

# TECHNIQUES FOR RECORDING DRUM SET

## SNARE DRUM



*BY CHRIS MUNSON*

### **Overview**

The snare drum, above all other components, is almost always the definitive part of a drummer's overall sound. At virtually every major label recording session you can bet that the drummer has a rack of a dozen or so snares to choose from. Just browse any major music retailer's web site and look at the variety of shell size, depth, and type: brass, aluminum, maple, birch, walnut, and acrylic to name a few.

The seemingly infinite amount of choices provides an equally infinite amount of timbres. The size of the drum affects the depth and presence. The material used to make the shell affects the resonance and overtones. These factors (along with snare tension, dampening, and tuning) give you a wide array of sound possibilities ranging from bright and ringing to low, full, and dry.

Typically, a drummer shoulders the lion's share of responsibility in achieving a good snare sound when recording. A poorly tuned, maintained, and constructed snare drum is going to sound just like that. Before hitting a session (or live gig for that matter) make sure you have command over your snare sound.

One of the reasons that engineers are somewhat at the mercy of the drummer is the positioning of the snare in relation to the rest of the kit. The engineer typically has to finesse the microphone(s) through a small window of space surrounded by the hi-hats, hi-tom(s), and at least one cymbal. Additionally, the sticks have to be taken into consideration and enough room has to be left to ensure that the drummer does not strike the mic while playing time or fills.

However, this is not to say that the engineer has no influence over the snare sound.

Microphone choice still plays a significant roll in what is captured. The go to mic is typically a SM57 or similar dynamic mic with a tight cardioid pattern. As you may recall, dynamic mics can handle the impact of instruments with more explosive sounds and a tight cardioid pattern will reject much of the sound around it.

That is not to say that condenser mics can't be employed as well. In fact, small diaphragm condensers will often provided a crisper, brighter sound than dynamic mics. However, they are more likely to be used on jazz sessions or any time when the drummer is playing a little

more delicately. It is also common for engineers to use a dynamic mic on the batter side and a condenser mic on the resonant side.

## Placement

Microphone placement on the snare drum is somewhat limited. Ideally you want to place the mic at a distance that is far enough to capture the overall sound of the snare but close enough to reject the rest of the kit. Additionally, the angle of the mic in relation to the head affects the sound as well. Aiming the mic at a 45-degree angle is a good place to start. This gives you a balanced combination of stick sound and snare buzz / shell sound. Angling the



SM57



414

mic closer to the center of the head or the rim will give you more disproportionate combinations (more stick sound or more ring). I have used the following microphones on the recorded examples: Shure SM57 (dynamic), Sennheiser MD421 (dynamic), Neumann KM184 (small diaphragm condenser), Earthworks QTC30 (small diaphragm condenser), and an AKG C414 (large diaphragm condenser). The dynamic and small diaphragm condensers were used on the batter side of the head while the large diaphragm condenser was used on the resonant side.

The batter side mics were placed at a distance of 1", 3", and 6" from the snare. At each distance they were also placed at a 45-degree angle, 90-degree angle, and parallel to the snare head. The resonant side mic remained stationary. I placed it in the center of the drum, 1" from the snares, and facing up towards the resonant head. You will hear the batter side mic first then the combination of the two.

When combining two microphones on the snare drum, it is important to remember that the heads are 180 degrees out of phase with one another. This means that if you were to combine the two tracks 'as is' there would likely be some comb filtering and other phase issues that thinned out the snare sound. Usually engineers will utilize what is known as a phase / polarity reverse button on the resonant side channel. This button simply inverts the phase of a channel by 180 degrees.

I have deliberately played a series of single notes so that you can hear all the elements of the snare sound. Listen for attack, resonance, sustain, snare buzz, and shell ring. Notice a how slight adjustment in positioning as well as differences in microphone type (dynamic vs. condenser) varies your perception of these elements.

*Chris Munson is currently the Director of Recording Arts at Eastern Kentucky University where he teaches courses in music technology and applied drum set. He has been a professional musician and audio engineer for over 15 years. Over that time he has recorded or performed with: Don Aliquo, David Amram, Darol Anger, Danny Barnes, David Carradine, Vassar Clements, Jeff Coffin, Joe Craven, Jerry Douglas, Tom Harrell, Jorma Kaukonen, Jon McEuen, Tim O'Brien, Greg Osby, Anders Osborne, Merl Saunders, Jamey Simons, and Trout Fishing in America. Albums he has appeared on have earned numerous awards including two Grammy nominations.*