

SF-12 & R-121 Review

By Jon Cohan with Sean Carberry

The recording community, much like the drumming community, has lately seen resurgence in interest in vintage gear, especially old microphones and related equipment, like mic pre-amps and compressors. In the secret society of engineers and other recording geeks, there are few pieces of gear more revered than the illustrious ribbon microphone. Prized for their sweet and warm characteristic, they are a natural sounding but expensive alternative to the ubiquitous condenser mics that litter recording studios coast to coast.

A ribbon mic is exactly what it says it is: a small, extremely thin ribbon – of aluminum, in this case – suspended between two magnets, that senses the movement of air created when a sound is made and transforms that energy into an electrical signal. The beauty of ribbon mics is that they produce a very organic and cozy signal. Sounds simple enough, and our story would end there, except that it seems that most of the great ribbon mics of the past are exceedingly hard to come by, and therefore in high demand, and henceforth and to wit, very pricey. Another problem with the classic ribbon mics is that they are bulky, fairly fragile, difficult to repair and sensitive to high sound pressure levels (SPL's). These truths are so self-evident that, although they have played a large part in producing some of the all time great drum sounds, ribbon mics were never really allowed to get too close to a drum for fear of blowing or ripping the ribbon. And I don't need to tell you the kind of hellstorm that might unleash.

"So," you are asking yourself at this point, "what does this have to do with me?" Well, if you are a drummer who does any amount of professional or project recording, this has a lot to do with you. The search for the Holy Grail of microphones has always been for a ribbon mic that can handle the high SPL's that come from, say, a bass drum, floor tom, or guitar amp. Since ribbon mics like the famous Coles 4038 were used as overhead drum microphones or distant room mics on classic recordings by bands like The Beatles and The Rolling Stones, everybody wants to recreate that great vintage sound. But until Royer came out with their two new models of microphones, both of which are durable, small, and well designed, that wound was out of reach to all but the most affluent engineers and studio owners.

The mono Royer R-121 and its stereo counterpart, the Royer/Speiden SF-12 not only provide classic ribbon mic sound at a competitive price, but the company also developed a product that can stand

much higher SPL's than any other ribbon mic on the market. That means you can put the Royer fairly close to the front of your kick drum, tom or hand drum and capture the realistic sounds of your instruments in all their glory onto tape (or DAT or hard drive) for posterity to hear.

For this review, engineer Sean Carberry and I took two different views of the microphones that Royer makes. While I am a drummer and drum tech with more than a passing interest in studio technology, Carberry is a seasoned pro, who teaches recording at Berklee College of Music. His most recent projects include soundtracks for several films and television shows including HBO's "Sex and the City" and the engineering credits on singer Susan Tedeschi's "Just Won't Burn," a CD that earned her a 1999 Grammy nomination for Best New Artist. Carberry and I tested the Royer mics at Rear Window Studio in Brookline, Massachusetts, which has a great live room for drum tracking. Carberry also used the Royers as drum mics at other studios on several diverse projects from neo-lounge jazz to rock and acoustic pop.

Our first test of the microphones was to compare them to many of the standard mics that are used for recording drums. Royer is actually the only ribbon microphone maker to advertise that its product can be used for close mic-ing of amps, drums and other big noise producers, and we wanted to test the mics to the actual limits of their endurance. The stereo SF-12 is a great overhead mic that does away with the hissy high-end coloration that many standard small-diaphragm condenser mikes produce. The SF-12 has an X-Y pattern (the staggered capsules are at a 90° angle from each other) that is used by many engineers to obtain a natural overhead sound. Because the capsules each have a figure-eight pattern, which means they pick up sounds within an area that describes the shape of the numeral eight, the stereo image of the mic when used as an overhead produces what is called a Blumlein array, which looks something like a cloverleaf pattern. What this means to the drummer is that the signal that goes to tape is lucid, and in the words of Carberry, "What you hear is what you get. The sound is sweet but unaffected." When isolated the SF-12 sounded an awful lot like what I heard when I stood above the kit. Some microphones don't respond well to equalization. They become colored and the result can be unflattering, but the Royers took EQ extremely well and never lost their distinctive sound character. The mono R-121 (also with a figure-8 pattern) can also be used in a pair as overheads, but Carberry noted they were not as rich in high frequency response as the SF-12 due to a slightly thicker ribbon than the stereo mic. That being said, they still make for excellent

overheads or even tom mics. But the R-121 really shines when it is used for a kick drum mic outside the front head or as a distant mic to capture the full ambient sound of a drum kit in a room.

