

School Sound

Sound Advice For Today's Sound Operator

Winter 2012

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Wrong Microphone Dilemma

Imagine you are the sound operator for the annual musical. Several microphones are on the platform. After the opening group song, a soloist picks up a microphone and starts to sing (Figure 1). You confidently turn on the microphone used during rehearsal. The soloist starts singing, but, to your horror, there's no sound. Sweat breaks out as many thoughts race through your mind: Is there a bad microphone cable? Did I turn up the wrong microphone channel? Is the microphone broken? Or did the microphone get put back on the wrong stand

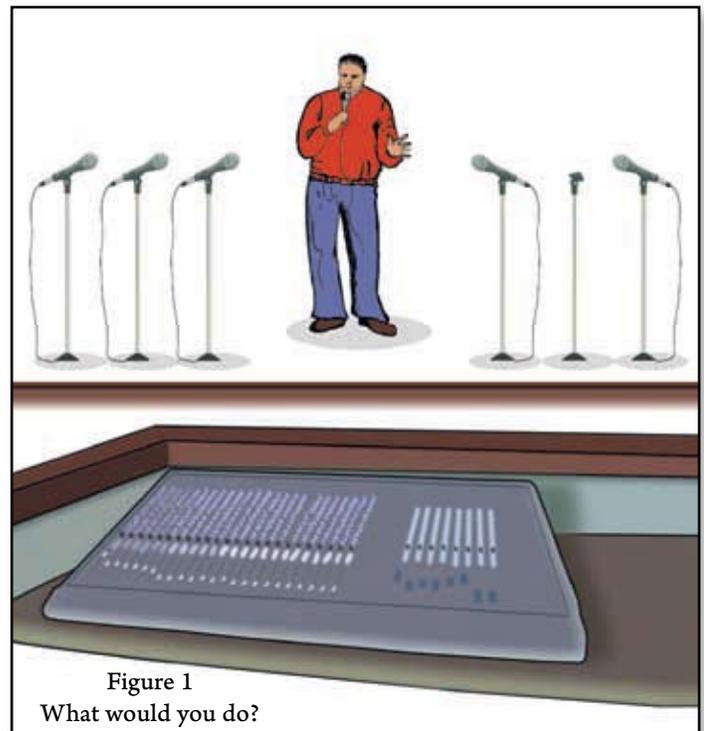


Figure 1
What would you do?

and the microphones are now mixed up? Quickly you check the other microphones. Yes, the microphones did get switched. However, in the pressure of the moment, the correct microphone is turned up too

loud and a sudden feedback squeal fills the room. More sweat breaks out as it seems everybody is now looking at you. Here are a few ideas to prevent this embarrassment.

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Tech Talk

Gain Structure

Gain structure is basically a fancy way to describe the volume settings for each sound source in a “mix” of sounds. Setting the gain structure properly minimizes the amount of noise through the sound system. This article gives you two sets of steps to correctly

If you cannot achieve enough volume before feedback (a hollow ringing sound) appears, you will need to turn the volume control down and have the talker speak louder or move closer to the microphone.

4. Now have the instrument play or the talker speak into his microphone. Move the channel fader for that input up to the “0” position.
5. Slowly adjust the “gain” control until the volume from the sound system is favorable.
6. If the “gain” control is fully counterclockwise and the volume is still too loud, check to see if your mixer has a “pad” button. Pushing this button down will decrease the input level (often by 20 dB). Now you will be able to control the level with the “gain” control.



set the gain structure for your mixer. Follow the first set of steps if you have a basic six- or eight-input mixer. Otherwise, follow the “Mixing Console” set of steps.

Basic six- or eight-input mixer/ amplifier

1. Turn all the individual channel volume controls down (counterclockwise).
2. Adjust the master volume control to about the 12 o’clock position.
3. Choose one of the primary channels (podium). Have a volunteer speak into the microphone while slowly turning up the volume control for that channel. Adjust the control until you achieve the desired volume from the sound system.

If the channel volume control is very low or very high, adjust the master control to compensate.

4. After you have adjusted the first channel, move on to the other channels and perform the same procedure.
5. After you have finished setting all the channels, you can use the master volume control to fine tune the overall volume.

Mixing Console

This type of mixer has some additional controls which need to be adjusted.

1. Move all the individual channel faders down to their off position. That is usually indicated by the -∞ sign.
2. Turn the channel “gain” (or trim) control down or counterclockwise.
3. Bring the master output fader up to the “0” position or the heavy hash mark. One manufacturer marks this position with a “U.”



General Tips

1. As the number of “on” microphones increases so does the potential for feedback. Keep microphones off when they are not being used. A sound system operator can turn the channels on and off or you could use microphones with switches. Another option is to use an automatic mixer for your speech microphones. This type of mixer will turn the microphones on and off as needed.
2. As more channels are added, the overall volume will likely increase. This can be compensated by lowering the master fader a bit or lowering each channel fader.
3. When mixing multiple instruments and vocals, listen for what is too loud and bring it down rather than increase the level of everything else. That will help keep the overall volume level under control.
4. On systems with a mixing console and separate power amplifier(s), you may also need to adjust the input level control on the amplifier(s). If you do not have good meter movement on your mixer or there is a lot of noise (hiss) from your loudspeakers, then turn down the input level control on the amplifier(s). You will need to repeat step 5 in the “Mixing Console” section again. **Warning:** Please do not attempt this unless you have a thorough understanding of your total system. Please call if you need help.

■ By Ron Huisinga

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Training

First, train the musicians or actors to always use the same microphone during rehearsal and the actual performance. If a microphone is taken off a stand, the microphone needs to go back to the same stand.

Color Identification

Color coding the individual microphones can help you and the users keep the microphones properly identified. Several methods work well. Pick a method you like and implement it.



Figure 2
Color coded Windscreens and Cables

Windscreens

Windscreens or pop filters are available in many colors (see Figure 2). A windscreen is placed over the microphone grill screen. The windscreens are very visible and assure easy microphone identification at a distance. Be sure to choose the correct type and size for your microphones.

Cables

Microphone cable is available in at least eight colors. A few colors are shown in Figure 2. Some manufacturers even have neon colors. Using colored cables versus windscreens may be more acceptable for some people.

It keeps the color away from the performer’s face. However, a colored cable is probably less noticeable, so it is harder to identify at a distance.

Connectors

Another option is to use microphone-cable connectors which have color strain relief boots. This method is much harder to see at a distance, but it is easy for the performer to identify the correct microphone.

Plastic Tape

Simply wrapping the microphone or the cable with electrical plastic tape of different colors can provide a quick method of identification. However, this method can be a bit messy after the tape ages. There is often a gummy mess when the tape is removed.

Choose a method that will work for you. It may prevent an embarrassing moment!

■ By Ron Huisinga

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