

Contemporary A Cappella

Amplifying Your Group

by Rob Dietz with Trist Curless

While the human voice is at the core of contemporary a cappella music, we must acknowledge the important role that amplification plays in modern pop a cappella. Many ensembles struggle with amplified sound, whether mastering mic technique, choosing the right equipment, or understanding the mixing techniques unique to the style. The following interview with Trist Curless will help demystify some of these challenges. Curless is sound engineer for Pentatonix, Straight No Chaser, and Take 6 as well as former bass vocalist with The Manhattan Transfer and m-pact.



Let's say a group is getting on mic for the first time. What do they need to be thinking about?

I'm surprised by how often singers aren't given a moment to just learn how the mic works. Every microphone is different—there are different styles and brands. If you know what microphone you're going to use with your group, give your singers a moment to play with how it sounds depending on where they place it. The sound drops off very quickly the farther away you hold the mic. Usually, holding it an inch away is about right. It's important to develop your singers' awareness of how mic distance impacts their sound. It can be closer for moments that need more low-end presence (more on that in a minute), and farther away for big, belty moments!

For the rhythm section (bass and vocal percussion), the mic is an even more important part of the sound and is usually very close to the mouth. It's basically its own instrument! Cupping the mic can add a whole different dimension to the tone.

What do you mean by "cupping" the mic, and how does it change the sound?

Cupping the mic means holding it with your hand covering the grille (the metal mesh you sing into). That causes the plosives we're amplifying to be focused right into the mic. Beatboxers do this a lot to add extra thump to their sound. The trade-off is that it cuts down on high-end frequencies, so it may not be the best approach for every beatboxer…and it should be avoid-

ed by the rest of the singers. (Regardless of how much they have seen other performers do this.)

Bass/VP singers often take advantage of the "proximity effect" when they're on mic. Can you tell us what that is and how it works?

If you're talking about a microphone like the Shure Beta 58 or SM58, the proximity effect happens when you're close to the microphone. The lower frequencies become amplified at a more exaggerated rate than the high end. The entire signal gets bigger as you get closer, but the lower frequencies especially tend to get much bigger when you're super close. Sometimes that's detrimental. As a vocalist, there are parts where you may not want that sound, whereas the bass and drums really love that boost. It's an essential part of the sound that allows them to not push as hard.

Going back to the ensemble, how does a group's blend change on a mic?

In terms of vowels and tone, the work a group has to do to blend remains the same. The biggest difference with a mic has to do with volume and balance. Groups have to think about that acoustically, too, but add the mic, and they're dealing with a mic and their voice together to achieve the balance they are after. It adds an extra dimension.

Speaking of the sound board, let's talk about gear. What sound equipment does a typical high school or college a cappella group need?

You need a mixing console with at least enough input channels for the number of singers you have, but it's best to have more than the minimum. Also, be sure it has the outputs you require. You need microphones, monitors, and main speakers. These days, most monitor and main speakers are powered, or "active." An active speaker has an amplifier built into it, which makes the sound louder. Ideally, you'll want a subwoofer as well, which gives added presence to your bass and drums. Here are some gear recommendations:

Mixing Consoles:

1. Allen & Heath Qu-16 or SQ-5
2. Behringer X32 Yamaha TF1

Microphones (wired/wireless):

1. Shure SM58
2. Shure Beta 58

Monitors:

1. Sennheiser e835 Monitor Speakers
2. JBL IRX-112BT
3. Mackie SRM550 1600W 12-inch Powered Speaker
4. QSC K10.2

Subwoofers:

1. JBL EON618S Powered Subwoofer
2. QSC KS118 Powered Subwoofer

Once we have our gear set up, what do we need to do to get a basic mix happening?

First, check each microphone by starting with the gain all the way down [this is usually a knob on your mixing console]. It's important to understand the difference between gain and volume. Imagine there's a magical ball of sensitivity around the microphone. As you turn up the gain, that ball gets bigger. Essentially, gain controls how sensitive the mic is. Volume is how loud you make the sound you're receiving from the microphone in the mix. Have the vocalist sing normally and slowly turn the gain up until the level meter peaks just above green into yellow. If you hit red, you've gone too far and the sound will distort.

Now take one of the microphones you've set the gain on and go to the monitors. Start the monitors at zero and turn them up slowly. You might notice certain frequencies of your voice sticking out. That's where EQ comes into play! EQ allows you to turn frequencies within your sound up or down. Most of the time, you want EQ to be subtractive rather than additive, with the goal of lowering frequencies that are too loud. For most voices, we often use what's called a high-pass filter (meaning the high frequencies pass through while the low frequencies get cut). Cutting frequencies below

around 150-200 Hz leaves more space for the bass in the mix. Do not apply this to the bass and percussion mics.

Two other common effects used in a cappella mixes are reverb and delay. Reverb allows you to simulate an acoustic space so the mix sounds more natural and buoyant. Delay is generally used in two ways: very short delay adds depth to the sound while long delays add… delay… delay… delay. In a cappella, we sometimes add what's known colloquially as an "octavizer" to the bass—an artificial double of what the bass is singing, one or two octaves down. This can be accomplished with pitch shifters built into your mixing board or with separate effects pedals.

Any final words of advice?

If you're going to use mics, try to rehearse on them as much as you can. My ideal is to rehearse on microphones the same percentage of the time as I perform on microphones. Why get good without them if you're never going to perform without them? Bass and vocal percussion especially, because their sound is most impacted by the mics. Give them a little amp so they can be on mic even when the group is rehearsing acoustically. I know not every group has regular access to mics, but do as much as you can so you can get used to the sound. CJ

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