

Better Vocals

From Aerobics to Zignal processing:



Everything you
always wanted
to know about
singing in the
studio.

Vocalizing by
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HOW DO YOU get the best vocals to tape? This is a subject that has no set rules and is prone to very different perspectives depending on whether you're the vocalist, producer, or the engineer.

It is not uncommon for vocalists to be perceived as "impossible" or having to be accommodated. This can be due to a multitude of problems, such as vocal fatigue and lack of vocal control. On the other hand, knowledge on behalf of the vocalist, a few helpful hints, and a reinforcement or two from the engineer can expedite the "tracks" and allow a better overall performance by the artist. The result: better vocals on tape.

In this article, we'll briefly break down these important areas: vocal health and preparation for the studio; some hints for making the vocalist comfortable (and the engineer's VU meters happy!); and last, but not least, the processing gear.

VOCAL HEALTH

General Info

The best vocals start with the instrument itself... the voice! Daily care and maintenance, along with a solid technique, can eliminate most lost time in the studio, regardless of any other recording obstacles. A routine of proper diet, rest and exercise cannot be emphasized enough when your instrument is YOU! Unlike any other instrument the voice is extremely affected by our daily habits, the environment, illness, stress, and a myriad of other elements we contend with in or out of the studio. Your body and your mind need to be equally prepared with your voice to avoid inconsistency, pitch problems, strain and dull or unenergized performances.

Warm-ups and more...

A daily "warm-up" routine should be established so that the cords are always ready to go. With guidance from a good vocal coach and some experimentation, the routine should focus on the particular style and individual needs of the singer at that time. The exercises may even differ from one type of project to another. The most important thing is that one establishes a routine.

Aerobic Activity elevates the heart rate and raises the blood flow through the vocal cords. This not only wakens the cords, it also reduces any inflammation due to either illness or vocal abuse (e.g., sore throat or hoarseness from blowing your voice out at the club last night!) It's also just a good way to rouse that body!

Steam helps keep the vocal cords moist and is a great healer. (*See "Dry Throat" below.*) A hot shower after exercise does wonders. Prior to a gig or session, inhale steam over boiling water (or with a steamer, which is safer.)

Relaxation furthers a better performance. Prior to your vocal warm-ups do some overall body stretching and shake out the legs and arms a little. Try bending over from the waist, just like a rag doll, and then very slowly raise yourself back up to a straight position, keeping your head and neck very relaxed.

Then concentrate on the muscles in the face, neck, tongue, and jaw that tend to interfere with the muscles that control the vocal cords themselves. (The muscles that you feel are the ones you need to relax.)

Face/Neck/Throat Massage - 1) Gently massage your face with slow, circular motions, paying particular attention to the jaw at the hinges. Yawn and allow the jaw to hang as loose as possible. Move the jaw side-to-side. 2) With the tips of your fingers, gently press the soft area of the throat above the larynx, beginning under the ears and slowly working toward the chin. 3) Massage the back of the neck and then let your head hang forward very loosely.

Jaw Relaxers - 1) Slowly move your chin up and down with your hand, slowly, getting gradually faster, until there is no resistance from your jaw muscles. 2) Clench your teeth; hold for a few counts; release. Repeat several times.

Face Relaxer - Frown very intensely; hold for a few counts; release slowly. Repeat several times.

Tongue Relaxers - 1) Extend the tongue out all the way and return to a normal position behind the lower teeth. This is a fairly quick motion and should only be done 2-3 times. 2) Allow the tongue to fall out over the lower lip in a very limp manner until totally relaxed.

Neck/Shoulder Relaxers - 1) Drop your head forward and roll gently from side to side 3-4 times, then several times in a complete circle. 2) Move your shoulders in a circular motion from front to back; first individually, then together.

A Relaxed Voice

The following exercises will help "wake up" and align your entire vocal apparatus and should be used before other regular vocalises in your warm-up routine.

- Sing your scales/arpeggios on a lip roll (an "Uh" sound, keeping a very blubbery effect with the lips) and on a tongue trill (an "Uh" sound where the tongue lightly flutters.)
- Take a deep breath. As you exhale, make a "sigh" with the vowel "Ah," starting in your high range and continuing to your lower register. It should feel very much like a yawn.
- Using an "N," start in your lower midrange and slide up into your high range as smoothly as possible making a siren-like sound. Do the same on "Ng" and "Mm."
- Place your tongue against the roof of your mouth. In your midrange sing "Ng", feeling a buzzing or tingling, and then open up to the vowel sound "Ah." Repeat using other vowels. ("Ee," "Oh," "Oo," and "Uh").

