

Some Notes on Pop Vocal Technique And Microphone Technique



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Many voice teachers and vocalists claim that one can sing any style with “good vocal technique.” This is certainly an accurate statement, but it is sometimes difficult for the singer as well as the teacher to discern where the line is between “technique” and “style.”

Breath Support and Upper-Body Tension

It is generally agreed that one of the most important aspects of vocal technique is breathing. It is furthermore true that the pop singer should support their tone with the breath. Perhaps the sole negative aspect of the microphone is that it can sometimes promote shallow breathing in pop singers. The vocalist often feels, consciously or unconsciously, that deep breath support is unimportant, as his or her voice is being amplified by a P.A. system. However, even the vocalist who is amplified should take in plenty of air when breathing, and the breath should support each tone.

The trick is conservation of breath, as there is also a danger of expelling too much breath with the tone, which can tax the vocal cords as well. There are also dangers to expelling too much air into a microphone, but we will get to that later.

No matter the vocal style, the singer must always take in a deep breath, and learn to expel only the amount of breath he or she needs – no more, and no less. Of course, this requires practice and daily exercises, for each singer must have intimate knowledge of his or her limitations.

Vocalists who double on an instrument often find it even more difficult to support their tone. The primary reason for this is probably the fact that they have two things to think about: singing and playing. However, an additional reason can often be the physical limitations of attempting to sing with an instrument strapped to their bodies, or, for keyboardists and drummers, the need to play an instrument with their hands while singing into a microphone.

Therefore, it is important for the vocalist/instrumentalist to practice vocal exercises at their instrument. For instance, if you are a guitarist, sing vocal exercises, concentrating on proper breath support, with your guitar strapped to your body. It is even wise to practice breathing exercises with your instrument on, so that you become accustomed to deep breathing in spite of having a guitar strapped in front of your stomach or sitting down at a keyboard or drum set. The deep breathing must then become second nature, so that you never have to think about it.

Another commonality between pop and classical vocal technique is the need for a relaxed upper body, supported by strength and stability in the lower body. Unfortunately, the classical vocal stance, with the feet spread a shoulder-length apart and one foot slightly in front of the other is often impractical in pop music. Pop vocalists are expected to strut around the stage as they sing, and engage the audience. One can still attain stability in the lower body, as long as they avoid locking their knees and try to keep the feet at least a shoulder-length apart.

It is imperative that the head, neck and shoulders be completely relaxed when you are singing. Any amount of tension in these areas can translate to tension in the vocal cords, leading ultimately to vocal strain. However, pop singing often requires a great amount of energy, and human beings have an unconscious need to translate any expenditure of energy to the physical realm. It is best, then, to localize the expenditure of energy to the breathing muscles. When you are trying to hit that high note near the

top of your range at a loud volume, concentrate on using the breathing muscles in the stomach area to achieve it, keeping your shoulders and neck relaxed.

It is also imperative that you spend as much time as possible practicing the songs you sing, and concentrate on initiating every sound from the breathing muscles, keeping the shoulders, neck and head completely relaxed. This must become second nature to you, because you have other things to think about when you get on the stage.

Much of today's pop music includes vocal licks or runs, and these must be initiated from the breath as well. A typical day on MTV will feature videos in which vocalists move their chins up and down as they sing vocal licks. This is not a healthy practice, however, and must be avoided at all costs. When singing vocal licks, it is best not to concentrate on every single note. One effective approach is to choose every three or four notes as target notes, and concentrate on articulating those from the breath. With a little practice, the notes in between will come out naturally, and the entire line will be well supported by the breath.

The gray area between technique and style, especially among academicians, is vocal placement, vowel shapes, diction, and vibrato. Vocal Exercises

The vocal cords are muscles, and they must be exercised daily, or they can become atrophied. Furthermore, before any physical workout, it is important to warm up, stretching your muscles so that they are not shocked by sudden physical exertion. The same is true in singing.

Always warm up before a performance or rehearsal. A typical warm-up should be at least 20 minutes in duration. Scales and vocal exercises can be used, even if they are more classical in nature. As a general rule, it is best to begin in the middle-to-low register, and gradually expand in both directions.

In addition, it is important to warm up on the days you are not rehearsing or performing. This keeps your voice in shape, much like the other muscles in your body. Singing along with the radio or your CD collection does not count as warming up. In fact, if you are in the habit of doing this, you should always warm up first. However, be aware that singing along with the radio can injure your voice if you over-do it.

