

The Art of Vocal Recording



Synopsis

In modern pop music – and many other genres – the lead vocals are generally the most important element. George Shilling (www.georgeshilling.com) reveals some tricks of the trade with a bit of spill from Dave Ward.

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Intro:

Many recordists spend far more time thinking about subtleties of drum EQ or MIDI hi-hat programming, but ultimately it's the vocals that convey the spirit of the song and carry the 'hook' in most cases. and this is what captivates the intended audience and sells records. Recording the vocals is an art which requires more than just owning the right gear, although that too is important.

Diction:

One of the basic ideas in quality recording is "Get the sound right at source". Don't be tempted by the "Fix it in the mix" concept.

Good diction (clearly pronounced lyrics) is very important if we want the lyrics to carry the story and feeling of a song. We need to remember that most customers buy a track because of the lyrics, even though some musicians might consider the vocalist a "necessary evil". There even seems to be a fashion to not pronounce words properly, to swallow the words and leave off the ending consonants. Generally, this is not good for commercial success.

Getting ready:

To draw a great vocal performance from your vocalist, they must be in the right frame of mind. They might be nervous, excited, intimidated, bored, drunk, happy, or any number of adjectives.

As the recording engineer and/or producer, it is your job to make them feel relaxed and comfortable. You have to give the impression that you are confident they will give you the greatest take, so build them up and polish their ego. It is your job to draw out their greatest potential.

It is best if there is no particular deadline. Try to set aside a time when there won't be interruptions. Ask everyone to turn off mobile phones. Also, make sure there is nobody in the control room who shouldn't be there. Sometimes, this might involve persuading the

other members of the band to leave, and often they have strong opinions of how it should be sung.

Play it by ear, but it could be unsettling for the vocalist to have too many instructions directed at them. Perhaps it would be better for them to say their peace, throw them out for a few takes, then get them back in to hear and comment before another few takes.

Lighting and ambience can play a big part in getting a great performance. If you go out of your way to make a singer feel comfortable, they will appreciate the effort and put everything into their performance. So, light a couple of scented candles and dim the lights...get rid of the smelly take-away cartons. Uggghhhh.

Location:

Not everyone might agree, but by far and away the most important thing when considering the location and positioning is the comfort of the vocalist.

Communication is vital, so if they are in another room, make sure the talkback system works properly; perhaps not too loud and alarming. Remember your job is to coax out a great performance not be a dictator. There are enough of those in some bands.

Things need to be set up and checked out before the vocal starts. Also, remember that if the headphone levels are turned up, the talk-back levels are likely to increase as well. Check with the vocalist if everything is comfortable. Let them feel that you care.

Acoustics are less critical than with, say, drum recording, but you ideally want a fairly 'dead' room with few reflections. Bedrooms can be fine – the softer furnishings the better. If you hear a boomy resonance on the vocal sound, you are probably hearing reflections in the room.

Ideally, stand the singer with their back to something non-reflective, perhaps at a slight angle – hang a duvet or stand up a mattress behind them! Make sure it isn't going to fall in the middle of the perfect take. You would be surprised how often such techniques are used in professional studios. Anything to get the best sound.

The Recording Chain

Equipment 1: Microphone

You want to capture every nuance of the performance, so the choice of microphone will probably be the biggest, shiniest and most expensive capacitor/condenser mic you can lay your hands on.



A suspension mount helps to avoid vibrations. An artist used to live performance might feel overwhelmed by an enormous shiny silver mic, when they're used to bellowing into a dynamic onstage, so don't rule these out.

We once gave a vocalist a *nice* SM58 to scream into with a *nice* cable to connected to anything. Then a *nice* condenser mike away from him. Another time we, we did the same but put the sound of the SM58 into the foldback. Check out the microphone manufacturers sites; there could be great tips there.



This might seem obvious, but make sure the microphone is pointed directly at the mouth! Check that the boom is not “drooping” during the performance.

Equipment 2: Microphone Preamplifier

Until the 1990s most recording engineers, working in commercial studios, would plug the microphone into one of the mixing console’s microphone inputs, patch in a compressor, then route or patch the channel output to the tape machine track.

However, there has since emerged a huge market in standalone mic preamps and voice channels. With mic preamps, the general rule of thumb is that you get what you pay for. A top-notch model such as the will enhance and bring your vocal recording to life.

