

# Sound Art Mastering

In the Cowichan Valley



## **The Two Most Important Components of a Great Mastering Facility? The Room and the Monitors!**

Sound Art Mastering studio is a detached 900 sq. ft building with a 14-foot gable ceiling. It is situated in a very, very quiet rural area backing onto a forest. The sound-insulated outer walls have a dozen interior sound absorptive panels specially placed to optimize the room's frequency response. The corners have three-foot-deep bass traps. The speakers have been placed in the optimal position to provide the best sound-stage accuracy and accurate frequency response. And with our Genelec 8361A calibrated monitors, what you hear is exactly what was recorded. We use a hybrid mastering approach, integrating the best D/A and A/D converters and digital plugins with some of the finest outboard analogue processors available.

The International Telecommunications Union ITU-R BS.1116 is a quality recommendation for broadcasting services describing high precision audio listening conditions for monitoring applications such as recording studios, post-production, and audio editing. The recommendations use a series of standardized acoustic measurements to provide a rating for music production facilities. These in-depth room and system measurements include full range frequency response accuracy, low frequency extension, early vs late sound at the listening position, time of flight accuracy, early reflection structure, reverberation times, modal influences, speaker boundary interference response, and operational room response curve. The compliance summary provides a score out of 100% with 70% and above being acceptable and 90% and above being excellent for high quality music production.

Our mastering room has a 100% operational room response rating at the listening position.

# Why Should I Use a Professional Mastering Studio?

After investing a lot of time and effort into your song writing, arranging, practicing, recording, mixing...and re-mixing, why would you not want to invest in a professional mastering job?

But you may ask, 'With all of the cheap plugins and automated online mastering for ten or fifteen bucks a track, why can't I master my own mixes or use online mastering?'

Well, of course you can master your own tracks or use online AI automated mastering. Either might be acceptable. But do you want your musical creations to be 'acceptable' or the best they can be?

Mastering isn't only about automated pre-sets and hitting a LUFS target. And the keyword in 'Artificial Intelligence' is ARTIFICIAL...LOL.

Your 'human' mastering engineer can provide valuable feedback if your mixes need some adjustments that can't be achieved at the mastering stage. Often certain elements of a mix will jump out or sound out-of-balance when mastering processing is applied.

Being able to discuss your project with the mastering engineer before and during the mastering process is invaluable.

As the mixer, your ears have become tuned to your mix and work environment. You are 'too familiar' with your mix, your speakers, and your room, and you no longer hear your mix objectively the way a good mastering engineer can. Mastering engineers listen differently for different things than do recording and mixing engineers.

Are your speakers and room good enough to detect the subtle things that need adjusting to make your mix really stand out and shine on any system?

For the two reasons above it's not a good idea for the same person to mix and master in the same room on the same pair of monitors.

The room and monitors in a professional mastering studio will inevitably be far better than your room and monitors. This is essential for the mastering engineer to be able to hear the subtle adjustments that need to be made to bring your mix to its full potential.

**So if you've made your decision to use a professional mastering service**

**READ ON!**

*Otherwise, please delete this document immediately to prevent it from falling into the hands of the Insane Clown Posse!*



# How to Prepare Your Mix for Mastering

## Record and Mix at the Highest Bitrate and Resolution Your System Can Handle

Do not record in one resolution and up-sample or down-sample to another resolution for mixing. Use the same bitrate and sample rate for both. Ideally you should record and mix your entire project in a high resolution like 24-bit / 48 kHz, 24-bit / 88.2 kHz, or 32-bit floating point 88.2 kHz or 96 kHz. But that's not always possible with home recording setups, so just use the highest resolution your system can handle!

While it is possible today to go as high as 192 kHz, the file sizes are huge, the CPU load is enormous, and there isn't any sonic advantage over the already very high 96 or 88.2 kHz. Most of the mixes we receive are 24-bit at 48 or 88.2 kHz. One caveat here: if you are a home recording enthusiast and all your system can manage is 16-bit 44.1 kHz that's fine too. Not ideal, but it's manageable.

