Audio Mastering Secrets
The Pros Don't Want You To Know!
By John Rogers

AudioMasteringSecrets.com

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Listen To Your Feedback 
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Working In Decibels And Percentages, Not Fader Slides 
You Have To Make Everything Sound Good 
Let Your EARS Be The Final Judge, Not Your EYES 
Always Finalize On Fresh Ears 
Mastering Is An Art Form, Treat It Like One!

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The 4-Band Frequency Ranges In Multi-Band Processing

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AUDIO MASTERING STEP-BY-STEP

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MY MAIN RESOURCES

My Main Resources
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Who This Book Is For

Someone who wants to learn how to correctly master audio to commercial radio standards, either for themselves in their home recording studio or for their business.

You want to save a lot of money mastering your own album, or you want to have the necessary audio mastering skills to be able to earn $100,000 a year online like I do!

You want all the information needed to become a great audio mastering engineer, presented in a way that's easy to understand.

I wrote this entire book in simple plain English (layman's terms). I eliminated all words you never heard of and hi-tech jargon, so anyone at any level can understand and learn from this book as well.

You've invested hundreds, if not thousands, of hours into your music. If you're serious about it, now's the time to make a very small financial investment in this book so your music will sound the very best it can!

I wrote this book so you can quickly learn (in a matter of weeks) the techniques, tips, and secrets that took me over 17 years to learn!

"Learn from the mistakes of others. You can't live long enough to make them all yourself."
What You Will Learn From This Book

I love the saying, "If you give a man a fish he eats for a day, but if you teach a man how to fish he eats for a lifetime!"

Well, from this book you will learn how to professionally master audio for a lifetime! Then you can properly master your entire CD, your friend's CD, even open your own audio mastering business. If you're already mastering audio at your own recording studio, I'm sure you will still learn a lot from this book.

This book is a learning guide, filled with in-depth information. I wrote it from the perspective of a recording studio owner who's worked with over 7,500 satisfied clients. One reason I did this is because I wanted to cover only typical situations and scenarios you will experience while audio mastering, not a hundred extra pages of theory and worthless topics you'll never use. I included only the information you need to know.

Audio mastering is a highly technical field. There are 1,000's of different effects combinations and sonic scenarios. And when you first start out in audio mastering, you'll trial and error your way through hundreds of combinations for each song. It's very easy to get lost in technology and become over-whelmed.

In this book, I simplify the entire audio mastering process down to a handful of basic concepts and effects combinations, detailing only the ones you need to properly master music.

Also, this book was first released in 2017. It covers current mastering techniques using up to date gear. Since 90% of the current software plugins weren't available at that time, books written around 2007 or earlier are primarily analog gear using old school mastering techniques.
In this book, I explain:

- *What* your mastering goals are.
- *How* to use the processors involved in audio mastering.
- *When* to use them.
- *Why* you are using them.

I start out with basic terms, audio mastering laws and procedures before moving on to advanced sonic adjustment techniques and detailed step-by-step instructions. I not only use pictures, but also incorporate a few online sound and video references. **Everything you need to become a great audio mastering engineer!**

**Important Note** - Please read this book in its entirety. I try to repeat the most important concepts and tips, but sometimes I mention very important information *only once*. If you read only 75% of this book (or less), **you will miss out on a lot of great stuff!**

**About The Author**

Hello, my name is John Rogers. I'm a professional sound engineer and have been mixing and mastering at my Las Vegas studio [http://JRmastering.com](http://JRmastering.com), since 1999. I've worked with over 7,500 highly satisfied customers and mastered over 40,000 songs in every genre and style imaginable.

I have several thousand emails from clients that absolutely love what I've done with their music. **Everything written in this book is based on these real-world factual results.** Not on biased opinions, what a teacher or friend told me, what I read in another book, what another sound engineer thinks, how I'm feeling that day, etc. **My techniques and philosophies are based on over $1 million cash earned from thousands of highly satisfied clients.**
I've worked with several Grammy nominees and winners. I've also mastered many billboard top 10 songs in Europe, movie soundtracks, videos that have appeared on MTV, and dance/EDM music that has been played in dance clubs all around the world.