A FEW HELPFUL HINTS

Dry Throat

A dry or sore throat has plagued even the best of singers at one time or another. Everything from the humidity level (or lack of it) to smog, smoke and air conditioning can be a vocalist's worst enemy. To function at your best your vocal cords must be moist. Whether you are dry from any of the above, or have a sore or hoarse throat from illness or vocal abuse, the best medicine is still *water*. Take a sip of water (always be sure to take a second sip; the first one usually leaves the mouth dry due to inhalation of air) and/or directly moisturize your cords via steam. (*See above*.) If you are caught with a sudden attack of dry throat in the middle of that perfect take, you can breathe through your nose until you're able to break for water. Be sure to *avoid* the following:

- Ice cold drinks - Tenses the throat muscles. Try room temperature beverages or hot tea (preferably herbal).
- Milk and other dairy products - Coats the throat and causes excess mucus build-up; also, post-nasal drip.
- Caffeine or alcohol - Has a dehydrating or drying effect.
- Antihistamines, cough drops, anesthetic sprays - All have a drying effect, especially cough drops with menthol ingredients. Sprays such as Chloraseptic may numb the pain, but have a counter-effect on those warm-ups and steam baths you just took.

You can also use a moisturizing throat spray. There are several over-the-counter products available that are designed for people who have abnormally dry mouths and need to supplement the saliva. One particular product has been formulated specifically for singers and speakers called Entertainer's Secret Throat Relief (formerly known as Moi-Stir 10 - only the name and packaging, along with an improved sprayer have changed). If you can't locate it in your area you can contact The Upright Foundation (P.O. Box 699, Lindale, TX 75771) or call (903) 882-9602 and order direct. Otherwise, purchase aloe vera juice and your own spritzer bottle and be on your way.

Monitor Cue/Headphones

The "I can't hear myself" syndrome can compromise any recording. If a vocalist can't hear properly the result can be strain, poor pitch and an overall below par performance. The two most helpful areas are: 1) the "cue" (headphone) mix, and 2) the headphones themselves. The vocalist should have both a comfortable volume level and good relative blend of instruments and voice. Most studio boards have the facility to make more than one cue mix, so it is usually possible for the vocalist to have a separate mix from the one(s) for the band. Similarly, if your home studio board only has one monitor cue or foldback, use an auxiliary or effect send for the additional cue while recording and using headphones. It can be used for other applications - like effecting your tracks - afterwards.)

Someone with very good pitch may all of a sudden acquire pitch problems in the studio because of the headphones (which alter the way one hears oneself.) To remedy this, completely remove a phone from one ear. A word of caution: be sure it is tucked behind your ear! Aiming the removed headphone directly at the microphone can cause feedback, or at the very least, leakage.

Also, a little reverb or effect in the headphone mix will give the singer a more gratifying sound. The effect does not go to tape; it is only there to give the singer more confidence (which translates to a better performance).

Sit or Stand & How Far Away

The decision to sit or stand while recording should be left up to the singer; whichever is the most comfortable rules. However, a high chair (like those found in many vocal studios) allows the best posture. Chairs with hydraulic levers for adjusting the height are ideal; unfortunately, one often has to make do with what is available.

Proper microphone placement is determined primarily by the type of microphone being used (*see additional information in the section on gear*), but it requires some experimentation. An average distance between singer and microphone might be one foot, but this varies greatly. You'll need to be far enough away so that the mic doesn't pick up unwanted sounds (such as movement of the headphones when expanding the jaw), yet close enough to get a good signal. Of course, the sound changes as a mic's distance is varied from any source.

Once recording levels have been set, it is up to the singer to maintain the same distance from the mic throughout the session to maintain consistent levels. This doesn't mean you can't move at all, but it is something to be aware of. A constant dynamic range helps keep fader riding to a

minimum. It may also mean that your voice will require less compression and limiting during mixdown. If all else fails, put a piece of white tape across the floor so you'll know where to line up your feet - at least you'll be in the general vicinity!

Last But Not Least

Be sure to allow time to "come up for air." Vocal booths have a tendency to get dry and stuffy, and also very warm. Warm is better than cold for a singer's throat, but there comes a time when passing out just doesn't help get the job done! Resting the cords, stretching the body muscles and clearing the mind once in a while makes for a more productive session. But, if you're on that creative roll and it's working... go for it! Just don't forget to take that glass of water with you.

PROCESSING GEAR

Microphones

The importance of the microphone is often ignored. Like all gear, mics have an extremely wide price range. Once you've determined your budget, use your ears - spec sheets don't tell all! It is particularly important that the sound of a mic be matched to the application. Moreover, vocalists have to find mics that sound good with their voices.

Listen to all the possibilities in your price range and compare the various responses. Always test a microphone for frequency response, making sure it has both a good high-end sizzle and a low-end response that isn't too "boofy." It should also be able to handle high input levels without distorting (e.g., a high Rock or R&B "wail"). Other factors such as the proximity effect (the increase in low-frequency response as the mic gets closer to the sound source), the mic's coloration, and various vocal timbres being recorded will also be a consideration. All of these factors affect the overall sound quality, and cannot be adequately described by specs.

There are three major microphone pickup patterns (the response to sounds from different directions): *cardioid*, *omnidirectional* and *bidirectional* (also known as figure-8). *Cardioid* mics are very directional in that they are most sensitive to sound in front of them. They reject most off-axis sounds (sounds coming from the sides and rear), so they are the most common for recording solo vocalists. *Omnidirectional* mics, of course, pick up sound from all directions. These are best suited for recording a group of voices to get a natural blend. *Bidirectional* mics pick up sound from the front and back, while ignoring sounds from the sides. They are ideal for recording two voices. A number of microphone models also feature switchable pickup patterns.