## Don't Over-EQ Your Mixes

Over-using EQ to make an element 'sit better' in the mix may result in spikes in the frequency response and cause your mix to be overly bright or overly bottom heavy. It's better for the mastering engineer if your mixes are slightly on the dull side and not overly heavy on the bottom. Be conservative with your EQ, make your mix sound the best you can, and leave the final polishing to us!

## Don't Over-Compress Your Mixes

You can use some light mix-bus compression or limiting for 'color' but PLEASE DON'T use heavy-handed compression or limiting just to achieve 'loudness' when you print your mix for the mastering engineer. Ok...if you insist on using some compression on your mix-bus please send TWO mixes: one with and one without mix-bus compression and I'll do TWO masters for you to choose from. Too much compression on your mix-bus will suck the life out of your mix. And then you might as well not even master it.

Why not learn the 'old-school' way of controlling dynamic elements in your mix without using a plug-in compressor! There are some great tutorials on the web that can show you how to 'ride' your faders in those spots where you need to make an element stand out or back off. In modern DAWs most have a feature which allows you to 'automate' your track gain. It's magic! And your mixes will have a more 'vintage' sound, and they'll be HUGE.

I'm personally convinced that one of the main reasons that music from the 1950's through the 1980's is still being listened to and admired, is that it did not have the dynamics squeezed out of it to achieve some insane loudness level like we experienced in the 'loudness wars' after the development of digital recording and CDs. Today, too much of the music we listen to is more compressed than at any time in history! In fact, I've heard 78 rpm mono recordings with more exciting dynamics than many pop releases.

It's fine to use compression when playing your mix for your clients or bandmates but leave the final dynamics to the mastering engineer.

## Don't Over-Cook Your Mixes! The Loudness Wars are Over

Keep your TRUE PEAK below -4 dBFS to safely avoid clipping. You can go louder but what's the point of risking clipping and inter-sample peaks? The integrated loudness level (LUFS) of your mix is not that important. If you keep your PEAKS below -4 dBFS your integrated level will be whatever it is. Let the mastering engineer achieve the HOT levels for you, if that's what you desire. But I'll do my best to convince you that there is no longer any advantage to compressing and limiting the dynamics out of a song in today's world of streaming and volume normalization. The loudness wars are over!

Getting HOT mix levels is NOT IMPORTANT and will only increase the risk of ugly digital distortion. Unlike the 'old days' of tape machines and noisy electronics, keeping the recorded signal as high as possible without distorting it was a way of keeping the noise floor down. Today's digital recording systems have virtually NO noise floor. The inky black silence of early digital recordings was so unnatural that some engineers began adding hiss back with tape emulation plugins and 'analog' room noise plugins.

And don't agonize too much over matching the loudness levels between your songs. Keep them within the parameters mentioned above, and you're good to go. Final track level balancing is part of the mastering process. Just focus on making your mixes sound great!

Long live REAL dynamics!

### Leave Extra Space at the Beginning and End of your Tracks

Don't trim or apply fades on the heads and tails of your tracks at all, you might end up cutting off a decaying reverb tail or a quiet sound. Leaving five to ten seconds of silence at the start and finish is enough. Leave the trimming and lead fade-ins and tail fade-outs to the mastering engineer.

### Record, Mix, and Print at the Same Resolution - And DON'T Add Dither!

Dither should only be used at the end of the mastering process. If you're working in 32-bit you'll be sending the 32-bit file for mastering, and you should never apply dither. Even working in 24-bit you can just send the 24-bit file for mastering without dither. Adding dither to your mix will reduce the resolution, and multiple levels of dither make the noise floor louder. When bouncing to a lossy compressed format like MP3 it is detrimental to apply dither. The heavy compression used to make MP3s and other lossy compressed formats adds noise, so adding dither makes it worse. And of course you'd NEVER send a mastering engineer an MP3 file would you? Only if you want to ruin their day.

