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SNARE DRUM MIKING: TECHNIQUES FROM THE FIELD

Chapter 4 of 6: Drum Microphone Expert Series

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SNARE DRUM MIKING TECHNIQUES FROM THE FIELD

Two top authors – audio veterans Mark Frink and Chris Huff – present an array of approaches and solutions for capturing snare drum sound.

Mark Frink

Mark Frink is a veteran touring sound engineer who has mixed monitors for numerous top artists, and he's also a noted free-lance tech writer.

In the beginning, the list of microphones on drums was minimal, even in recording studios. Before the arrival of rock 'n' roll in the late 1950s, with its steady emphasis on the 2-and-4 backbeat, putting a microphone near

the snare was out of the question.

The difference between country and western was the drums required to push western swing music, but it wasn't until the Grand Ole Opry moved to Opryland in 1973 that entire drum kits were even allowed on stage. By that time, miking the snare was as normal as nailing the kick drum to the riser.

Early models commonly used on snare include the Shure 545 "Unidyne III" and Electro-Voice RE-15. Introduced in the 1960s, the Shure SM57 dynamic remains a hard-working snare microphone. Besides the obvious "We've always done that," or "It's what's in the microphone box," there's a logical reason for this preference.

Some engineers still employ the age-old method of checking the PA by repeating the mantra of "check, one-two" into a vocal mic, and since there's no discernable difference between the sound of an SM58 and a 57, it's no surprise that the same engineer who tunes the system with a 58 finds the 57 sounds natural on snare (or any other close-miked instrument).

Tuning The Snare

Like the rest of the kit, if the snare sounds bad to begin with, you're likely to end up with a louder, bad sounding drum. Though drastic EQ can sometimes make up for shortcomings and help a bad drum sound better, there's no substitute for simply doing the deed of tuning the drum.

While entire books can be written on tuning drums, especially snares, a few easy rules are helpful, along with some simple tools. Before miking up a drum kit, it's good to know how old the heads are and when they were last tuned. A drum can go from bad to good with a few minutes and a drum key, but this annoying chore should be tackled early, before others need to be in the room.

Snare top heads ("batter") are usually coated with a rough surface to give brushes more sizzle, while bottom heads ("resonant") are uncoated and thinner. Regardless, both heads should be loosened and then tightened just enough to take the wrinkles out. By tapping the head lightly near each lug, the tension can be evened out so the tones all match.

Most methods for tuning the snare involve the bottom head being a few notes higher than the top head. A looser bottom head produces a fatter or "wetter" sound, while tighter produces a drier sound with more "pop." The fundamental tone of each head affects the other, so small changes in one head can produce dramatic results, creating a sound that's more muted, or more open, depending upon where you started out.

The timeworn method of tightening opposite pairs of lugs keeps the



head centered and evenly tensioned. The best drum tool is a drum key, but the second-best is a second drum key, and those who subscribe to this method – as many eventually do often tie them together with a lanyard. A second key not only speeds up the process, it more evenly tensions the drum, making it easier to tune.

Getting It Optimized

A snare drum with lots of resonance or ringing is often not what a live engineer wants, especially in a reverberant venue. Traditionally drummers (or their engineers) have resorted to adding a gaffe-tape damper, using a towel, or simply laying their wallet near the rim. Permanently installed cloth or felt often steals too much tone.

Another drum-roadie trick is the A-shaped ring. Either purchased as a drum shop product, or made from old heads, it creates a similar effect by dampening overtones. O-Rings and gaffe tape have been replaced by MoonGel, a stamp-sized sticky pad of gel plastic sold in 4-packs. Old drum techs will tell you they were using Blu-Tack adhesive art putty long before MoonGel arrived more than a decade ago. MoonGel (shown in the image below) is drum magic and every microphone kit should have some in the same slot with the drum key.

Microphone angle and distance make a difference. Too close and the snare sounds more like a tom as proximity effect emphasizes the drum's tone. Too far and isolation is lost as other drums and cymbals are heard



CREDIT: CAKEWALK

clearly in the snare channel and sent to any effects employed. The rule of thumb is two fingers between microphone and head.