After receiving *thousands* of highly favorable email comments from my clients, most not believing what I achieved with their music, I realized I have great audio mastering skills and knowledge that I can pass on to anyone who wants to learn it.

**Learn in a matter of weeks what took me over 17 long years to learn! Let's get started!**

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**AMS Video Series - SPECIAL OFFER!**

I want everyone who purchased this book to become the very best they can at audio mastering. You *can* do it by “just reading,” but if you combine reading with video examples of me mastering songs live, video compression and EQ tutorials, and you can actually hear what I do and see how I make my adjustments, **this is the ultimate way to learn audio mastering.** You can even play these videos on your phone and just listen. *Note: Most of the people who have purchased the video course first, they ended up buying the book too. They go well together.*

That being said, I would like to offer you a **50% off coupon code that is exclusive only to those who bought this book**, so you can combine the two. You won't find this coupon anywhere else online.

Enter **50myx** for an amazing 50% off *(expires June 1st)*

*For details visit - [AudioMasteringSecrets.com](http://AudioMasteringSecrets.com)*
Testimonials

Here are a handful of testimonials from the over 7,500 clients I've worked with since 1999. I want you to know you'll be learning from an audio engineer that not only achieves amazing mastering results, but also displays a high-level of professionalism, patience, and speed. I do everything I can to get my clients's music sounding the very best it can! And treat each project as if it were my own. http://JRmastering.com

That is very kind of you to give me such detailed notes on ways I can improve future mixes and recordings.... I've been reading up on your mixing tips articles, and they are very informative, but having something that's personalized feedback on my mixes is beyond fantastic! I really want to thank you, John, again for everything, all the tips, all your time and work, you've got loyal clients here, I will certainly continue to always bring my business your way... Aaron F.

Every project I work on always goes to John! He has an awesome way of turning your track into something really great! I always suggest him to other producers. I will continue to use him on ALL my tracks, and I would recommend him for all of your projects! Jake W.

They sound great!! Thanks for finishing so quickly! Jared Reddick, Bowling For Soup

I don't now how you do it, but you are amazing! You are so dead on with your instincts and skills. I'm gonna drop $36 into your PayPal account. Keep the extra $30 as a tip. Go have a beer on me. An EXPENSIVE one! Wow, you have just blown me away with your work. I'm coming to you every single time, man. You are the tops. Give me a call anytime you need anything, and if I can help, I will. And when we gear up for our next CD, I'll give you a shout. Thanks again, man. You're just awesome. Felix
Here are answers to a few of the most common audio mastering questions.

What Is Audio Mastering?

I've seen a lot of different answers on the Internet to this simple question. Some were pretty technical and confusing.

A lot of people think audio mastering is only making all the songs on a CD a comparable volume level. Yes, this is done in mastering, but it's only one of many processes, not the only process.

The simple answer – Audio mastering is applying effects to a full song mix (on the stereo/main out bus), in efforts to replicate the sonic qualities of a well mastered industry standard commercial song.

In mastering, you're adding effects to the entire song as a whole. Effects such as compression, spectral enhancement, EQ, etc.

An example of a mastering process is adding bass to a song you're listening to on your car stereo. When you add bass, the entire song gets it. You can't add bass to only the vocal track. This is comparable to a mastering EQ process because it affects the entire song.
How Does Audio Mastering Compare To Mixing?

In music mixing, you're "mixing together" multiple audio tracks to create a song. Different tracks like the lead vocal, bass line, guitars, drums, etc. are being combined together. Then proper effects like EQ, reverb, delay are added to each track, along with panning and volume adjustments. In the final step, the mix is exported to create a song in the form of a single stereo interleaved .wav or .aiff file.

In audio mastering you're working with one stereo interleaved file. And, the entire song is affected by effects processes, not individual tracks.
At least once a week, someone uploads one song .wav file and says they want it mixed and mastered. **Well, you can't mix one file.** The word "mixing" is a verb and you need at least two tracks (files) to be able to mix them together. You need at least two of anything to be able to mix it together!

