people and appear to be much more impressive or magical than they actually are.

“Smoke & Mirrors” is a term I use to describe a certain socio-economic “dance” that occurs between studio personnel and clients, between musicians and musicians and even within an individual -- from themself to themself.

The “dance” goes like this. If I buy an expensive piece of gear in order to impress a client, (or another musician or myself) whether I believe that buying that expensive piece of gear also buys me a better quality product or not, (as compared to a less expensive version of that same gear) the client in most cases, DOES believe that the more expensive piece of gear is better and will result in a better recording, mix, master, etc.

Since many clients believe this to be true, many clients will pay more if they see these expensive pieces of gear populating a studio.

Examples of such “Smoke & Mirror” items are a large mixing board, a microphone that costs thousands of dollars rather than hundreds, a pair of speaker monitors that cost thousands of dollars rather than hundreds, etc., etc. You get the picture.

So, though I tend to educate my clients so they are not caught up in what I call “The Emperor’s New Clothes Smoke & Mirrors Syndrome,” I also fully understand that there are certain clients that will not easily understand, or wish to understand, the truth in these matters. As I said, in my opinion, it’s a socio-economic sort of “dance,” and as with all dances, it can be a fun experience, so why spoil it for everyone?

Therefore, I am not one to say NEVER go down this route, NEVER buy things just for their perceived value, regardless if their actual value is better or not. I am totally ok for anyone to use the strategy of building “Smoke & Mirrors” in their studio -- as a business investment and strategy, IF they are certain and can prove that they have the potential clients lined up and ready to lay down their hard cash to pay high rates in order to experience the dance of “Smoke & Mirrors.” It’s not a strategy I employ, but I’ve seen it employed successfully in some Home Studios.

Warning: I would attempt this only one small step-at-a time, and only when you know purchasing that next piece of gear will help you close deals with certain clients.

Stereo Files vs. Mono Files

Stem files are often exported as stereo tracks - that's because in many DAWs batch export settings cannot be customized. In other words, you can export a batch of stem files only as stereo or only as mono. Some DAWs don't even let you batch export mono - some are set as default to stereo.

So, what IS the difference between a stereo vocal file and a mono vocal file?

If the vocal track was recorded with a single mic and on a single mono track, and then exported as a stem file in stereo (as was the one in my course example) - then the answer is: there is no difference. Not one single difference. Nada. Nothing.

What happens when you take a mono track and export it as a stereo file? The left and right channels in a stereo file, just because they are separated, does not mean they sound "wider" or "different" than a mono track AS LONG AS THE LEFT AND RIGHT CHANNELS ARE EXACTLY THE SAME. When a mono track is exported as a stereo track, the left and right channels are exactly the same volume and contain exactly the same material. A stereo file with the Left and Right Channels containing the exact same content on the left as on the right sounds mono. It IS mono. It looks stereo, but it SOUNDS mono. Many people don't understand this concept. They were either not taught this, were taught incorrectly, or were not taught effectively.

Why have a stereo file or a mono file for vocals. Is either advantageous or better? No. Both are equally useful, both sound exactly the same, both have the exact same sonic properties, qualities and functioning.

Can either of these files affect plug-ins. Yes. With a stereo file you can go straight to stereo plug-ins if you choose to use INSERT plug-ins. If you choose to use SEND-RETURN plug-ins, then you can set up either a stereo aux for your effects or a mono aux for your effects and then go from there with your plug-ins on the aux channels (either stereo or mono plug-ins). If you have a stereo vocal file and you want to place mono INSERT plug-ins on that track, then simply route that track to a mono aux and place mono INSERT plug-ins on that track.

Does using a stereo vocal file "double" the vocal because it's stereo and not mono? No. A stereo vocal file created from a single mic and a mono recording sound exactly the same as a mono track with one channel. A stereo file for a vocal does not create "two vocal copies" The volume is exactly the same as the mono file, the "spread" (there is no spread - it's in mono) is exactly the same. The left and right channels of a stereo file exported from a mono file follow this formula: Left Channel - (same as right channel information) 1/2 volume, Right Channel - (same as left channel information) 1/2 volume. Therefore, when you add up the left channel and the right channel of a stereo file, with each containing 50% of the volume of the entire file, this equals 100% of the mono file (exactly the same as the mono file) - not 200% as some people think.

Therefore, when I doubled the stereo vocal file, I did not create "four vocal tracks," I created two - it's simply doubled - exactly as two mono tracks would be doubled. It's exactly the same - no difference.

As I said, this is a really big area of confusion (even with some seasoned producer/engineers believe it or not!).

I'm actually putting together an entire course on this subject. All of my students that I mentor, go through extensive training on this subject until they are ninja's at it. And every time I teach this subject it requires quite a bit of un-brainwashing before I can get into the truths of stereo and mono.