An angle helps the microphone hear the buzz of the snare strainer from below when protruding slightly over the rim. Old-timers swear if you position the microphone correctly on a well-tuned head, catching the strainer from below with a second microphone isn't necessary.

That said, secondary snare input channels are those used with – as well as those used instead of – the main snare microphone. The time-honored “snare under” microphone is frequently chosen as a condenser or a bright dynamic to better catch the snap and crackle of the strainer, though it's equally common to simply use the same model as the main microphone. Reversing the polarity of the “under” microphone combines it in-phase with the primary microphone, which hears the drum from the opposite direction.

Another alternate snare input is the “side-stick,” commonly used for ballads, jazz or Latin music, where the drummer lays the stick across the head and lifts it to strike the rim on the right side. The sound is different enough that a second input is often needed to correctly EQ and add the right reverb effect.

The position for this alternate input is at one o'clock instead of ten o'clock, and is dictated by the practicality of getting a microphone in close where the stick strikes the rim. It's not necessary to get the microphone over the head and successful positions include some beside the shell.

Side-address capsules allow the microphone to sneak up beside the



snare from a number of angles because its vertical body more easily fits between the snare and the rest of the kit. Miniature microphones or lavaliers are often used for this application so they don't interfere with drumming, but they must be properly shock-mounted from the drum. Some mike the snare shell if it's wooden or the top if it's metal, while others prefer the sound of miking the air hole.

Brushes also require a different microphone, and a condenser helps to bring out their subtleties without resorting to drastic EQ. The use of an alternate microphone and channel allows entirely different EQ, dynamics



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and effects to be used by simply changing channels.

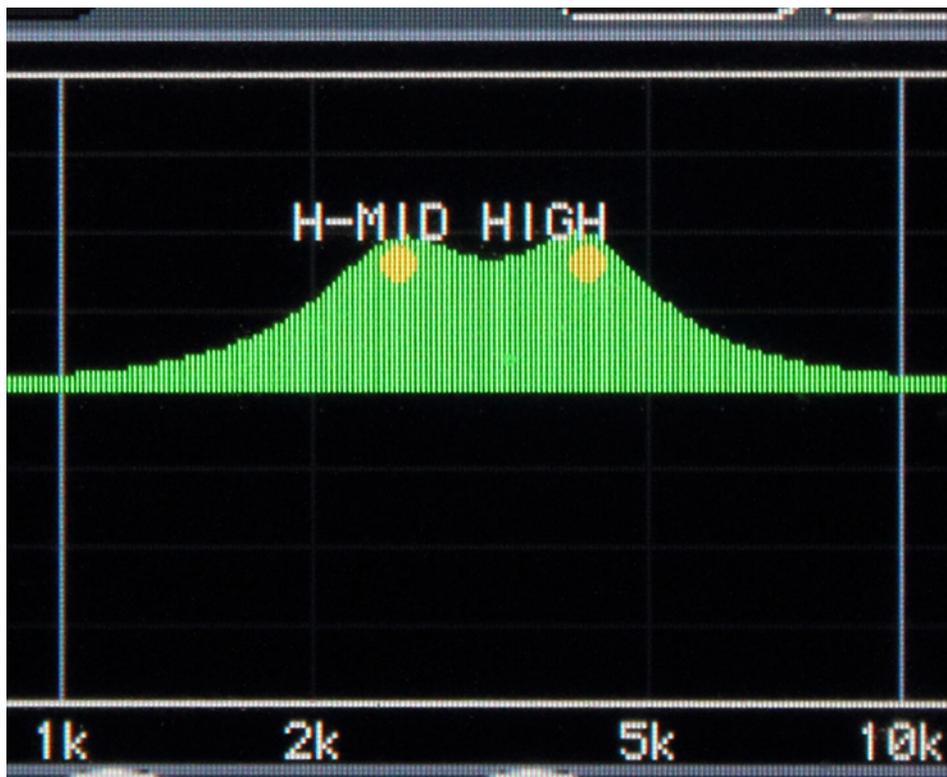
There are countless schemes for using multiple snare microphones with different effects, depending on the music, and it's not unusual for there to be several dedicated snare effects, some driven from a different microphones. I've also seen engineers simply Y-split the same microphone to two channels to achieve this. In smaller venues, where the drum kit and especially the snare – seems too loud, the best use of a snare microphone is mostly as an effect send, due to the amount of snare getting in other microphones. ■

Chris Huff

Chris Huff is a long-time practitioner of church sound and writes at Behind The Mixer (behindthemixer.com), covering topics ranging from audio fundamentals to dealing with musicians – and everything in between.

