

My Vocal *Mix*

A detailed look at the craft of vocal mixing — from cleaning mouth noises and breaths to compression, EQ, and de-essing for lead and backing vocals.

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SUBJECT · **VOCALS · MIXING TECHNIQUE**

Much of the job of mixing these days is really how to deal with vocals. The vocals can make or break a good song, a good production, and a good mix.

So let me see if I can express a bit of what I do to bring that vocal performance to a special place.

A lot of pop vocals these days are recorded very close to the microphone, often in a very small treated space, and are often (heavily) compressed on the way in to the recorder. This is not the space that I visualize when I'm mixing a song.

This means specifically that we are getting more tracks with prominent mouth noises (spit clicks and pops, smacking lips, etc) from close mic'ing. I can often hear when the singer opens their mouth before a syllable is sung.

It also means that we get a lot more breathing noises captured and brought

forward by the compressor in the recording chain. This is both breathing in preparing for a phrase, and end of phrase breathing out, when the singer has held their breath in too long and needs to expel it before taking another breath in. These sounds are often made louder by the compression on recording.

Multiply these sounds by as many lead and backing vocal tracks as are being recorded, and it quickly becomes a huge problem to be fixed. Additionally, in the growing world of immersive sound, with voices coming in from front, side, behind, it becomes that much more critical.

One thing that I am trying to do when mixing vocals is remove any distractions that pull the listener out of the music. To this end, I spend a lot of time editing out or riding the volume down on these clicks, pops, spatters, and breaths.

It is not always desirable to remove them completely, though. I'm making a judgement call on what feels natural to the performance. I'll remove more end-of phrase exhale breaths because I want you to think that the singer's performance was effortless, or at least well planned. Inhale breaths I'll pull down in volume and perhaps shorten. I don't want you to hear a huge inhale preparing for a hard phrase; a quick little breath and the singer feels like they are ready to belt it out like a pro.

Clicks, spit noises, and the sound of the mouth opening I'll generally get rid of completely if I can. My visual perception of the mix is that the singer is on stage performing to me; maybe close by, but not close enough I should hear spittle. Now, if I wanted a singer to sound like they were whispering in your ear, that might lend itself to let you hear that mouth noise.

In some instances, such as a totally quiet drop in the music where the vocal is going to come in alone, that mouth opening or licking the lips sound might be meaningful and authentic. Each noise and breath needs to be evaluated in context. It might be too unnatural at that point to not have a soft breath or other close mic noise. Similarly,

before a big sustained note, that breath might add power to the performance; the singer is really going to go for it here.

There is no automatic solution for cleaning vocals like this. Each noise removal, fade in, fade out, or volume ride needs to be listened to and evaluated as to how it helps or doesn't help the performance.

"Each noise and breath needs to be evaluated in context."

ON VOCAL CLEANING PHILOSOPHY

In the backing vocals, the problem is just as critical. Four or eight or even more voices singing a phrase may all have mouth noises and breaths, always at slightly different times. I'll be spending a lot of time solo'ing these vocals and cleaning them up. Backing vocals don't often need to have the breaths left on, so those can be edited out completely much of the time. It is very distracting to me to hear multiple breaths all slightly out of time with each other. The same with mouth noises, I'll be cutting them out on backing vocals as much as possible. This really allows the lead vocal to cut through as the main performance.

When backing voices end their notes at different times, I'll often fade them all to end together. I generally want clean and precise backing vocals on every note, as if they are sung by a choir, and not by one singer doing multiple takes.

Another reason for cutting and fading into and out of backing vocals is the building up headphone bleed across the multiple takes.

De-essing is next. On the lead vocals, I try to find a place where it sounds natural but not distracting. Too much de-essing will sound like the singer is lisping; not enough will be painfully obvious at loud volume. Backing vocals can be heavily de-essed and again, even cut out if the timing between vocals is off.

Reverbs and delays may point out places where noises or breaths become distracting again. Breaths may need to be taken out of delay sends where they might muddy up the sound, mouth pops in reverb may also become more of a distraction.

Working through the song, and the mix, it is an ongoing process of questioning myself; is that breath too loud, does it sound like the singer is struggling? Is that breath not enough, does it sound like the singer is faking?

In mixing for surround sound and immersive audio, I find that I need to do even more. Breaths and noises, especially in the backing vocals, that were ok in a stereo mix need more fine tuning when spread around the room. Timing discrepancies between voices really distract in these cases and need to be fixed.

"The vocals are always the first thing I listen to, and the last thing I touch in a mix."

ON MIXING PRIORITIES

This is where I put a lot of my concentration in the mix. Now that I've got a clean performance to work with, I can do the stuff that really makes it shine.

Compress; I like the 1176 as it keeps the intelligibility of the vocal brightness, aiming for between 3dB and 6dB of compression.

then EQ; I will generally roll off the low end and boost the highs; high pass filter about 75Hz, High shelf adding about 3dB at about 5kHz to taste.

then De-Esser; I'll squash back the most prominent sibilance starting around 5.5kHz, 6 to 10dB.

If more de-essing is needed, I would do in manually via volume as opposed to setting the de-esser any harsher.

As I do my compression and EQ, undoubtedly more things will poke through that I didn't catch before. It will also again affect the volume of the breaths that I'm working on making natural.

I'll often do a general compression and EQ to get close to the sound that I want before doing the vocal cleaning so that I can avoid this.

From here it is working on the balance of everything, doing vocal volume rides on words and phrases until the performance sounds both natural and powerful. I'll still be listening throughout the entire mix for distractions in the vocals as the mix evolves. The vocals are always the first thing I listen to, and the last thing I touch in a mix.

SIGNAL CHAIN SUMMARY

Compressor	1176, 3–6 dB gain reduction
EQ — High Pass	~75 Hz
EQ — High Shelf	+3 dB at ~5 kHz
De-Esser	~5.5 kHz, 6–10 dB reduction