Royer recommends using a pop filter when mic-ing the bass drumhead to avoid too much air, which would attack the ribbon and possibly damage it. We found this out the hard way when we put the R-121 about 2 inches from the front head of a 22' x 18' bass drum and subsequently tore the ribbon, unwittingly entering ourselves into history as the first people to blow a R-121 microphone (though apparently many have tried). Although we took some measure of pride out of our distinction as pioneers, we were relieved to find that the company offers one free re-ribboning as well as a lifetime warranty on the mics. The company also sells repair kits that Carberry found idiot-proof, meaning that in a pinch, even a drummer such as myself could fix the mic.

After a little experimentation, it seems the sweet spot for mic-ing a kick drum is anywhere from 2-6 feet in front of the kick. When using the mono R-121 as a kick drum microphone, the bleed of sound you get from the rest of the drum kit is balanced and fits in well with the whole mix; unlike some mics that often need to be gated to cancel out ugly coloration of the drums or cymbals.

Many engineers get their bass drum sounds by combining a mic inside the drum with an outside mic. Unfortunately, some of the most frequently used outside mics, like the Neumann U-87, are prohibitively expensive. Carberry and other engineers have been blown away by the sound quality of the T-121. It exceeded the performance of other mics that cost up to three times as much. The sound has wonderful articulation without becoming fuzzy or producing an annoying slap. The mic seemed to sound best off center and about 6 inches away from the head. Many of us have heard tales of fantastic drum sounds being made with just three microphones on the great R&B records made at Muscle Shoals and Columbia studios. Carberry demonstrated the technique by placing the stereo SF-12 overhead the kit and one R-121 waist high, about 2-3 feet in from of the kit. The result was a clear and warm rootsy sound that would be perfect for acoustic jazz and retro rock and blues. The SF-12 has also become Carberry's favorite room mic for picking up the stereo ambiance of the drums and other instruments in the studio.

Another advantage the Royers have over other ribbon mics is their relatively small size and weight and their robust design. While older ribbon mics are bulky and fragile, making them prone to flying sticks and falling stands, the R-121 weighs in at only 8.6 oz and is about the

same size as the classic Shure SM57. The R-121 and SF-12 are also surprisingly quiet microphones, and this is no small selling point with digital recording becoming increasingly prevalent. I pulled the SF-12 out at Bearsville Studios and no one believed it was a ribbon mic until the producer took some reading material into the bathroom and came out pointing at a review picture in a magazine, exclaiming "Hey, you weren't joking!"

Apparently word of the Royers has been spreading fast throughout the recording industry and many top engineers now swear by them. Bruce Swedien – who has worked the board on projects by Quincy Jones, Duke Ellington, and Michael Jackson, and is one of the most respected engineers in the business – uses them for mic-ing of percussion and exotic drums, among other things. He says that he is "not easily impressed by microphones, but I'm nuts about these mics." It's hard not to agree with him. After hearing raves from Carberry, and listening to the results on tape, it would be a foolish studio owner who would not add at least one of these wonderfully designed microphones to his or her arsenal.

Specs

Model: Royer R-121 mono ribbon microphone

Weight: 8.6 oz

Dimensions: 8"L x 1"W

Frequency Response: 30-15,000 Hz plus or minus 3dB

(Lifetime warranty to original owner on both mics. First re-ribbon is free for R-121's)

Copyright 2000 DRUM! Magazine (USA)