Vibrato

Very few general statements can be made with regard to the use of vibrato in pop music. The pop vocal sound runs the gamut from no vibrato at all to a very wide and fast vibrato. First, we should examine the different types of vibrato. The *Frequency Modulation* (FM) vibrato is the natural vibrato that many vocalists develop in their maturity. This type of vibrato can be thought of as a slight wavering or fluttering of the pitch up and down. Frequency is another term for pitch, and an FM vibrato is a modulation of the pitch.

For intonation purposes, it is best if the target pitch is centered between the modulations. However, some exceptions can be found in pop music. For instance, in the 1980's, many "glam" heavy metal singers used a frequency modulation vibrato that began on the target pitch and modulated up. As our ears often tend to concentrate on the center pitch of an FM vibrato, this often caused the vocalists to sound slightly sharp to trained ears. FM vibrato can be difficult to control, depending on how wide the modulations are.

An *Amplitude Modulation* (AM) vibrato is one in which the amplitude, or loudness, is varied rather than the pitch. This is achieved primarily through use of the breathing muscles, and it is often called a *diaphragmatic vibrato* as well. An AM vibrato must be controlled, as it does not occur naturally. This can be a great advantage. For instance, many vocalists will begin a long note on a straight

vocal tone with no vibrato, and then gradually bring in the vibrato. This is much easier to achieve with an AM vibrato.

To implement an AM vibrato, the singer must take in a deep breath, and pulse the breath, causing the note itself to pulse. An AM vibrato will often possess a slight frequency modulation component as well, although to a lesser extent. Although it is ultimately easier to control, it does take some practice to master an AM vibrato.

The danger in using vibrato in a pop context is “sounding too classical.” A classical vibrato is often an FM vibrato with a rather wide and fast modulation. Therefore, the simplest method is to either use an AM vibrato or an FM vibrato with a narrower, slower modulation, coupled with proper pop diction and vowel shapes.

Vocal Placement and Vowel Shapes

In traditional or classical vocal technique, the singer is often told to direct or place vocal sound toward the top of the head. However, the optimum placement for the pop vocal sound is in the “mask,” which lies between the upper teeth and the nose. This produces a brighter sound that, to the classically trained singer, tends to be more nasal than they are accustomed to.

Additionally, traditional voice teachers often promote the formation of rounded vowels, with the jaw dropped. The typical mouth formation for a vowel such as “ah” is longer in the vertical plane and narrower in the horizontal plane. In fact, the position of the mouth is much larger in singing than is normally used in everyday speaking.

In pop music, however, a more natural, speech-like mouth position is favored, and a vowel such as “ah” will be wider on the horizontal plane, and smaller in the vertical plane. In fact, professional studio vocalists will often sing with a mouth position that is almost a loose smile. This, of course, also produces a much brighter, more nasal sound than the classical singer. The danger with using this “smile” technique is tight facial muscles, which must be avoided at all costs.

An additional danger in producing these brighter vowel sounds is sounding too nasal. The vocalist can compensate by keeping the throat as open as possible, almost to the point of a “yawn.” Take care not to open the throat to the point of discomfort, however. The open throat will give depth and warmth to the sound, especially in the higher registers. Of course, always remember that this will require additional breath support, as you will need to fill the throat cavity with additional air.

Pop Diction

Diction in pop singing is often the lowest priority. Many famous pop singers have built careers on the unintelligibility of their lyrics. However, just as many pop singers are able to sound authentic without sacrificing the lyric, diction in pop singing must be as natural and speech-like as possible.

In traditional voice lessons, singers learn to articulate hard consonants, such as “T,” rather forcefully, expelling some air with the release of the consonant. However, in natural speech, we tend to expel less air when we articulate a “T” sound, making it sound more like a soft “D,” and this is the accepted practice in pop singing. When articulating hard consonants in a more speech-like manner, the key to keeping them intelligible is to place the tongue as close to the front of the mouth as possible. It is not uncommon for pop singers to almost omit the final consonant of a word, relying on the ear of the listener to “fill in the blanks.” This is, of course, up to the individual vocal style of the singer. A pop singer must attempt to strike a balance between sounding too “proper” and singing lyrics that the listener cannot understand, and often the boundary is different with each singer.

In classical singing, the vocalist learns to concentrate on the vowels, and make the consonants as short as possible. However, in pop singing, it is appropriate to sing through voiced consonants such as “M” or “N.”