Pop Filters/Shock Mounts

All microphones are susceptible to some amount of "pops". These are the consonants such as P and B, which some singers force onto the mic. This habit is best cured with proper vocal technique, but for that "popper" they have invented the pop filter! These are fairly inexpensive devices that are attached to the mic stand with the filter resting about 3-5 inches from the microphone body. It is also possible to make a pop filter out of a coat hanger or embroidery hoop and an old nylon stocking - although these are less effective.

Using the foam windscreen that is included with many microphones is not necessarily a good substitute for a pop filter. Foam windscreens can cause a lot of the high frequency and transient response to be lost. On the other hand, many mics are designed to be used with their windscreens, but they are often best saved for outdoor concerts. Pop filters are much more effective.

If your microphone is mounted on a stand, it can be susceptible to vibrations. Even if you are isolated in a vocal booth, a simple toe-tapper can cause problems. A shock-absorbing mount suspends the mic within a separate frame, usually by elastic bands. In a pinch, it is possible to

wrap the body of the mic with foam and duct tape, then tape the mic to the stand.

Equalization

EQ should only be used when all else fails (i.e., microphone placement and selection, better singing, etc.), or as a special effect. To avoid distortion, it is better to reduce, rather than boost frequencies. This is particularly true in the high end. When EQ is needed, use it with discretion! Make sure that distortion, "boofing" and sibilance ("ss" sounds; *see also De-essers below*) are kept to a minimum.

A parametric equalizer allows frequency adjustments within a very narrow frequency range. Generally, women may need a boost in the low-mid area (100 to 250 Hz), while men can be reduced in the same range. Too much mid-range (2-5 kHz) can create a "trash can" sound on women and may need to be rolled off. That "sizzle" we all love is in the high frequencies of 8-10 kHz, but careless application in that range can create thin sound. Most of all use your ears and don't make radical adjustments. Remember that like anything else in the recording studio, one EQ tweak affects the next, and vice versa.

Compressors/Limiters

These devices reduce the dynamic range of the vocal signal, allowing better tape saturation and/or signal-to-noise ratio. This is a "must" for any vocal recording, whether you are dealing with poor vocal technique (such as "splatting" or overblowing the mic), extremely dynamic material, or even an occasional peak on the VU meter. However, use everything in moderation! Too much compression/limiting will create a very "squashed" sound with no dynamic range at all - not a very musical or emotional recording.

Both compressors and limiters limit the signal to a prescribed level. Signals exceeding this level are then reduced. Compressors also do the opposite: low levels are raised to a specified minimum. The compression ratio determines how subtle or extreme the result will be. There are combination units available called compressor/limiters, which work well under all types of vocal recording. The simplest hook-up for any of these units is via the insert jack of the individual mic channel. Save your auxiliary/effect loops for other things.

Noise Gates

A noise gate is useful for removing extraneous sounds, like headphone leakage, excessive breathing, tape hiss from high-end EQ boosts, or even room noise (the latter can be particularly applicable to home studios, which tend not to have vocal booths). There are conflicting opinions as to whether one should use a gate while recording or during the mixdown. If you want to cut down tape hiss and room noise, gating while recording is the way to go. But, if you need to capture every little nuance of the vocalists performance, and there's a chance something may get cut off, wait for mixdown. Better yet, take steps to insure that your recording is quiet!

De-essers

A de-esser is a sibilance controller. In other words, it reduces the S and T sounds which often get exaggerated or distorted on vocal tracks. This is often due to excessive high-end EQ boosts. It should be used at the end of all other processing while recording.

Exciters/Enhancers

When quality is lost in a recording, specifically in the high-end, instinct drives one to boost these frequencies. The problem is that this can cause excessive tape hiss and sibilance. Enter exciter/enhancers. These units put "presence" and life back into the tracks, and tend to make vocals stand out better. They may be used only on vocal tracks, but it is more common to use them on the overall final mix.

Reverbs, Delays & Multi-Effects

We all pretty much know what these devices are, and that we'd like to have as many as we possibly can! A good clean reverb is the basis for all vocal processing. Combining reverb with a separate delay unit is always a pleasing vocal sound, and that same delay can add interesting (and spacial) effects. Chorusing is an effect that can go a long way toward fattening a sound.

However, any signal processing should be left until mixdown; don't put it on the original vocal track. If you do, you own it! If necessary, record the effects on a separate tape track. You may change your mind about what effects to use when you hear the vocals in context with everything else.

TO SAY THE LEAST, life in the studio is very different from a live performance. The confines of the vocal booth and headphones, the sometimes numerous takes, all combined with the lack of audience response that drives so many of us as performers, can make getting the best vocals to tape a chore at times. But, with a little knowledge, the studio can be a lot more productive - and even fun. However, like most learning and growth, the best education is the experience itself!

So, dive in, explore and ENJOY!