Equipment 3 Compressor

Pretty much every vocal you have ever heard on a pop record has been compressed. When it comes to character and tone, the choice of compressor and settings used can be crucial.

Remember that great vocals were recorded before compressors were invented and often live with a band or orchestra. If spill is inevitable *use it, but beware of it.*

Engineers also used to “ride the faders”, manually bringing up quite bit and holding back loud bits.



Most vocalists will enjoy hearing themselves through a compressor and it will generally improve their performance to hear their voice with a bit of squash. You will normally connect this between the microphone preamp and the recorder and monitor through the recorder, but this is not always straightforward if there are latency issues.

If you have to split the signal between recorder and monitoring setup, try to do this after the compressor, so that everyone hears what is being recorded. The compressor should be set to a Ratio of

between 2:1 and 4:1, with medium or fast Attack and Release settings, with the meter showing no more than a few dBs of gain reduction.

Not only will appropriate compression enhance the sound, it will also control some wild dynamic variation; this makes the quietest bits audible and stops the loudest bits being deafening and don't sending the recording meters into the red.

Remember compression gives "an *apparent* increase in loudness, without an increase in gain". Treat compression with respect. A really good vocalist will, of course, naturally control their own gain by moving slightly away or towards the microphone. However you might have to counsel a vocalist to keep the voice focused on the mic if they wander all over the place.

Equipment 4: EQ

At the recording stage, no-one will want to sing over and over again while you tweak subtle EQ settings. You might ruin the best take if you do this.

If things sound really wrong, there may be more fundamental problems - perhaps the vocalist is the wrong distance from the mic. A touch of broad added top at 10kHz and perhaps a little bottom at 100Hz will not do any harm. Don't think about using a De-Esser at this stage - that should be the last thing in the mixing insert chain. You might perhaps consider adding a low-frequency roll-off to prevent bumps, vibrations and suchlike.

The human voice produces very little below 80Hz, but be careful as some pre-set filters are quite harsh and affect frequencies above their defined frequency.

Remember that EQ. is GAIN at selected parts of the sound spectrum. Watch out for overload. Check input and output levels.

Some mics feature filter switches, again, use with caution, but it is often better to remove unwanted LF at source, before it even reaches the preamp.

Setting Up:

There is nothing worse for your vocal session than having an impatient singer warmed up and raring to go, while you fiddle about

connecting leads, screwing mics onto stands, reboot the computer which just crashed, and generally pffaff about.

So, if possible try and have everything in place and ready before they arrive. If not, try and tactfully suggest they make a cup of tea while you concentrate on setting up.

If that is not possible, you must stay cool and set up, whilst making conversation to distract them from the fact that you aren't ready!

Experience with your equipment will tell you roughly where you might need to set the knobs on the mic preamp and compressor before starting.

Pop Shields:

When you buy a condenser microphone, it will often come with a foam windshield that nestles over the mesh section of the mic. Do not, under any circumstances, use this when recording vocals! It is designed for outdoor wind noise rejection. It may not stop pops, and will degrade the high frequency detail.

Instead, get a commercially available pop shield, or make your own using a coat hanger mounted on a mic stand with a stocking stretched over it. Ideally, mount it on a separate boom stand so you can position it in front of the mic – that way if the vocalist bumps



Make sure the mouth is pointed straight at the grill

into it, any vibration will not affect the mic.

The pop shield will not only prevent plosives from making loud booming pops, but can also serve as a marker for the distance for the singer to place themselves. If you set the pop shield 4-6 inches from the mic, it is safe for the singer to brush their lips against it without causing any sonic problems.

Adjustments and Gain Riding:

When you set the track going for the first time, put it in record and try and set rough levels as quickly as possible. You want to have enough level that you and the vocalist can hear the vocals without the monitor channel fader being at maximum, but you mustn't risk clipping and distorting, especially at the sound card inputs or digital conversion stage.

Keep your eye on the recording meter, and your hand near the mic gain or compressor input, as many singers suddenly sing at a much higher level:

- When they reach the chorus.
- As they warm up they get louder.
- As they move nearer or further away from the mic.
- As soon as the "Record" light goes on.
- When they have had a beer (or several).
- Perhaps when they start to lose their voice,
- Perhaps when *think* they are starting to lose their voice,

How many takes?

