

TIPS ON... Recording Vocals

If you've got a storming vocal on tape you're halfway towards a great production. PAUL WHITE offers some tips on perfecting this most important of recording skills. Even if all the music you make is created via MIDI, the chances are that at some time or other you'll have to record vocals using the traditional tools of a singer and a microphone. The vocal line is invariably the focal point of a song, so it has to be good, and because the human voice is the natural sound with which we are most familiar, any flaws in a vocal recording are immediately evident. Fortunately, providing you have a vocalist who can sing in tune, getting a good vocal sound isn't rocket science -- you just need to follow a few basic guidelines, and perhaps take advantage of a few tricks of the trade to help you get a professionally produced vocal sound.

Make sure the singer is well rehearsed, physically comfortable, and under no psychological pressure. Most singers perform best standing up in a room that has a comfortable but not over-warm temperature. If they are distracted by other members of the band or by hangers-on, send everyone but the engineer (and producer, if you have one) out of the studio.

Take time to get the vocalist's headphone mix right, and give them a little reverb to help them sing more confidently. If you can rig up a system which allows vocalists to adjust their own monitor level, it will make life a lot easier. A good headphone mix really helps to encourage a good performance.

Always use a pop shield between the singer and the microphone. Failure to do so will almost certainly result in unnatural 'pops' on plosive 'b' and 'p' sounds that can't be fixed afterwards. The pop shield may be a commercial model or a DIY job comprising stocking material over a wire coathanger frame (one such design was explained in the Cheap Tricks article in SOS February '95), or even a fine metal or plastic sieve or chip-pan splash guard. Any of these will do the job without affecting the tone of the mic. Foam wind shields are virtually useless in combating pops.

Use a good microphone: it doesn't have to be anything too special, but you should avoid low-cost 'bargain' models or those designed for use with home stereos or portable cassette recorders. Professional studios generally use capacitor microphones, but in the project studio a good back-electret mic or even a good dynamic vocal mic can produce excellent results. For more on these different types of mic, see April's SOS.

Pick a mic to suit the singer. Singers with thin or excessively bright voices may actually sound better with a dynamic mic, such as the ubiquitous Shure SM58, while those needing more of an open sound would benefit from a capacitor or back-electret mic. If you have several mic models to choose from, try a test recording with each and see which is most flattering to the vocalist.

Use the right mic pickup pattern: most project studio vocal recordings are made using a cardioid or unidirectional mic, as these pick up less sound from the sides and rear. However, an omni mic of a similar quality generally imparts a more natural, open sound and that can be useful if you're working with a singer who tends to sound nasal or boxy. If you work a couple of inches closer to an omni mic, you'll get close to the same 'direct sound to room sound' ratio you'd achieve with a cardioid.

Put the mic at the right distance, because if you get too close to it you'll increase the risk of popping and the level will change noticeably every time the singer moves slightly. Cardioid mics also exhibit a bass-boost 'proximity effect' that varies as the singer's mic distance varies. On the other hand, if the singer is too far away from the mic the room reflections will colour the sound, making it seem remote and boxy. As a rule, a mic distance of around six to nine inches (15-24 centimeters) is ideal.

- Minimize the room's influence on your sound. The mic picks up both direct sound from the singer and reflected sound from the room. Reduce the room's contribution by keeping away from the walls and by improvising screens using sleeping bags or duvets behind and to the sides of the singer.
- Use mic technique to help control level: if the singer can be persuaded to pull back from the mic slightly when singing louder notes, there's less risk of overloading the recorder or mic preamp, and you won't need to use so much compression to even things up. An experienced singer may also lean into the mic on quieter, more intimate passages to exploit the proximity effect. However, to prevent an inexperienced singer getting too close to the mic, position the pop shield about three inches (7.5 centimeters) from the mic.
- Where possible, mount the microphone on a stand. Only let the singer hold the mic if to do otherwise would compromise their musical performance. When the singer is hand-holding a mic, particularly if it's a cardioid model, make sure they keep their hand clear of the rear of the basket, as obstructing this area can change both the directional and tonal characteristics of the mic.
- Don't settle for anything less than the best vocal performance you can get, and don't expect to get it all perfect in one take. More often than not you'll have to punch in and out around phrases that need re-doing, but if you have enough tracks, get the singer to do the whole song several times and then compile a track from the best parts of each take. You can do this on tape by bouncing the required parts to a spare track, but hard disk editing is much more flexible in this respect.
- Use suitable compression -- even well-disciplined vocalists tend to sound uneven against the very controlled dynamics of a pop mix, so it helps to apply a little compression while recording. Err on the side of using less compression than you think you will finally need, and use a compressor that has a reasonably neutral characteristic. Aim to achieve 5-8dB of gain reduction on the loudest signal peaks, and if the compressor has an auto mode, use it.
- Don't be afraid to use more compression on the vocal track once it has been recorded. When the performance is in the bag you can try both subtle and heavy compression to see which works best with the track, though if you're using a lot of compression you may need to gate the vocal track first. This will prevent noise build-up in the pauses between phrases. It's at the mixing stage that a compressor with an obvious character can be used to make a vocal seem larger than life.
- Don't gate the vocal while recording. A badly set-up gate can ruin an otherwise perfect take, so save gating until the mixing stage. Use the gate before any further compression, but don't gate so hard that you remove all the breath noises preceding words, as these are part of the character of a vocal performance, and the recording will sound unnatural without them.
- Don't run amok with the EQ: on most budget desks the EQ only sounds decent when used sparingly or to cut unwanted frequencies. Mid-range boosting usually results in a nasal or phasey sound, so use as little EQ as you can. If you've picked the right mic, and taken the time to fine-tune its position during recording, you shouldn't need much corrective EQ anyway. Of course, there are times when EQ is used for creative purposes, and at such times it's best to use a good-quality outboard equalizer, because the difference between a budget EQ and a really good one is immense. Resist the temptation to pile on too much high-end boost, as this will enhance sibilance, bring up background noise and may make the end result fatiguing to listen to.
- Use reverb sparingly: vocals recorded in a dry acoustic environment need reverb to give them a sense of space and reality, but don't use more than the song really needs. As a general rule, busy songs need less reverb and slower ballads with lots of space in the arrangement can afford to

use more. Listen to some commercial records in a similar style to your own and see what reverb techniques the producer has used.

If the vocals are very brightly recorded, they may cause any added reverb to sound sibilant. Instead of de-essing the vocals (which often sounds unnatural), try instead de-essing just the feed to the reverb unit. You can also experiment with the reverb type and tonality to minimize sibilance and spitting.

If you do have to de-ess the vocals, try to use a split-band de-esser rather than the simpler compressor with an equalizer in the side-chain, as the split-band approach produces fewer undesirable side effects. It's always best to try to avoid sibilance by moving the mic slightly or by using a different mic, rather than trying to fix it afterwards. Pointing the mic slightly above or below the singer's mouth sometimes helps.

When you're using prominent echo or delay effects on a vocal, try to get them in time with the song, either by calculating the delay needed to match the tempo or by using the tap-tempo facility if one is provided. For a less obviously rhythmic echo, try a multi-tap delay with irregular tap spacings.

To ensure that the vocal is mixed at the right level in the song, listen to the mix from outside the room and see if the song has the same balance as something you might hear on the radio. The vocals are the most important part of the song and so must be well forward, but not so far forward that they sound 'stuck on' to the backing.