**What's The Main Goal In Audio Mastering?**

Your main goal in audio mastering is to replicate the sonic qualities of a well professionally mastered commercial song, in the same genre and style as the song mix you are working on.

Yes, everyone has their own slight preference adjustments like a little more bass, brightness, etc., but overall you want to be at least 80% similar to the current industry standard. The only exception is if a client specifically requests an old school master. If that's the case, then you're going to have to replicate the sonic qualities of songs from a past era.

Once every few months, a client tells me they don't want their songs to sound like songs on the radio, because they don't listen to the radio. That's a good reason. Ha! Then they give me a few crazy mastering requests like, "Make my song's volume level -8db below industry standard, or keep the song real muffled, etc."

My two favorite requests happened while writing this book:

**Genre Hip-Hop, "I want my CD to sound soft and analog."** Ok, you want me to master the first soft analog Hip Hop CD? I talk more about this at the end of this article.

**Genre Heavy Metal, "Can you make my CD soft and warm?"** That's like saying, "I want an ice coffee, but can you make it hot?"

When this happens, I pretty much refuse these requests. Here's why.
Every song I master is at some point going to be played along with other professionally mastered commercial songs. If the song is very poorly mastered and way off industry standard, it will be painfully obvious to any listener when played right after a professionally mastered commercial song.

When I first started in the mastering business, I did whatever crazy request a client gave me, they approved the masters and paid the balance. A job well done. Or was it?

The problems came weeks later after their family and friends listened to these ridiculously poor masters. That's when I got a nasty "You don't know what you're doing" email and a demand for a full refund! Even though I gave them exactly what they asked for. This is also why the customer isn't always right when it comes to audio mastering.

My Point Proven - While writing this book, a guy uploads 20 hip hop songs. I master an initial preview (like I have for 10,000 other hip hop songs) and upload it for him. He tells me he and his producer want the songs warm and analog sounding. I tell him no one has ever requested warm analog hip hop songs in my 17 year career (which should mean something). They don't care. They know more than I do about audio mastering.

So, I send him another preview with the bass up and brightness cut, a nice warm hip hop song. Also, I noted this is wrong for hip hop. He tells me its great, that's exactly what he's looking for! I proceed to master all 20 songs this way (which I mention in this book not to do). Ha!

The guy got all 20 warm analog hip hop masters, but I didn't hear from him for about two months. Then I get an email requesting a refund of his 50% deposit, because he and his producer don't like the warm analog hip hop songs. Really? I'm so surprised they didn't like songs that have the OPPOSITE sonic qualities for the genre! Shocking!! Fortunately, since the client went past the 30 day money back guarantee, his 50% was kept as a non-refundable labor fee.
The general public is used to, and expects, the sonic qualities of today’s music. This is why your goal is to try and replicate it. If you don't, they will know it. PERIOD!

Why Do Songs Need To Be Mastered?

I've seen this question on the Internet many times. The answer I always see is "Because all songs on the radio have been professionally mastered, yours should be too." This is a true fact, but not an answer.

Yes, your songs need to be mastered because you want them to have the same qualities of a well professionally mastered commercial song, but this can only be achieved by using effects on the stereo/main out bus. Which is what mastering is (using effects on the stereo/main out bus). Many critical processes can only be done in mastering.

Here are couple of examples of why a song needs to be mastered:

◆ **Do you want to be able to play your song loud without it breaking up?** Then you need mastering. **In mastering,** you can compress the entire song as a whole (or in separate BANDS) so it doesn’t peak too hot or distort during loud playback. Compressing a song in mastering also kind of meshes everything together. **In mixing,** you can only compress individual instruments like the bass, vocals, etc. This does nothing for loud playback nor does it mesh the song together as a whole.

◆ **Do you want your songs to be as loud as the songs on the radio?** Then you need mastering. **In mastering,** you can use a loudness maximizer and make your songs as loud as needed without distorting. You can't do this in mixing just by cranking up your levels. You will distort before reaching your desired loudness.
This question is kind of like asking, "Why does my cake need to go in the oven?"
If you want it to be a real cake, and be similar to other cakes, the oven is the final
process to get it there. You don't have a cake unless it goes in the oven! You only
have raw mixed ingredients. The oven meshes everything together to be like other
cakes.