I created a frog. It wasn't intentional. Naturally, I'm not talking about a real frog, but look at Figure X. You'll never read a mixing book that says, "Make the snare's EQ curve look like a frog in water." (If you do, stop immediately and back away.)

Seriously, when it comes to snare mixing, the last place (literally) you want to be is behind the mixer. With that in mind, here are three primary factors I've identified in getting a good snare drum sound.



1: The Drum

Snare drums don't all sound the same, just like all acoustic guitars don't sound the same. Even with a house drum kit, a drummer might bring his own snare because of its sound. Know that each snare has a unique sound. This is the baseline sound for the mix. Use the same mic and the same EQ settings with two different snares, and you'll get two different results.

Consider the three different snares shown in Figure 1. Just by looking at them, you can almost hear the tonal differences. Material composite, drum size, drum head skin, all of these are factors. Even tuning makes a difference. Snares can be tuned to match whatever the drum tuner decides is to his liking. To generalize, there can be a low or high tuning (true for any drum).



Figure 1

Stand near the drum kit while the drummer plays the snare. This is the sound you'll be mixing with – not against. Don't try making it sound like something it's not.

2: The Microphone(s)

A mic should be paired with an instrument, and so it is with miking a snare. While several characteristics can make a big difference in how a mic treats sound, frequency response is a factor never to be overlooked. It alters the tonal characteristics of the snare drum.

Take just one snare drum from above, like the Pearl Chad Smith Signature, and apply three different mics – the result is three different sounds. And we haven't even touched the EQ. For comparison, Figure 2 offers the frequency response charts for the Shure SM57, Heil PR31 BW, and DPA 4099. (Note the charts with multiple lines are showing the differing frequency responses when not on-axis with the sound source).

In addition, snares can be (and are often) miked both over and under the drum. Here are a few combinations my tech friends have sent me: Audix i5s both over and under; Shure Beta57 over, Shure SM81 under;