With the advent of computer recording, the days of having just two or three tracks left on the tape are over. However, if you think about all those great records made on tape, you might wonder whether progress has been made!

It is easily possible to keep dozens of takes, but how do you know when to stop? Many experienced producers will keep lots of takes, but listening back to more than about five may drive you bonkers.

If the vocalist seems to be on an upwards curve, there is no sense in stopping, but try to make some notes as to which are the best

takes, so that you don't have to wade through every single track afterwards. Make sure that the tracks are correctly labelled so that you can understand them.

Try to take a break after a few goes, although if the singer insists, give them another shot before bringing them in to listen. It is often more useful for them to hear a take back, than any suggestions you might make. Frequently, they will hear what needs improving and will return to the mic to give you the best take.

At the end of each take, say *something*, even if you have never heard anything quite so horrible, and have to lie...!

Throwing in the towel:

If things go badly, don't drag on until the small hours, or let your artist get frustrated, but instead persuade all concerned that it would be better to come back and try again another day. Invent a non-existent technical problem if you really have to or fall asleep on the mixer.

Bonus feature: Technique: Monitoring

Headphones:

The traditional way to record vocals is with the vocalist in a separate recording room or vocal booth, wearing headphones in order to hear the backing track and themselves.

If you do this, listen to the track through their headphones before they come into the room, with the record track switched to monitor input to make sure everything is working okay and that the mix sounds reasonable, and that you can hear yourself.

Vocalists are often non-technical people and may not say anything to you even if the sound is horribly distorted, one sided, or extremely quiet.

Some vocalists prefer to monitor themselves with a touch of reverb or delay, so it's a good idea to have the monitor track routed via a couple of sends to a medium length plate-type reverb and a delay of around 200-300 milliseconds. Play it by ear, so to speak, how much to add, and check they are comfortable with the effects.

It is good to have all this ready on the mixer before-hand. Be prepared!!

Some vocalists hate any effects of this type. There really is no accounting for taste, some like to hear none of themselves (this is rare!) others prefer to hear themselves very loud.

Bear in mind though, that singers may not always know what is best for them. Too high a vocal level, and the resulting performance may be too timid, for example.

Another thing to watch for is tuning. If the vocalist is generally singing sharp, it may be worth backing off the level they are hearing; sometimes this will bring them instantly back into tune.



Another popular trick to help tuning is to get the vocalist to place one of the headphones behind one ear on the head, so that they can hear some of the natural direct sound in the room. [See Photo 2: Put one headphone cup behind the head to help tuning – the singer can then hear themselves 'live' in the room]

Speakers:

Although, to get complete isolation, headphones are mostly used when recording vocals, it is not impossible to work with the speakers on.

This works best with a directional dynamic mic, with the singer fairly close or even holding the mic, and the speakers at a reasonably low level – enough for the vocalist to get into the spirit of the song and hear the backing track well enough for tuning.

We recently recorded an entire album's vocals with a large condenser and big speakers at reasonable volume. As long as you don't plan a subsequent radical backing track re-working (or need to radically re-tune vocals in software extensively), a small amount of spill won't cause any problems, and you might net a far better performance.

Bonus Tip: Phase trick:

Flipping the phase of a microphone in a multiple mic setup can radically alter the tone, as certain frequencies cancel out when the source of the sound is a different distance from each mic.

In a single mic situation, changing polarity is imperceptible. However, due to the structure of the skull and the way the sound transmits both internally and via the mic/headphone combination, some singers find it easier to sing with the polarity of the mic reversed. So if a singer seems uncomfortable, try flipping the phase on the mic preamp and see if they prefer the opposite setting.

Bonus Tip: Proximity effect:

Cardioid pattern microphones have an inherent effect of boosting low frequencies of sources which are very close. So as your singer nears the mic, the rich low frequencies will be enhanced.

This can be a good thing, adding a lovely warmth for those intimate verses, but set that pop shield correctly, and ask them to back off for the loud bits!

If you really don't like the proximity effect, consider moving the vocalist back from the mic or even switching the mic. pattern to omni or figure-of-eight, assuming your mic has that capability and the room is reasonably un-coloured.