Can Anyone Become A Great Mastering Engineer?

I would say YES, most people can become a great mastering engineer. I say this
because most of the mixes I receive from clients are pretty good and I know the audio
engineer (the band member with a computer) has only minimal training. He could easily
be great if he put a little more study and practice time into it. And if he had this book
to teach him what took me over 17 years to learn! Ha!

The bigger question is, how much time and effort are you going to put in? You
know, everyone can be in good physical shape, or at least in decent shape. The choice
is yours.

But, is there going to be a diet and exercise plan that's followed daily for months, or is
everything going on eBay or craigslist a couple weeks after starting? It's up to each
individual to do what's necessary to achieve their end goal.
You get out what you put in, even when it comes to audio mastering. This book gives you the knowledge and tools you need to become a great audio mastering engineer. And you'll learn a lot faster than I did. But it's still up to you to read this book in its entirety and put in the practice time.

How Long Does It Take to Master A Song?

I would say someone just starting out in audio mastering might take an hour to A/B compare a song and replicate it. This time includes reviewing the song on different mediums like a car stereo, headphones, small speakers, etc.

As you improve with practice, you can quickly get it down to 30 minutes per song or less. A highly skilled audio mastering engineer can master a song in 10 minutes. At least that's how long it takes me. Note - I ALWAYS split my audio mastering into two separate sessions so I can finalize on fresh ears. I talk about this later in the book.

Some of you might think 10 minutes to master a song is too fast. It is if you're just starting out. You will need more time to A/B compare and to test out different settings through trial and error. But in time, you'll learn how to quickly diagnose what a mix needs and what to do to achieve your desired results.

Now (after many years), if I spent 10 minutes or 40 minutes to master a song, my results would be exactly the same. An extra 30 minutes would not make my masters any better.

A good non-music example would be tying your shoes. The first week you learned as a child, it might take you a minute to tie each shoe. And you still might not get it right! Now, you can tie both shoes to perfection in 5 seconds!
If you spent an extra two minutes tying your shoes, could you do a better job? No. Whatever you can do in five seconds, the results will be exactly the same as if you spent two minutes.

The same goes for a highly skilled pro in audio mastering.

Should Your Mix Sound Close To A Mastered Song?

This section is basically a tip for those of you working with clients or if you plan on submitting your mixes to a mastering engineer.

DEFINITELY 100% NO!!

I've actually seen a few sound engineers online say the opposite. They say to make your mix sound as close as possible to a finished master. "All you want the mastering engineer to do is make the song louder." These comments are based on common sense and theory, NOT on real world experience working with thousands of clients (like I have)!

If the only thing your songs really needed was for the mastering engineer to make them louder, why not just make them louder yourself and save the money? Duh! No, pay someone $500 to do it in 15 minutes. I want that job!

Here's why you don't tell clients to partially master their own songs:

1. Because they're paying an experienced mastering engineer to properly do the entire job.

Here's a non-music example. Before you get your car detailed, do you clean it spotless inside and out, but leave only the windshield dirty, so that's all the car detailer has to do is wash your windshield and he's done? NO! That doesn't even make any sense.
You're paying for a car detail and you want every process that comes with it. That's their specialty and you want their expertise in every area, not just the windshield washing process. The same goes for audio mastering.

2. Mixing is not mastering. For a song to sound like a commercially mastered song on the radio you MUST use effects on the stereo/main out bus. When you do use effects on the stereo/main out bus you are mastering not mixing. And you're not supposed to partially master your songs if they're going to a mastering engineer. Read the paragraph above again.

3. And the #1 reason is THEY CAN'T DO IT! They don't have the knowledge, skills, replicating abilities, etc. That's why they're looking for a mastering engineer to begin with!

I explain to my clients to submit a mix that's clean, but slightly dull with lower overall volume levels. That way I can bring everything up to where it needs to be. Nothing on the stereo/main out bus.