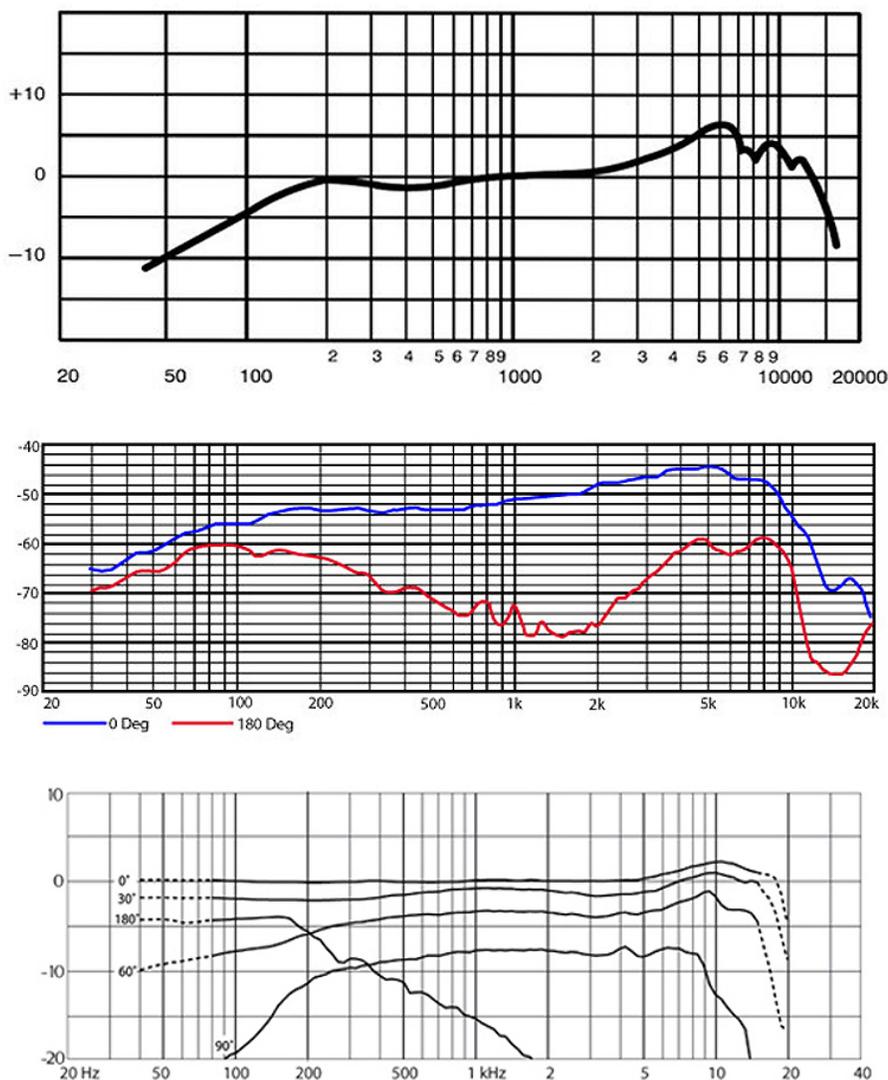


Figure 2

Sennheiser MD421 over, Heil PR31 BW under; Audix i5 over, SM57 under; Heil PR22 over, Sennheiser e904 under.

3: The EQ

Equalization should only happen after we listen to the natural tone of the snare and consider the mic(s) we're pairing with it. Here's an example: take a snare tuned high and pair it with a mic that has a large high-end boost. Want to cut the highs in the mix? It's not going to be easy as you're mixing against what is being sent, not mixing with it.

At this point, you can be as simple or as creative as you want. How do you want to mix a dual-miked snare? How do you want the snare to sound

for the song? It's not a matter of "how do I use the equipment?" but rather a matter of "what would sound right and how do I get there?" By having the right snare and mic combination, you've got the hard part out of the way. (I know this isn't always within your control.)

I like a single-miked snare. That's not to say I won't fall in love with a dual mic setup next week. But a single mic setup is a good place to start. By establishing a good single-mic sound, when moving into two mics, you already know how to get a good sound from one. Make sense?

Sum Of The Parts

The ideas that follow are based on my experiences and can serve as a starting point in capturing and mixing a snare. All of the sounds of the drum kit (and the whole band for that matter) have to be considered. The right sound for the snare for a particular song might be really flat on its own.

High-pass filtering (HPF). A mic like the SM57 has the low-end rolled off, and I'll roll off a bit more if I notice a positive impact on the sound. I'm not going to roll off more just to then flatten the snare sound. If you're running an analog board, hit the HPF switch and listen for a difference.

It's a good idea to remove low-end frequencies from all mics that aren't focused on a low-end instrument. For instance, use an HPF on vocal mics. Snare and cymbal mics, which aren't focused on low-end kit pieces, are another good place for applying an HPF.

Gating. I've never been quite happy with the results of gating snares, at least as it applies to general snare sound. I've gated the snare for a song to get a specific sound, but for all-around mixing, I tend to skip it. (Your mileage may vary.)

Out with the bad. I sweep the mid-range with a 6 dB cut and find the area of offending frequencies. You know, that area where you make the cut and suddenly think, "now that sounds much better." In the case of my "frog EQ," I didn't find that spot but rather found a huge boost was needed. Some days it's like that.

Sculpt To Fit

It's of real benefit to have a sound in your head that you want the snare to match. It's that internal reference sound. You know what sounds good, now make it a reality. Is there too much snap? Not enough? Perfect the way it is? (This is where that snare/mic pairing pays off.)

There's no magic formula for exactly what to boost or cut and where to do it. It all depends on the snare and the mic and the drummer and the room and... eh, you get the point. The take away is to do the homework: know the tone of the instrument, pair it with the right mic, and then step behind the mixer. A good snare sound is the very likely result. ■

About Audix Corporation

Audix is a U.S. manufacturer of high-quality dynamic and condenser microphones, as well as wireless microphone systems for the live sound, recording, and installation markets. From concept to completion, Audix's on-site research and development team combined with an in-house manufacturing facility, enable them to proudly provide products from their headquarters in Wilsonville, Oregon.

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