Diphthongs are another important issue in singing. Many words in the English language feature combinations of two or more vowel sounds in sequential order. These are known as diphthongs. The diphthong in the word “pay” is an *eh* followed by an *ee* (as in the word “free.”) In other words, spelled phonetically, it is pronounced “p-eh-ee” Traditional voice teachers tell us to sing the first diphthong (*eh*) and articulate the second diphthong immediately before the ending consonants. However, in pop music, it is not uncommon to give equal time to both diphthongs, and in many styles, the vocalist will sing through the first diphthong quickly and hold out the second to the end of the note. In fact, this technique can often be beneficial when using a microphone, as we will see later on.

Microphone Technique

It can be argued that all musicians, even vocalists, play an instrument. In the case of vocalists, the instrument is the entire body. This is certainly true for pop singers as well; however, the microphone should be added as another integral component of this instrument. Thus, every serious pop singer should first of all purchase a microphone that perfectly suits his or her voice. Every voice is different, and every vocal microphone is different as well. Before buying a microphone, it is wise to go to a large, well-equipped music store, and audition all of the vocal microphones, singing into each one through a P.A. system, until you find the one that most suits your needs. Of course, the “workhorse” of vocal microphones is the Shure SM58. It is inexpensive, ruggedly constructed, and sounds very good with most voices. However, it is not necessarily the microphone for everyone, and it is always best to shop around.

Proper use of the microphone is an art in and of itself. A microphone is a “transducer,” which can be defined as a device that transforms one form of energy into another. The microphone transforms acoustical energy, or sound, into electrical energy, which then reproduces the sound as accurately as possible through a P.A. system.

The most important element of the microphone (specifically the Dynamic Microphone, which is most often used by vocalists in live situations,) for the purposes of our discussion is the “diaphragm.” The diaphragm is a thin membrane that vibrates when sound waves come in contact with it. The vibrations are then transformed into electrical signals.

The diaphragm of a typical dynamic microphone is rather sensitive. Even excessive amounts of air or wind will often vibrate the diaphragm, producing a rather unpleasant sound. Therefore, it is imperative that the vocalist controls the amount of air that he or she expels in the process of singing. This is especially an issue with the “plosive” consonants, such as “P.” When we sing a “P” sound, a certain amount of air is naturally expelled in order to articulate the sound. Vocalists and radio announcers often must temper their “P” sounds to compensate for this, articulating them more like a soft “B” sound. Sibilant sounds such as “T” and “S” must often be softened as well.

There are other useful methods of eliminating or lessening the impact of plosives. For a nominal fee, a windscreen can be purchased for a microphone. A windscreen is a foam rubber sheath that is placed on the receiving end of the microphone. Such a device will reduce the effects of plosives and sibilants, as well as wind (for outdoor performances.) However, a windscreen can dull the sound of the microphone somewhat. Yet another method for reducing plosives and sibilance is positioning the microphone at an angle, and this will be discussed further in the next section.

Microphone Placement

When purchasing a microphone, it is important to note the “Polar Pattern.” A polar pattern is a graphical representation of the microphone response to sound sources around it. Most dynamic vocal mics have a “Cardioid” polar pattern (figure 1.)

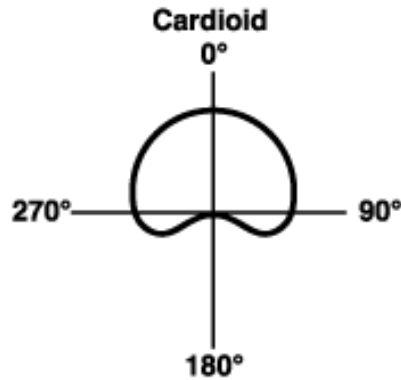


Figure 1. Cardioid Microphone

In this illustration, the front of the microphone is in the center, and sources directly in front of the mic are at the 0° point. Note that the microphone picks up most sounds directly in front, less sound on the sides, and none in the back. This helps to reduce feedback from the monitors in a live situation, as well as reducing bleed-through from other instruments. Make sure that the microphone you purchase is a true cardioid mic. Super-cardioid and hyper-cardioid models have modifications that allow them to pick up sounds directly behind the microphone (figure 2.)