In the past, before I was giving this info, do you know what my clients would send me? I would say half the submissions were partial masters where the clients were trying to make them sound radio ready. The problem was they were TERRIBLE! Way over-level, distorted, super bright and/or super bass, way too much compression, etc. Many times they had everything wrong!

In a perfect world, yeah send me a song that's already mastered and I don't have to do anything to it. But I know from years of experience working with actual people that this is a very unrealistic request. Most can't do it, that's why they're looking for a mastering engineer to begin with!

I've also heard the comment that mastering is taking all the songs on a CD and making them all sound similar. Really? That's all mastering is? So, I'm supposed to take the best mix on the CD and make all the other songs sound just like it? That doesn't even make any sense! What if the best mix on the CD sucks?
What if someone gives me only one song (which happens daily)? It can't be mastered because there isn't an entire CD?

I make every song on the CD sound as close as possible to a commercial industry standard song. Each song is mastered to sound the very best it can, regardless of past or future songs on the CD. Also, every song is mixed differently and requires different actions to achieve this. After I do this, all the songs on the CD are comparable in every sonic area.

Audio mastering is taking a mix and bringing it up to commercial industry standards.

Does A Radio Ready Mastering Standard Exist?

Here's another popular question I see online, always with the wrong answer! "There's no such thing as radio ready mastering!" REALLY?

Let me explain how this works. If a record label, after paying them millions, submits a new release to the radio stations and it's very poorly mastered (distorted, over-level, super bright, heavily compressed) it will be REJECTED. They will not play it on the radio. They'll tell the label the quality of the song is terrible and will request a re-master (maybe even a remix).

Technically, it would never even go this far because a record label executive would reject the poor master and get it corrected before the radio station even heard it.

Two Facts -
1. Some songs aren't ready for radio play and are rejected by management for poor quality reasons. This happens very often in the music industry.

2. Songs that are playing on the radio, are radio ready!

If songs are rejected for radio play, then there has to be a radio ready mastering quality standard. There it is! There's your answer!
Some Of The Terms I Use In This Book

Here's a list of some of the terms and abbreviations I commonly use in this book. You're probably familiar with most of them, but just incase you're not I included some here.

**Sonic Qualities** - A song's brightness, boomeness, bass volume, thickness, stereo width, compression amount, and overall loudness are all examples of sonic qualities.

**Four Main Frequency BANDS** - LOW, LOWER-MIDS, UPPER-MIDS, HIGH.

**Db or Dbs** - Is an abbreviation for decibels. Decibels are to sound what inches are to distance.

**Q Setting** - The frequency range setting (bandwidth) on an Equalizer. Narrow Q (16), Medium Q (4), Large Q (2).

**Cut Or Cutting** - I usually use this term when I talk about decreasing/lowering EQ volume.

**Gain Down** - When I use the term *gain down*, I'm saying to use the processor's GAIN function (or your DAW’S highlight and gain function) to *lower* the volume.

**Gain Up** - When I use the term *gain up*, I'm saying to use the processor’s GAIN function (or your DAW’S highlight and gain function) to *raise* the volume.
**Cut The Top Off** - Some call it *brick wall limiting*, but with a high threshold. This is done with a **Multi-Band Compressor** set at a high THRESHOLD 80% using the highest compression RATIO 30:1 (infinity) or heavy 8:1 (if this achieves your goals). This technique is used so you'll be able to crank a song up loud without it breaking up or burning your ears.

**Thin The BAND** - A compression technique I use to remove a portion of the audio content in a BAND. A THRESHOLD of 60% and a RATIO of 8:1 will thin roughly 25% of the BAND. Changing the RATIO to 30:1 will thin 40% of the BAND.

**Slight Compression** - A 50% THRESHOLD with a roughly 4:1 RATIO.

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**What Is Headroom And Dynamic Range?**

In order to produce a good master, a mix needs proper headroom and dynamic range.

**WHAT IS HEADROOM?**

Headroom is the distance *between* an audio tracks peak level (when the meter is at its highest) and 0 level on the output meter.
As a song plays, the output meter on the stereo/main out bounces up and down with the music. You can see how high (loud) an audio track peaks by looking at this meter. Anything peaking over 0 level usually means distortion, so at all costs stay below 0 level.