When you get this down like a ninja, you'll find, just like with many things in music production, that it's a nothing-burger. It doesn't matter in the middle of a session whether you get a stereo vocal file or a mono vocal file. You know they are basically exactly the same and you know how to deal with them in terms of plug-ins, because you know the truth. There is no second-guessing, there is no discussions, no arguments, and most importantly -- there is a lot of confidence in what you are doing and what you know. When you have a lot of confidence, you can literally hear your mixes with better objectivity. What I have discovered is that mixing and mastering are Mental Sports. The more confusions a person has, the harder it is, literally, for them to hear what is in front of them -- especially when it's their own mix!

Stereo Imaging

This creates the sonic illusion that the mix is being "widened," or stretched "wider" and tends to sound a bit fuller and dynamic and not so flat and lifeless. However, don't overdo Stereo Imaging – it's a nice effect, but can also cause Phasing problems, where the mix begins to sound weak and hollow.

Tracking

Tracking simply means recording. Tracking drums means recording drums. Tracking vocals means recording vocals.

Tracking, Home Studio

Tracking, or recording -- in a Home Studio can differ from tracking in a pro studio in several ways.

Vocal Tracking in a Home Studio

One of the most innovative ways of tracking pro quality vocals in a home studio is by using a portable miniature "vocal booth." One such product on the market is called the Kaotika "Eyeball." This invention allows anyone, in any room (even outside!) to record vocals without the inherent problems which exist in many rooms or environments. A microphone is placed inside a sphere, which has one flat surface containing a pop-filter, into which the vocalist sings. Since the mic is encased inside a

sphere, there are no outside influences which can adversely affect the recording.

This might sound too simple and stupid to even mention, but tracking vocals in a Home Studio to pro studio standards has more to do with the singer than the studio. I guarantee that if you want to see the recordings you create match pro studio standards, get the best possible singer you can to sing on your track. Sometimes that means you'll need to hire a singer online who sings their track in their own or another's studio and sends you the file to mix. Either way, vocal tracking at it's best is accomplished by utilizing the absolutely best vocalist(s) you can find.

Drum Tracking in a Home Studio

Drum Tracking has been made to be far too complicated than it needs to be. I can speak from experience, as I grew up as a Studio Drummer, Producer and Engineer. I have many times gotten an amazing drum sound with two or three microphones. That's right two or three. The truth is, the more mics you place on a kit, the more you could be multiplying potential mixing problems, instead of solving them! The main things you need in your home studio when it comes to tracking drums are

1. A great drummer
2. Experience setting up a minimum number of mics and
3. (If needed) Soundproofing!

Trial and Terror

A term which describes trying, over and over, to solve a problem or learn a technique or attain a certain standard -- without solving the problem, without learning the technique or without attaining a sought after standard. This is something I went through for years in my Home Studio before deciding to thoroughly research, and get to the bottom of, the truth about Music Production, Business and Networking. More than anything else, Trial and Terror is something I hope you never have to experience. And if you have experienced it, then I hope it's something you never again have to experience, from here forward!

Where to Go From Here?

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Music production, recording, and owning a home studio is a long road - and there's way more to it than I can cover here in one guidebook. Above all, continuing education should be a priority for you. Not only will this help you stay on the cutting edge, it will also help you to hone your skills and push your limits.

And that's why I put together the Lucrative Home Studio course - to give you a course that will walk you through the next steps.

The Lucrative Home Studio is an 8 module online course with 50+ video lessons taking you through everything from building and setting up your home studio (and how to save a lot of money on gear), all the way through mixing, mastering, and finding and closing clients.

I want to *help you* keep up the momentum and give you the *resources you need* to mix radio-ready songs and run a profitable home studio. That's why I'm giving you a personal invitation to join The Lucrative Home Studio course.

CLICK HERE TO SEE HOW THE LUCRATIVE HOME STUDIO COURSE CAN HELP YOU

What You'll Learn in the Lucrative Home Studio:

- **Upgrade your EAR** with techniques that will save you time and money and set you apart.
- Learn how to be both a great producer AND a great engineer. (Yes, you can be both!)
- Learn step-by-step **how to mix and master** radio-ready recordings from your home studio.
- Build or upgrade a home studio to industry standards without wasting money (including room prep, plans, gear, and equipment).
- Develop a **6-figure money making machine** with your home studio.
- Feel more confident in your producing, mixing, and mastering abilities.
- Turn any space into a **profitable home studio** and avoid the big home studio myths that will waste you thousands of dollars.
- Learn how to price your services confidently to ensure you get adequately paid for your work.
- **Get bands and clients willing to pay for your services** to come to YOU.
- Learn how to effectively communicate and negotiate with clients and close more deals.
- Develop a **business mindset and solid reputation** that will keep clients coming back.
- Get a system in place to manage your studio's income, expenses, bookings, and administration.
- **Find your niche** and position your services to consistently land high-paying clients that compliment your skill level and expertise.

CLICK HERE TO SEE HOW THE LUCRATIVE HOME STUDIO COURSE CAN HELP YOU