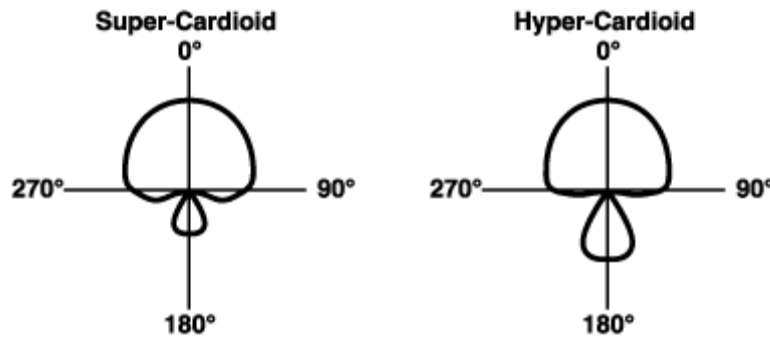


Figure 2. Super-Cardioid and Hyper-Cardioid Microphones

It should be obvious by now that cardioid microphones are primarily designed to pick up sound sources directly in front of the receiving end of the microphone, as illustrated in figure 3.

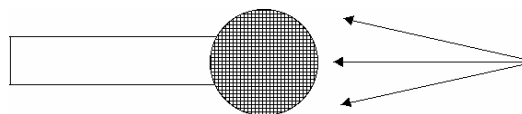


Figure 3. Sound Directed Into a Microphone

Note that there are three arrows representing the sound in figure 3. Sound does not travel in a straight line from the source, it radiates outward, expanding as it moves through the air.

The microphone should be held directly in front of the mouth, perpendicular to the body. Some vocalists will hold a microphone vertically, at a 90° angle in relation to the mouth (Figure 4.) While this type of placement will help eliminate plosives and sibilants, much of the acoustical energy emitted by the vocalist will be lost.

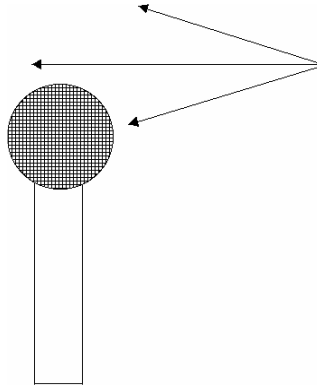


Figure 4. A Microphone Held at a 90° Angle

If plosives and sibilants are a problem, a 45° angle or less may be preferable, allowing the microphone to pick up much of the vocal energy with less of the expelled air (Figure 5.)

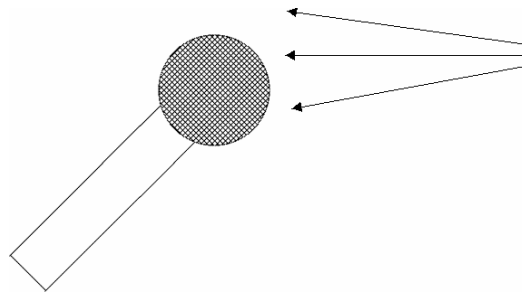


Figure 5. A Microphone at a 45° Angle

The distance from the mouth to the microphone can also make quite a difference in the sound. As mentioned earlier, sound radiates outward as it moves, so it follows that a closer microphone position will capture more of the sound before it disperses. Most dynamic vocal microphones possess what is known as “Proximity Effect.” When a sound source is within a few inches of the microphone, there is an audible boost in the low frequencies. This can make the voice sound more rich or full. As the microphone is pulled away from the mouth, these frequencies disappear. In fact, the further away the sound source, the less likely it is that the microphone will pick it up at all.

As a general rule, it is best to keep the microphone between one and two inches from your mouth. When singing softer or lower in your range, you can then move it closer. When singing louder or higher in your range, you should then pull the microphone back a bit. It is best to use your ears in

judging how far away the microphone should be. Some singers tend to overcompensate when singing high notes, and the volume is lost, as well as the advantage of the proximity effect.

“Eating the mic,” or pressing your mouth against the microphone is not generally recommended. This will increase the likelihood of plosives and sibilance, as well as potential damage to the mic’s diaphragm as a result. In the context of a loud rock band, vocalists often find themselves having to eat the mic in order to be heard. However, it is better to ask the sound engineer to turn your microphone up in the monitors, in order to avoid this.

Instrumentalists who sing must pay special attention to the placement of the microphone stand. First of all, you should always use a stand with a “boom” attachment, which allows you to angle the microphone so that you can easily reach it. In addition, the microphone should be placed so that you can sing directly into it without extending your neck. In other words, when setting up the microphone, stand or sit in front of the stand, and position it so that the microphone is directly in front of your mouth, within two inches. It is often advantageous for the drummer/vocalist to invest in a headset microphone, so that he or she will have complete freedom of movement while singing. Extending the neck to reach a poorly placed vocal microphone will often lead to neck tension, which vocalists must avoid at all costs.

