

Sublyme Records, LLC

*Mastering
And
Acoustic Recording
Specialists*

*How to Prepare Your Tracks
for Mastering*

Introduction

So you're looking to have your music mastered. Congratulations! This is the final step in making a truly professional sounding product capable of standing out in today's market and being ready for radio airplay.

To many people, mastering is considered a black art full of mysticism and unknown variables. **It shouldn't be!** Mastering is an art and a science both, but as with any art and science, there are methods and reasoning behind everything that is done.

If you read this guidebook and work with quality engineers, you'll find that mastering your recording is a painless and even fun process. You'll know what to look for when choosing your mastering engineer and what to do with your tracks to make sure they are ready for a mastering engineer to polish them up.

Most of all, you'll be able to make educated, informed decisions which will help to make your recordings the best they can be.

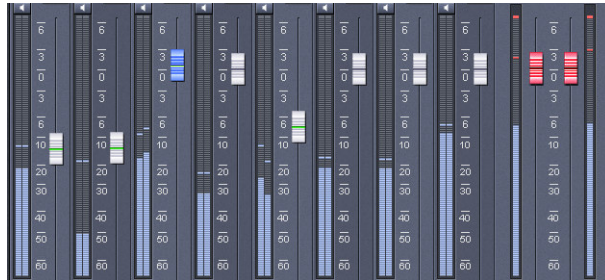


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Choosing Your Mastering Engineer

The Basics

It seems that everywhere you turn today, everyone is doing some kind of mastering. Just about every recording studio offers to master your recording for you right after they record it. CD Replication companies are offering mastering as a part of their packages when they make your CDs and then there are all sorts of Mastering Studio advertisements littering the internet and your favorite recording or musician magazines. So, how do you sort out quality mastering engineers from mastering hacks who will do little more to your recording than make it loud and bright?

First, we have to define what mastering is.

Mastering: (v)

The process of taking recorded material of any format and allowing another set of trained ears to listen, evaluate and correct for market consistency and overall quality.

That's it in a nutshell. Getting another set of *trained ears* to fix any issues with your recording. In the mastering process a good recording can be transformed into a great recording; a great recording can become awesome!

Commonly, this is done using:

- Equalizers
- Compressors
- Limiters
- Reverb
- Various other processors

So, it should be easy, right? Everyone has those things lying around their studio so any studio should be able to master, right?

Not so.

The gear that mastering engineers (or MEs for short), is highly precise and usually designed for mastering. Gear that studios use are usually not near as precise and are usually only designed for mixing.

Far more important than any of the gear listed so far though is the monitoring chain. A ME will have a monitoring chain made up of large, full-range speakers (and I mean LARGE – not studio monitors or “near-field” monitors but big, floor-standing monitors.) Common speakers used for mastering are B&W, Dunlavy, NHT, Paradigm and JM Labs. These speakers have a few things in common – they’re BIG, they’re accurate, they’re full-range (big woofers, clean sounding tweeters), and they’re expensive.

Also, the room that these speakers go in is as important as or even more important than the speakers themselves. A large room with professional acoustic design and as few extraneous objects or furniture blocking the sound waves as possible is preferred. Large mixing consoles, racks of gear, loads of furniture and untreated rooms make it impossible to actually *HEAR* what your mix sounds like.

True Story:

I recently visited a rather famous and common facility for independent artists. One which claims to do mastering for their clients. The other services they offer are great, but I was curious about their mastering.

*I was interested to see that the mastering engineer was sandwiched into a 10x10 box with absolutely no acoustic design performed on the room and everything used in the mastering process were computer plug-ins and he was using near-field monitors! **YIKES!***

Then, I listened to a few of the discs that they had mastered and I understood. The mixes sounded boxy and bloated with muted high-frequency and a lack of stereo depth. Unimpressive, but exactly what I expected.

The Gear!!!

Good studios pride themselves on the quality of their gear. Great vintage microphones, boutique microphone preamps or the \$250,000 mixing console can really bring clients in.

The same could be said for mastering studios.

Good mastering gear costs a LOT of money. There are reasons for that too. For example – the knobs you see on most studio gear are called attenuators. They cost about 12 cents each. However, these knobs are far too imprecise for mastering gear which must be as accurate as humanly possible. For mastering grade hardware, stepped switches are often used instead of knobs. These switches go for over \$100 EACH!

Very rarely will you ever find a recording studio which can afford both great recording gear and great mastering gear. Instead, you'll more likely find that a recording studio has good recording gear and then tries to use that to master your mixes. And remember, you're not going to find those large, dedicated mastering suites with huge, full-range monitors in just about any studio.