**How far is your peak loudness below 0 level? That's the simple definition of what headroom is.** So, if your meter is peaking -3dbs below 0 level, you have +3dbs of headroom. If your meter is peaking right at 0 level, you have NO headroom.

Note - +3dbs to +6dbs of headroom is the standard recommended amount, but many times a song with more or a little less headroom can still be mastered with no problems. But, it really makes no sense to give a mastering engineer a mix with 0dbs of headroom and risk the chance that it's slightly distorted. There's no reason to do it because overall song volume is done in the mastering process, not in mixing.

**WHAT IS DYNAMIC RANGE?**

Dynamic range is the area between the peak level (when the meter is up) and the low level (when the meter is down).

Roughly, 3dbs to 6dbs of movement between the high and low meter level is a typical amount of dynamic range, but this does depend on the genre of music.

Note - One problem you want to watch out for (if you're mixing your own music) is dynamic range between song sections. You don't want a +10db or more difference between the verses and choruses. This creates a mastering problem because the verses will never be loud enough compared to the rest of the song. Roughly a 6db difference is as high as you want to go.
Why Does A Mix Need Headroom And Dynamic Range?

In one sentence, it gives the mastering engineer more room to work with.

If I compared a hair stylist to a mastering engineer, hair length would be headroom. If someone came in with 18" of hair, the skies the limit as to how she could style it. But, if they came in with only 1" of hair, her style options are very limited. In audio mastering, no headroom limits your options.

In the audio mastering process, a series of EQ boosts and cuts are performed. Most of the time you're going to need to boost something, even if it's only a little +2db boost at 100hz. Well, if the song is already at 0 volume level or higher, you might not be able to make a necessary boost without distorting.

Also, if a song has very low dynamic range (the meter barely moves) it's probably over-compressed. Which means it could lack punch, power, clarity, or could even limit EQ options. You want your song to have some dynamic life!

I want a song mix with some headroom and decent dynamic range. I want to EQ it as necessary, I want to compress it as necessary, I want to be able to set the overall volume as necessary, and I don't want to work with a distorted mix.

How To Create Proper Headroom In Your Mixes

To create a mix for mastering with proper headroom is pretty simple. In mixing, never let your levels go over 0db on ANY of your individual instrument or vocal tracks. If you do this, 99% of the time you will be under 0 level on the stereo/main out meter, which leaves you some headroom (not necessarily +3db or more but at least +1db).

Don't compress your tracks heavy and you'll usually have adequate dynamic range too.
That's usually all you need to do to achieve proper headroom, but there are always exceptions. **If most of your tracks are HOT and peaking right at 0 level, your song mix could be at 0 level with no headroom.** It won't be distorted (if not recorded distorted), but you still won't be leaving the audio mastering engineer much to work with. If this is the case, after finishing your mix, link all the channel faders together and just pull them all down a few dbs. Now you have headroom.

Remember, **loudness maximization is done in mastering not mixing.** **DO NOT** keep raising your faders way over 0 level in an attempt to match the volume level of your favorite song. This will distort it. Yes, you matched the volume level, but now you have a scratchy distorted mess!

**What Is A/B Comparison Listening?**

The title pretty much explains it. **You're listening back and forth between a commercial industry standard reference song and the song mix you're mastering, comparing sonic qualities between the two.** How does the song you're mastering differ from the commercial reference song?

**As you master a song, your goal is for it to sound more and more like the industry standard reference song in every sonic area.** You continue listening back and forth, while adding effects until you come as close as possible to replicating it. I say **as close as possible** because if the mix you're working on is very poor, you won't be able to replicate it.

**A/B comparison is "trial and error testing against the reference track."** That's what you're doing in effort to match it.

It's funny how this works, but after you do this a while, the industry standard reference track is in your head! You know *exactly* where each sonic quality is supposed to be and how to quickly apply the effects needed to get your master there. When you reach this point, this is when you can master songs a lot faster.
What Are Mid-Side Effects Processors?