An instrumentalist can use proper microphone technique by moving his or her body closer or further from the microphone when needed. Obviously, a headset microphone precludes the use of such microphone technique, and it would be wise to invest in a dedicated compressor/limiter, as not all engineers will have one to spare. This will ensure that you do not overload the mixing board when singing high notes at loud volumes, yet your voice will not be lost in the mix when singing softer.

Effects Processors

The use of effects processors for live vocals can often make the vocalist’ job easier. Many engineers will compress the vocals as a matter of course, and it is not unreasonable to ask for it. In addition, reverb is quite commonly used with vocals. In fact, most vocalists prefer to have reverb applied to their vocal sound, as it tends to “smooth out the rough spots,” allowing the singer to achieve a good sound without having to work quite as hard vocally.

Be aware, however, that sound engineers do not always think to add reverb to the monitor mix. If you are accustomed to hearing reverb in the monitors, don’t be afraid to ask. Many vocalists are afraid that engineers will think they have an “attitude” if they ask for too much. However, as long as you know exactly what you want, and you know how to ask for it, the engineer will respect you. Mutual respect between vocalists, instrumentalists, and sound engineers is imperative, and as long as you can speak their language and know what you are talking about, this will be achieved.

Practicing Proper Microphone Technique

Rehearsing with the vocal microphone is extremely important. It is never a good idea to go out and buy your first microphone an hour before your first gig. You must become accustomed to working with the microphone. It should be second nature before you ever step out on the stage with it.

It is also wise to practice through a small P.A. or dedicated vocal amplifier, as well as a compressor and reverb unit, so that you become familiar with the settings that best suit your voice. This will allow you to let the engineer know exactly what you need.

Vowels, Placement, and the Microphone Singer

Several issues regarding vocal production should be remembered when using microphones:

1. A smaller, speech-like mouth position should be maintained as often as possible. A long mouth position will result in an unfocused sound, and the singer will ultimately be forced to work harder to achieve any sort of volume.
2. Forward vocal placement is imperative when working with a microphone. This is why it is best to concentrate on vocal resonance in the “mask,” rather than somewhere in the back of the head.
3. Dynamic microphones often detect bright vowel sounds more easily than dark vowels.

Of course, one of the pure vowel sounds conforms naturally to the above criteria. The *ee* sound (as in the word “feed”) is the brightest of all the vowels, and is naturally placed the furthest forward. The back of the tongue is usually raised when vocalizing an *ee* sound, facilitating such forward placement by forming a narrow, “trough” for a more focused stream of sound to travel through. Certain aspects of the *ee* sound can be (and often are) used in conjunction with other vowel sounds to aid in forward placement and increased brightness.

The *oo* sound, while not necessarily very bright, still resonates in the mask, due to a similar tongue placement as the *ee* sound. This sound can be brightened and placed further forward by forming an *ee* sound with the inner mouth, while retaining the *oo* formation in the lips.

Another pure vowel sound is *ah* (as in “draw,”) which is darker and usually resonates in the back of the mouth, and sometimes even in the throat. As alluded to earlier, the mouth position can be horizontally wide as opposed to vertically long, and still make it sound like an *ah*. The tendency in an *ah* sound is to lower the back of the tongue, creating more space in the back of the mouth for the vocal sound to occupy. However, the singer can concentrate on a tongue position similar to that used in the *ee* sound when singing an *ah*, which will aid in forward placement and brightness. The smile technique is also quite effective for this purpose, as the back of the tongue is naturally raised when we smile. However, take care not to smile too wide, and avoid facial tension.

The pure vowel sounds *eh*, *aa* (as in the word “that,”) *ih* (as in “bid,”) and *uh* (as in “run,”) pose a different problem. Basically, they tend to be slightly unpleasant sounds in their purest form. Pop singers will often mix a bit of *ee* into the *eh*, *aa*, *ih*, and *uh* sounds, lending them more vitality and energy. This is once again achieved by adopting a similar tongue position to the *ee* sound.