Also, you should never create a new format from a track that has already been dithered. In other words, don't take a 16-bit / 44.1 kHz track that has been dithered and create a FLAC or AIFF from that 16-bit file, and NEVER create anything from an MP3...they suck! Always create every format from the original high-resolution master file. Even the low-fi MP3 will sound acceptable if printed directly from a high-res master file. That's why I provide you with a full-resolution Master for archival use in case you need to create a compressed format, or some new format to come.

### Provide the Mastering Engineer with Alternate Mixes

Giving the mastering engineer a main mix and an alternate mix can save time and hassle. For example, providing a vocal-up and a vocal-down mix might save you from having to re-mix the vocals. Sometimes things that are not apparent during mixing will poke out during mastering and need to be addressed in the mix. Another choice is to provide an instrumental mix, a vocal mix, and a background vocal mix as three separate files, along with your full mix for reference.

Also, you may want to consider an instrumental mix with background vocals (no lead vocals) so you can sing live on TV against your pre-recorded background, or sing Karaoke with your friends in your living room!

Stem mastering is a subject that I will not address in detail here. If you are interested in stem mastering, please call me to discuss it. It has some advantages, but it is more time-consuming for the mastering engineer, and therefore more costly for you.

### Provide the Mastering Engineer with Reference Tracks

If there are some commercially released tracks of other bands that you are trying to get your mixes to sound like, send them along. Or if they're on the web, send the names of the band and tracks and I'll listen to them there. But remember, your mixes must sound something like those bands to begin with! If I don't think your mixes can be mastered to sound like your reference tracks, I'll let you know what is possible and we can discuss it.

### And finally, if You're Making an Album, Provide Your Song Order and Album Length

The order of your songs on an album can make a BIG difference to the flow and feel of your project. Make sure you give this ample consideration and thought. You don't want to leave it until the mastering session is underway. If someone in the band, or your producer, already has an idea of song order, then you're good to go.

If you're planning on making a CD, please note that the MAXIMUM length of a commercially manufactured CD is just over 79 minutes: 79 min and 54 seconds, to be precise, and a 33-rpm record can hold 15-22 minutes per side. When adding up your album length, make sure to include 1-3 seconds for gaps between each track. The final track gaps can be short, long, or even cross-faded, and strongly influence the flow and feel of your album. This is only a concern for CD or vinyl, and something we would discuss.

I have listened to thousands of ALBUMS (!) of every genre of music, and I have a pretty good feel for what makes an album flow nicely. If you want my opinion of your track order, please ask.

## Mastering Rates

### SPECIAL INTRODUCTORY OFFER

If you pay for a single track to see if you're satisfied with my work, and then decide to master more tracks as part of the same project, I will apply the appropriate discounted rate to the first track.

### ALL PRICES ARE IN CANADIAN DOLLARS

Single track: \$75.00

Two to six tracks: \$60.00 per track

Seven or more tracks: \$50.00 per track

Included in the above prices are two master files: one reference master in the original resolution of your mix for your archival use, and one additional format of your choice, listed below. If you need more than the archival master and one of the formats below, there is an extra charge of \$20.00 each.

1. Full resolution .WAV file in 24 or 16-bit / 44.1 kHz which is the most common format required by streaming platforms. (Check your distributors requirements.)
2. Apple Digital Masters AAC (Advanced Audio Coding) can be provided in the original sample rate of your mix, specifically for iTunes, if required. Apple does not allow bit-rate padding (up-sampling) so we can't go any higher than the original sample rate of your mix.
3. For CD manufacturing I will provide a DDP file in 16-bit / 44.1 kHz.
4. For vinyl manufacturing please make sure to ask for a special vinyl pre-master, which will be provided in the original sample rate of your mix.
5. Lossless compressed format - FLAC 24 bit up to 96 kHz based on the sample rate of your mix. FLAC is fast becoming the standard for high-resolution paid downloads on most sites.
6. Lossy compressed formats: MP3, Ogg Vorbis. You can create these lossy compressed formats yourself from the archival master I will provide. They don't require any dithering.

# Sound Art Mastering

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