A Mid-Side Effects Processor lets you target two different parts of the stereo field. The outside and inside (center) of the stereo field.

These two ranges are preset and you don't have the option to change them, nor do you know specifically what the ranges are. From my experience, I would say CENTER usually covers roughly the range of L70 to R70. The SIDES are L to L71 and R71 to R.

WHY WOULD YOU NEED THIS? WHEN WOULD YOU USE THIS?

1. I use a Mid-Side Processor mostly to check the stereo field of a mix. I use the Mid-Side 5-Band EQ and solo the SIDES. If I don't hear much musical content on the sides (or only light reverb), the mix has a weak stereo spread and is basically a mono mix. I then either ask for a remix or boost whatever is on the SIDES (which usually doesn't achieve much).

   *** VIDEO EXAMPLE ***
   MID-SIDE 5-BAND EQ PROCESSOR STEREO FIELD EXAMPLE
   http://LearnMixingMastering.com/midside.html

2. Sometimes a client mixes their stereo guitars (or background vocals) very loud and they overtake the entire song. A Mid-Side 5-Band EQ can easily fix this problem by cutting only the SIDES down a few dbs. Or by boosting the CENTER.

3. If the lead vocal is buried by guitars and the guitars are stereo panned well, sometime a Mid-Side 5-Band EQ boost around 2-3k in the CENTER will bring the vocal out. You could also combine this with a SIDE cut.

   Note - For mastering, I only use a Mid-Side 5-Band "EQ," NOT any other Mid-Side Processors. And when I do use it, it's only for the few instances I mentioned above.
I'm going to give a few brief recommendations here. I don't want to get too much into buying hardware and software. I'd rather focus more on how to master music.

If you want to read more on my music gear recommendations checkout my forum – http://LearnMixingMastering.com/forums.html

What Hardware Do You Need For Mastering?

Here's the basic hardware you need to master music:

A Computer (preferably a quad core or faster)
An Audio Interface (which contains a mic preamp and instrument cable inputs)
Studio Monitor Speakers & A Sub-Woofer
An Audio Control Unit To Control Speaker Volumes (optional but it makes life a lot easier)

If you're looking to get started real cheap, you could make a decent hardware only set-up for about $1,500. High-end hardware will run you roughly $3,500-$4,500. Still not too expensive.

What Software Do You Need For Mastering?

If you’ve mixed songs in the past, you can more than likely use that same software for mastering. As long as you can add effects to the stereo/main out bus, you're good to go.
DAW (DIGITAL AUDIO WORKSTATION) SOFTWARE

Top and popular DAW software like Pro Tools, Cubase, FL Studio, Logic, Sonar, Reaper, Ableton, etc. you can definitely master with all of these programs. I personally use Cubase.

SOFTWARE PLUGINS & MASTERING EFFECTS HARDWARE

The DAW software I mentioned above all comes with software mastering effects you could use (on the cheap). I personally don't use any plugins that comes free with the Cubase, but that doesn't mean they're not high quality. I don't know. On second thought, I do use the de-esser that comes with Cubase.

If you know how to master very well, you don't need thousands of dollars in mastering software and hardware to get great results. And after reading this book, you will know how to master very well!

Which Mastering Software Plugins Do I Recommend?

If you want to read more on my software plugin recommendations checkout my forum – http://LearnMixingMastering.com/forums.html

When it comes to effects plugins I love Universal Audio (UAD) plugins, and Waves too. Hardware, I like SSL and Manley products.
IZOTOPE OZONE MASTERING SOFTWARE

I believe iZotope Ozone is in a category by itself because of the number of high quality effects you get at such a great price (around only $200). Not to mention the great sound quality. iZotope Ozone is a single plugin that chains together 6 of the 8 main mastering effect processors. I personally use a couple of the Ozone plugins during mastering, but if you used all of them I wouldn't say that's a bad thing.

Check it out here - http://BestMasteringSoftware.com

SHOULD YOU BUY OZONE?

