Of Mics And Men by Sheri Gould

As a vocalist I may spend hours in preparation. I may work hard with my vocal team and my band for an upcoming time of worship or song presentation. When the final moments before I sing approach there are two things that I am really counting to work: my microphone and my sound man (or woman).

Although there are sometimes variables that we can't control. There are some things we can do to insure that things go smoothly once we get on the platform for the final culmination of all of our preparations. One of the first things is to understand the microphone we use and how to use it.

There are two basic types of microphones that are appropriate for our use on the church platform: dynamic and condenser. Understanding the difference between the two can make a big difference in terms of which mic we choose for our application and the technique we employ while using it.

Dynamic Mics are generally more rugged and can take abuse a bit better than condenser mics. They have no internal electronics and are usually considerably less expensive than the average condenser mic. Although they are somewhat more limited in their frequency response, the great thing about a dynamic mic is that it can be used on a small stage with less danger of picking up the surrounding sounds—such as the guitar amp next to you. Because of this, and the reasonable cost, dynamic mics are more often than not the microphone of choice for many church platforms.

The very thing that makes this microphone so user friendly for the average church platform is also the thing that causes the church sound guy much frustration. The pick-up on this type of mic is of medium sensitivity. Therefore it needs to be used close to the source (in this case your mouth!). These mics work the absolute best when your lips are about 1 inch directly in front of the center of the top of the mic. So it's always best to point the mic directly at your mouth—*not* on an angle or with the mic resting on your chin so that the tone goes *across* the mic. You want the tone to go directly into the mic.

There are some folks who don't like the look of a mic plastered to their lips, so they may roll the mic off at a bit of an angle. If you do this, you will lose some response on the mic, but your face becomes more visible to the congregation. This is up to you. You may also find that with the mic placed properly you get a lot of "P" popping. This can be controlled with technique or once again you can opt for angling the mic away below your lips or slightly off to the side, to help—you will lose some response (that's why the "P" doesn't pop) but it might be worth it to you to not have to worry about those pesky "P's".

If you are inconsistent with your placement of a dynamic mic, you will notice a serious change in response. Simply moving the mic from 1 inch to 2 inches away from your mouth can cut the response 6 decibels, which to our ear sounds like the volume level is cut in half and if you double it again to 4 inches, you'll lose another 6 db of level! (Inverse square law) Not only that, but you'll notice a serious loss in bass frequencies when you move away from the microphone as well. (Proximity effect)

INVERSE SQUARE LAW

The first reason is the inverse square law. **If you hold your mic a half-inch from your lips it receives a given amount of sound energy from your voice. Move it twice as far -one inch- and it receives one-fourth as much energy. That extra half-inch takes away three-quarters of the efficiency of your sound system. While good mic technique involves "working" the microphone, singers**

that fully extend their arms when reaching for that climax, are usually doing it for dramatic effect. Small changes in distance from the mouth can result in very dramatic changes in sound level.

Condenser Mics

Condenser mics are much more sensitive than the dynamic mic. They have a much wider frequency response and you may find that on certain condenser mics you really like the sound of your voice better. This microphone is more capable of getting those extra high and low frequencies in your voice that the dynamic mic misses. They are also able to pick you up even if you aren't an inch away. Condenser mics are what we use to mic choirs, or to put on a lapel mic so you don't have to be right up on it in order to get picked up. As you hear the better frequency response, it can be encouraging. They also respond to sound much faster than a dynamic. This accounts for their accuracy and in their ability to reproduce the nuances and subtleties in a performance. This is why condensers are more often the microphone of choice for micing vocals and acoustic instruments in a recording,

Sensitivity however, is a two edged sword. A condenser mic can pick up everything in proximity on the stage! This is especially true on a smaller platform when many musicians may be very close to you. This can cause problems with your sound man as he tries to control the individual sounds; he can't isolate each sound. In other words, your vocal mic could also be picking up other undesired sounds, i.e. drums, guitars, monitors. A less sensitive mic may help in preventing some or all of the other sounds from leaking into the system.

Condenser mics are more expensive. They also require "phantom power". The phantom power comes from the mixer and most mixers have it.

Proximity Effect

The bass response of all directional microphones is increased as the signal source – your voice – comes closer to the mic capsule. This is called Proximity Effect and it becomes apparent at a range of one foot and increases as the distance of mouth to mic decreases. For speakers or singers with high or thin voices, proximity effect can boost the bass, filling out the sound.

Mic technique with a condenser mic really needn't be much different than the technique you use with a dynamic mic but you may find that you don't need to 'eat the mic' quite as much. So make sure that you find and use the right placement for your mic and then *be consistent*. Even the best sound man cannot make up for your poor mic technique! It can be the source of many of your sound problems. God bless you as you serve Him.