Plug-ins-

Go to just about any modern recording studio today and you'll see the engineers recording onto a computer or using a computer to edit and mix your project. With the advances we've had in computers in the recent years have come some amazing breakthroughs in computer-based audio. One of the biggest breakthroughs has been the "Plug-in."

A plug-in is a software version of an effect such as compression, limiting, EQ, and various other devices. Many of these plug-ins are great and can do wonderful things. However, more often than not, they are the biggest culprit in the destruction of mixes and masters and the biggest manufacturer or lazy and ignorant engineers. To use a compressor in the past, one had to know what all the knobs did. With this knowledge came the ability to make gear do exactly what you want it to. With plug-ins, you get presets. Sure, you can tweak the knobs just like you used to be able to – although, they're virtual knobs. But the majority of plug-in users simply find a preset they like and then turn it on. (My favorite preset name was "Big Funky Bass.")

So what's wrong with that?!? Nothing, I guess. As long as you don't mind some programmer in a country you can't even pronounce deciding what your mix should sound like!

Plug-ins are not evil. That's right, I said it. Some plug-ins are very, very good indeed and do things to audio that hardware could never have accomplished. A good digital brick wall limiter is a great example. Used correctly, it can smack down some fast sounds (transients) that would have otherwise caused clipping without affecting the rest of your music. How cool is that???

There's nothing wrong with choosing a mastering engineer who uses plug-ins. However, my only advice regarding plug-ins is – try to avoid anyone who ONLY uses plug-ins. While some plugs are very good, some things just can't be done with 1's and 0's and need some good old fashioned electricity running through them!

Software-

Chances are, if you're having your music mastered to CD, your ME will be using software and a computer. This is a good thing! Digital audio is really not the cold, sterile stuff of 80s legend. BAD digital is – Good digital is not (there is a difference... a BIG difference.)

Where MEs of the 70s and 80s would have to splice tape with razor blades and splicing tape and simple edits could take hours or even days, the computer has truly created a time-saving marvel!

So, the software choice should be simple, right? *ProTools*. It's what every professional studio uses; therefore, that's what you need on your master, right?

Ha!

ProTools is great software (especially their HD setup), but it is NOT mastering software. I repeat – ProTools is NOT mastering software.

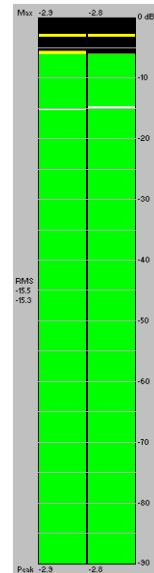
ProTools cannot:

- Create PQ lists
- Place Track Indexes
- Place CD Text
- Place IRSC Codes
- Burn CDs
- Burn DDPs (other files used by large replication plants)
- Do complicated cross-fades

Programs such as:

- SADiE
- Sequoia
- WaveLab
- Pyramix
- Sonic

can do all of the above and more. Furthermore, they are designed as mastering software from the ground up. The workflow is quicker, easier and smoother and makes the whole process quicker and easier (which translates into less expensive for you!!!)



The Engineer –

So, by now, we know that hardware and software are important. Of course the mastering room and the monitoring chain the engineer uses are even more important. However, the *MOST* important ingredient is the Mastering Engineer himself (or herself).

- What kind of musical training and background does he/she have?
- How long have they been doing this?
- How good do they listen?
 - Not just to the music – a very important part, but to you – the client. Your mastering engineer is putting the final touches on your work – trust them but at the same time, it is your work – you have final say.

Good engineers are good musicians. They should be adept at music theory, basic (or even advanced) ear-training and music on the whole.

Don't be afraid to get to know your mastering engineer – most of them don't bite. Ask if you can sit in on the session while they are mastering your work. If not, ask "why not?" Usually, a lesser quality mastering engineer will use excuses like "I use a proprietary piece of hardware" or "I have a secret method to mastering."

If you believe that, then there's a bridge in Brooklyn I'd like to sell you.

Remember, there is no dark art to mastering. It's basic physics, science, logic and music. Anyone who claims otherwise is trying to dazzle you with B.S. rather than impress you with their real work.

I don't make it a habit to refer business elsewhere, but below is the names and contact info for several good Mastering Engineers or Mastering Studios throughout the US. This is not a complete list; there are tons of good engineers. These are just ones that I either know personally or know their work.

Sublyme Mastering (gee, go figure I'd list myself first!)

www.sublymerecords.com

Airshow Mastering

www.airshowmastering.com

Massive Mastering

www.massivemastering.com

Gateway Mastering
www.gatewaymastering.com

Turtletone Studio
www.turtletonestudio.com

Sterling Sound
www.sterling-sound.com

Digital Domain
www.digido.com

I must humbly apologize in the fact that I have lumped myself in here with some of the greats in mastering. I am very pleased and proud of the work that I do, but many of the other engineers (if not all) are world-class engineers. The fact is, I never mind losing business if I'm losing to the likes of these guys!



