

Miking a Bluegrass Band

Here's a letter from a bluegrass musician asking for advice on miking his band.

I am playing in a bluegrass band (guitar, banjo, mandolin or fiddle and bass) and we are struggling with getting a better sound. Can you recommend some condenser mics?



Suggested mics:

GLM-100 miniature omni mic for instruments, CM-200A cardioid mic for vocals.

GLM-100 mic techniques:

Acoustic guitar: Tape or clip the GLM onto the guitar body by the edge of the guitar sound hole. Keep it away from the musician's pick action.

Banjo: Tape the GLM onto the bridge or onto the drum head about 2" from the edge of the banjo.

Mandolin: Tape the GLM onto the mandolin body near an f-hole, or use the supplied clip to position the GLM near an f-hole.

Fiddle: Rubber-band a small foam windscreen around the GLM cable about 1.5 inches from the mic capsule, and stuff the foam into the fiddle tailpiece. Position the GLM midway between the tailpiece and bridge, with the mic "floating" over the body of the fiddle, facing it.

Bass: For best gain-before-feedback, tape a GLM-100 near an f-hole and roll off the excess bass on your mixer. For best sound, tape a GLM-100 cable to the bridge.

As for the CM-200A vocal mic, put on the foam windscreen, allowing a little airspace between the windscreen and the mic grille. Sing with lips touching the windscreen to reduce breath pops and increase gain before feedback.

Roll off some bass (low-frequency EQ) on each instrument until the sound is natural. Same for the CM-200A if you want a little cleaner sound.

Some bluegrass bands are miking the entire group with one or two cardioid mics, such as the Crown CM-700. For details see this article online:

http://www.crownaudio.com/mic_html/onemic2.htm

What's Inside

- Miking a Bluegrass Band
- Miking a Stage with Shotgun Mics
- CM-311A Pop Filters
- I Can't Hear the Actors!
- Miking a Fiddle
- Wiring for Legacy PZMs

Miking a Stage with Shotgun Mics

Crown mic user Gary Sanborn asked this question:

Is there such a thing as a short shotgun microphone that could be used at several positions along the edge of a stage? I want to limit coverage to specific areas of the stage to minimize interference between multiple microphones.

Reply:

We'd recommend the AKG C568B. It's \$579 list or \$429 street and has very good specs -- wide, smooth response and low noise. Being a short shotgun, it has a hypercardioid pattern below 500 Hz and a shotgun lobe pattern above 500 Hz.

Since shotgun mics are very directional at high frequencies, you might need 5 or 6 shotguns to avoid losing high frequencies when the actor is off-axis of the closest mic. For example, an actor might be 45 degrees

off axis to two shotguns when standing between them. Shotguns roll off in the high frequencies at 45 degrees off axis. That's why six shotguns might be needed, so that an actor never gets very far off axis.

We'd expect three PCC-160's to have 2 to 4 dB more gain-before-feedback than six shotguns. Also, the shotguns would have a little phase interference from floor reflections but the PCC-160s would not.

CM-311A Pop Filters

I traded up my CM-312A for a CM-311A. I noticed that there are three available pop screens. I don't understand the terms "2-stage/multi-stage."

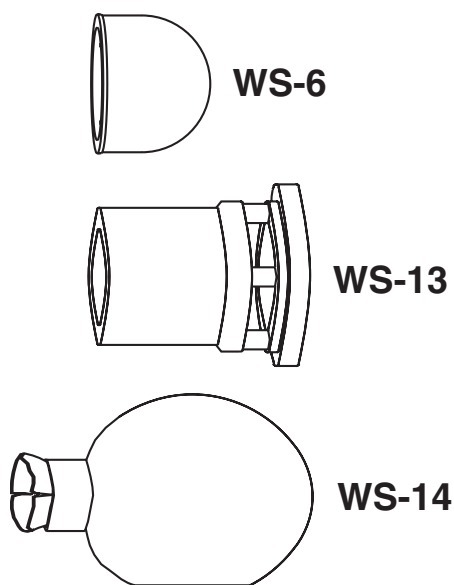
Mark Boucher

Reply:

The standard pop filter that comes with the CM-311A is the WS-6. Shaped like a foam hemisphere, it's the best choice for musical use because it gives the most gain before feedback.

The WS-13 is a multi-stage pop filter for broadcasters who don't need the gain-before-feedback, but need extra pop protection. It has a flat foam disk in front of a foam windscreen, and inside that foam windscreen is a foam liner of lower density. So it has three stages of pop protection.

The WS-14 is a 2-stage windscreen for broadcasters who need wind protection outdoors. It is a large foam windscreen with a low-density foam liner.



I Can't Hear the Actors!

Crown mic user *Iain* asked for some advice on stage miking:

I have to mike a stage 22 feet across and 12 feet deep with a music pit directly in front. I am having trouble picking up the vocals over the musicians. I need the mics to pick up speech as well as chorus singing. I have tried hanging mics and standing mics at the front of the stage. I can't mount floor mics on the stage because it is hollow under and all you get is footsteps.