I would definitely say, "YES!" It's relatively inexpensive and even if you don't use all of its mastering processors, it's a MUST HAVE learning tool that will help you see what an effect processor actually does to an audio file. In Ozone, as the music plays you can see the audio file moving in real time. It's very easy to compress just the peaks of an audio track because you can see them. This also helps you learn compression ratios and thresholds through visualization.
Also, Ozone has **Mid-Side EQ**. This separates the middle portion and sides of the stereo field. What can you do with this? Its great for checking if a song mix is really in stereo, and how much.

**Check it out here - http://BestMasteringSoftware.com**

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**Analog Mastering Equipment vs. Digital Software Plugins**

I started my career using the old analog stuff, since that was the only option. I incorporated digital software plugins as soon as they became available, but it took many years before computers were fast enough to run them in real-time. And also before they started making very high quality plugins. Now, I use mostly digital software plugins, but I do have analog hardware if a client specifically requests all analog.

**WHICH IS BETTER?**

**First off, technically EVERYTHING is digital!** An mp3 and a CD is digital information that's decoded when played by a player. A rock album recorded in the 70s is *all* analog. When this album is converted to a CD, you're hearing a *digital* copy of the *analog* sound.

I guess now when someone says *analog*, they're referring to that warmer old school sound (not necessarily the gear), because you can achieve that same warmer sound using all digital software plugins that emulates quality analog gear.

I've read a lot of opinions on this. Older sound engineers in their 60's have hundreds of thousands of dollars worth of analog equipment they bought in the 70's and 80's. That being said, that's all they've ever worked with and they're not selling their gear for peanuts and switching over. Many also refuse to learn the new digital software. You can't teach an old dog new tricks, and their *biased* opinion is that analog is by far better than digital software plugins, though many have never really used them.
SO, WHAT'S THE UNBIASED TRUTH?

Some of the expensive analog hardware from Manley, SSL, UA does have a unique sound you can't explain. Also, analog gear can give vocals that lush soft sound that a cheap digital preamp can't. But now they make software replicas of all the old and new analog gear, and it sounds great!

IT ALL BOILS DOWN TO THE END RESULT!

Do over 7,500 clients love your work? Did they pay you hundreds of thousands of dollars? For me, the answers are "yes and yes." They think mastering primarily with software plugins sounds AMAZING! Those are over 7,500 opinions right there, backed by money!

The fact is, if you used only quality software plugins to mix and master an entire CD project, and knew how to use them very well, the average person would NEVER be able to tell that you didn't use $100,000 worth of analog gear. Your masters would sound AMAZING and that's all that matters.

Now, maybe an 80's old school audio engineer would notice the difference, but he's not buying your mp3s, so who cares? And the only thing he'll notice is the songs weren't mastered using all analog gear, but that doesn't mean they don't sound as good (or even better). This is like saying you know the difference between Classic Coke and Pepsi. That doesn't make one better than the other.

Also, so much of the music on the radio uses digital software effects that consumers are used to it and prefer that sound.

This all being said, save yourself $100,000 and go primarily software plugins. No one but the old-timers will know the difference, and the new generation prefers it!
To purchase the entire 184 page book for **only $6.89**, please visit AudioMasteringSecrets.com.

Thank you for your support!

I wish you the very best with your music career.

Best Regards,

John Rogers
Here are a few of my main resources and my websites -

**AUDIO MASTERING SERVICES** - Here's my online recording studio, JR mastering. If you'd like me to personally master your next project, I would be very happy too!

**MY TUTORIAL WEBSITE** - Enroll in my online video courses, checkout my latest books, products, and much more! Note – I will have an excellent mixing book and video series coming soon. [http://LearnMixingMastering.com](http://LearnMixingMastering.com)

**My MIXING & MASTERING FORUM** – Stop by and ask a question, upload a song for review, or just read some of my posts. [http://LearnMixingMastering.com/forums.html](http://LearnMixingMastering.com/forums.html)

**BEST WEBSITE HOSTING** - I've been with this company for all of my websites since 2005, and my experience has been EXCELLENT! Great prices, superb customer service, and better than 99% uptime. Under $5 a month to host your website!! [http://BestMusicHosting.com](http://BestMusicHosting.com)