Many pop singers take a slightly different approach to vowel sounds with diphthongs. The sound *ai*, for instance (as in the word “pay,”) which includes the diphthongs *eh* followed by *ee*, is a good example. It is not uncommon for a pop singer to quickly sing through the first diphthong (*eh*) and linger on the second (*ee*.) Not all pop vocalists sing quickly through the first diphthong, but they usually give equal time to both. An identical approach is usually taken with the other diphthong vowel sounds. Table 1 illustrates the different diphthong vowels, and the pure vowels they contain. The underlined phonetic vowel sound is the one that is often emphasized.

Table 1. Vowel Sounds with Diphthongs

Vowel Sound	Word Example	1 st diphthong	2 nd diphthong
Ai	“pay”	eh	<u>ee</u>

Aye	“my”	ah	<u>ee</u>
Ow	“now”	aa	<u>oo</u>
Oh	“low”	ah	<u>oo</u>

Note that the vowel sounds often favored are the more focused sounds *ee* and *oo*. Even in situations where the pop singer won't favor these second diphthongs, they will still adopt the raised *ee* tongue formation in the first diphthong. It should also be noted that traditional voice teachers favor the use of the diphthongs *ah* and *oo* for the *ow* vowel sound. However, in everyday speech, we use the *aa* vowel sound rather than *ah*, and most pop singers practice this as well.

The voiced consonant “R” can also be used in a similar way, sung as if it were a vowel. However, this varies from singer to singer. Some pop singers don't sing “R” sounds at all, while others feel perfectly comfortable singing a long note on an “R” sound. At one time, singing through an “R” sound occurred only in Country and Western music. Today, however, it has become an accepted practice in almost all popular music styles.

Beyond the obvious advantages of this system in directing vocal energy into the microphone, use of the brighter, focused vowel sounds makes sense from a practical standpoint. The pop sound is brighter, more forward, and usually consists of little to no vibrato. When singing in the higher registers, the result will sound much like shouting when coupled with the classical vowel shapes, and it will often require much effort and vocal strain on the part of the singer. Taking advantage of a more focused inner mouth position, combined with good breath support, usually results in less effort, which translates to less vocal strain.

Keeping Your Voice Healthy

Due to the nature of the style, vocal problems are fairly common in pop music. Many pop singers are untrained, and do not know how to take care of their voices. The first step in maintaining a healthy voice is finding a voice teacher. Many pop singers are afraid that a voice teacher will ruin their vocal style. In truth, this may have been true even 20 years ago. However, today there are a number of excellent voice teachers out there who specialize in helping pop singers achieve the vocal style they desire in a healthy way.

The voice is a delicate instrument, and any vocal problems have the potential to end your career as a singer in a moment. A voice teacher can be an objective voice, letting you know if you have fallen into any bad habits. When seeking a voice teacher, shop around, and find a teacher who is absolutely committed to helping you find your sound, rather than forcing you to sound like something you are not.

When you arrive at a gig, the most important items you should have in your hands are your microphone, mic cable, and water bottle. Drinking plenty of water when you are singing is essential. Your vocal cords are much like the moving parts in a machine. Quite a bit of friction is produced when your vocal cords vibrate together. Moving parts in a machine need lubrication, and water is the best lubricant for the vocal cords.

It is best to avoid sugared drinks and dairy products before and during a performance. These can produce phlegm on the vocal cords, which must be avoided. Products containing caffeine or alcohol will dry out the vocal cords. Smoking, of course, is also detrimental to the voice.

Poor speech habits can also adversely affect your voice. Speech requires as much breath support as singing, but we often do not think to support our speech. Persistent speech in the lowest register of your voice can also wear it out quicker. If you feel you have developed poor speaking habits, a good speech therapist can help you find your optimum speaking range. In addition, avoid shouting whenever possible.

Putting It All Together

To ensure the longevity and success of your pop singing career, remember the following points:

- Initiate every sound from the breath.
- Diction should be as speech-like as possible, and voicing inner-mouth consonants as far forward in the mouth as possible will aid in the intelligibility of the lyrics.
- Bright, focused vowels and forward placement are beneficial to the use of the microphone, and are integral to the pop vocal style as well.
- The shoulders, neck and head should always be relaxed.
- The microphone is your friend. Find a microphone that suits your voice, and become familiar and comfortable with it before you use it on a gig.
- Learn to correctly use the microphone to compensate for dynamic variations in your voice.
- Establish a good rapport with the sound engineer, and learn to speak his or her language.
- Drink plenty of water when you are singing.

The combination of good breath support, an open throat, and focused, bright vowels with forward placement will aid in singing with strength and accuracy, especially on high notes.

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