Crown CM-31W hanging mic



Suggestions:

- Ask the director to ask the musical director to have the band play more quietly because they are drowning out the actors.
- Ask the director to ask the actors to talk and sing more loudly because they can't be heard above the pit band.
- Use wireless lavalier mics on the main actors. This option is expensive but works great.
- Make sure that the PA speakers are close to the audience and far from the microphones.
- Try using just two hanging mics (like the Crown CM-31), as close to the actors as possible, and use a graphic equalizer or automatic feedback suppressor (Sabine or Shure) to notch out feedback frequencies. For more information, go to www.crownaudio.com/pdf/mics/126678.pdf

Miking a Fiddle

The violin or fiddle projects its frequencies in complex patterns. So you may find it a challenge to find a spot where the fiddle sounds natural when picked up by a microphone. Here are some tips.

First, listen to the fiddle itself to make sure it sounds good. Correct any instrument problems before miking.

Now try a flat-response condenser mic (such as the Crown CM-700) about 2 feet over the bridge. This distant miking gives an airy, silky sound. Close miking (about 1 foot, Figure 1) sounds more nasal and scratchy, which might be desirable in old-time or bluegrass music. Also try miking the fiddle from the side. If the ceiling is low, reflections might color the sound. In that case, cover the ceiling over the fiddle with a sleeping bag or foam. Or have the fiddle player sit down.

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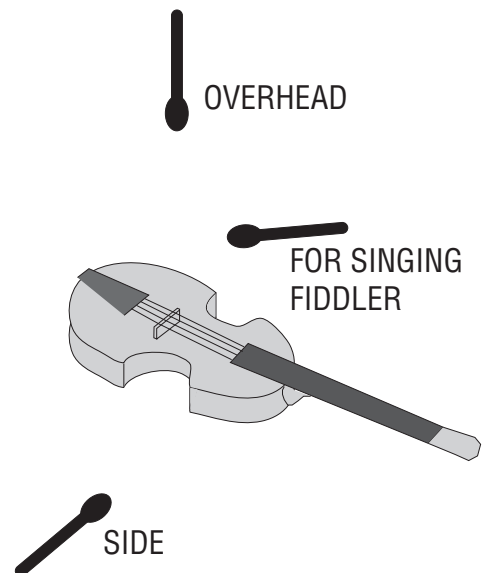


Figure 1. Three fiddle-miking methods.

Miking a Fiddle

(continued from page 3)

If you have to mike close -- say, for a singing fiddler -- aim the mic horizontally at the mouth about 6 inches away (Figure 1). The mic will pick up both the singer and the fiddle. A good mic choice here is the Crown CM-200A.

If you need more isolation, try a mini omni mic such as a Crown GLM-100. Wrap its cable in foam rubber (or a windscreen) 1.5 inches from the capsule. Wedge the foam under the tailpiece, and position the mic capsule halfway between the tailpiece and bridge, 1/2 inch over the body (Figure 2). If necessary, cut a little at 3 kHz to reduce harshness and boost around 200 Hz for warmth. Another option: clip the mic to the tailpiece and mount it over an f-hole.

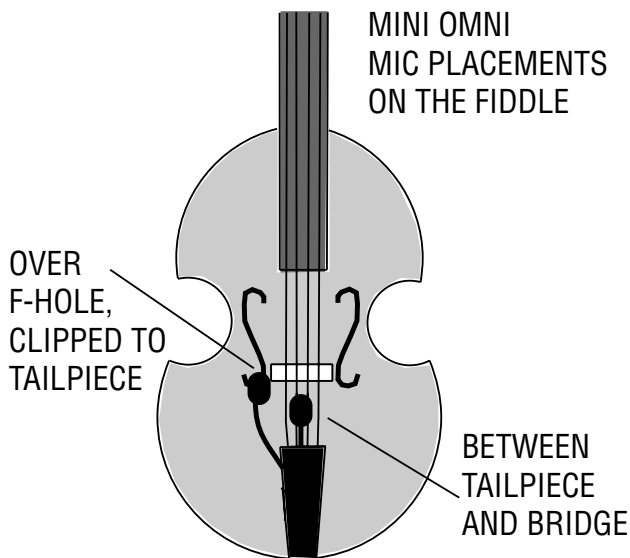


Figure 2. Two ways to close-mike a fiddle for isolation

Wiring for Legacy PZMs

The PZM-30GP, 6LP, 2LV, 20RM, 20RMG, 31S, 3LV, 3LVR, 2.5, and 12SP used PZM interfaces PA-18, PX-18, PX-T, or PX-TL. In those mics, pin 1 was ground, pin 2 was audio (high impedance unbalanced) and -18V, and pin 3 was +18V. Those pins got their power from a Crown PX-T, PA-18 or PX-18 interface (also discontinued).

The **PX-T** was a passive device that adapted phantom power to those legacy PZMs. The XLR outputs of those mics were unbalanced, high-Z, and were powered by a bipolar DC voltage. Each mic connected to a PX-T using regular 2-conductor shielded mic cable. At the output of the PX-T, the signal was low-Z balanced. It plugged into a phantom power supply. The PX-T converted phantom power to a bipolar DC voltage that powered each mic.

The **PX-18** was the same but worked off two internal 9V batteries instead of phantom power. It had a transformer to balance the mic signal.

The **PA-18** was the same but worked off two internal 9V batteries and had an active circuit to balance the signal.

Newer Crown mics, like the PZM-30D and PZM-6D, have their electronics built into the mic cantilever or its connector. You simply plug the mic directly into a mic input with phantom power. The output of those mics is low-Z balanced.