Getting Your Pre-Master Ready

Getting your pre-master ready is a pretty easy step, but it's often the most messed up when you get right down to it. There are several simple Do's and Don'ts involved in preparing your pre-master. We'll cover as many here as we can, but consult your mastering engineer for additional details.

Much of this has as much or more to do with the work that your recording engineer is doing on your recording than what you do, so feel free to share this document with him or her.

For additional reading on the following topics, I strongly recommend the following book:

Mastering Audio, the art and the science by Bob Katz (Legendary Mastering Engineer) available on Focal Press at places such as Borders or Waldenbooks also available at Bob's website – www.digido.com

The Do's –

Do:

- Get your mix sounding as good as you can in the mixing phase.
 - We have a phrase in ME language – “You can't polish a turd.” If it sounds bad in the mix, there's only so much we can do.
- Make back-up copies of all your work
- Get organized ahead of time
 - Fill out the pre-master questionnaire
 - Apply for ISRC codes (Free and easy – Google ISRC)
 - Get your copyright licenses if necessary
 - Know what you want out of your recording
- Make sure that all of your mixes are clean and that there is no excess noise at the beginnings or ends of your tracks (like an open mic picking up ambience before your song starts.)
- Have an order for your tracks in mind
 - We'll likely talk about this anyway. We can help you arrange your tracks so they fit logically on the CD
- Make sure there is plenty of room for growth on the CD – in other words, don't make it too loud. We can get it loud in the mastering phase – this should NOT be done in the mixing phase. (See “Don'ts” Number 1).

The Don'ts –

Don't:

- **Use a maximizer or limiter on your tracks to make them loud before bringing them to a mastering engineer.**
 - For the love of God, please don't! Once this is done, it can't be undone. If you bring your mix "squashed" to a ME, he or she will likely tell you to take it back and remix it.
 - If you see your recording engineer squashing your mix with a limiter or maximizer, tell them (or ask them nicely) to stop.
 - Chances are our limiters are better than yours or your recording engineers. Not meaning to sound rude, but it's true. We also know how to use them to keep you from getting that pumping and breathing sound associated with bad limiting.
- **Worry about getting a huge, polished sound in the mix phase.**
 - We do that in mastering.
 - Just make sure that your mix is good with good instrument separation and clean sounds (or dirty if that's what you're after).
- **Bring a mono track**
 - This is so common it's not even funny. People are doing a lot of production and recording today using virtual instruments. If you don't pan your virtual instruments in the mix, they will all come from dead center. If you bring a mono track and expect us to make it big, you're going to be disappointed. Plus, we'll probably send it back for a remix.
- **Do your own fade-ins and fade-outs.**
 - This is another biggie. Let your mastering engineer do your fade-ins and fade-outs. For one, our software and/or hardware is better at doing them. Second, on our dedicated monitoring systems, we can actually hear the lowest ends of the fade-ins and outs – something you just can't hear in a recording studio – period!
 - The best thing to do is to leave 2-3 seconds of dead air at the beginning of each track and let the end of the track ring out. Then, let us know what kind of sound you want from your fade – short and abrupt or medium/long and smooth.

Questions?

Contact us directly:

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Or check out other resources:

Mastering Forum – Recording.org
<http://www.recording.org/forum-20.html>

Bob Katz's Website –
<http://www.digido.com>

Manley Labs' Website –
<http://www.manleylabs.com>

Equipment List

Software:

- Sequoia DAW
- UAD-1 Precision Mastering Bundle
 - Precision EQ
 - Precision Mastering Limiter
 - Precision Multi-band Limiter/Compressor
 - Pultec Pro Equalizer
- Waves Restoration Bundle
- Wave Arts Power Suite 5
- Magix Audio Cleaning Lab 10

Digital:

- Lynx Aurora 8 AD/DA Converters
- Lynx AES 16
- Benchmark DAC-1 Precision DA Converter
- Presonus Central Station with CS-1 Remote

Outboard Analog Signal Processing:

- Manley VariMu Mastering Limiter
- Crane Song Ibis Mastering Equalizer
- ART ProVLA custom modified with GoldPoint stepped switches, Burr Brown OpAmps and custom matched Mullard Tubes
- Millennia Media HV3-D 8 Channel Microphone/Line Amplifiers

Monitoring Chain:

- Rotel RMB-1075 Multi-Channel THX Ultra Certified Amplifier
- NHT 2.5i Monitors
- Dynaudio BM15 Monitors
- Hafler PA3000 Amplification
- MIT Professional Interconnects

Acoustic Treatments:

- Auralex
- Acoustics First
- RPG
- Owens Corning

Gear list is subject to change. We are always adding gear!