

Royer SF-12 Stereo Ribbon Microphone by Dr. Frederick J. Bashour

Note: See also [Russ Long's Second Opinion on this mic](#)

At the AES Convention in September 1999, the Royer booth happened to be located right next to Pro Audio Review's booth, so I spoke to the folks at Royer more often than others. By the end of the show, I left with a promise that samples of their currently available models -- two R-121 mono ribbon mics and a single SF-12 stereo mic -- would be sent to my recording session in Denver the following week.

The Score

A well-designed ribbon microphone sure to please the most discerning recordist. I requested these microphones not with any intention of purchasing them, but merely to hear what a modern ribbon mic sounds like; I'm a pretty exclusive user of souped-up vintage condenser mics. John Jennings, the mild-mannered, low-key Royer sales guy, just smiled when I left his booth. He knew what I didn't -- no one who has ever auditioned a Royer mic has ever returned it. Features/In use The Royer SF-12 (\$2,150), with the exception of some upgrades, is virtually the same microphone originally sold as the Speiden stereo model. Presently manufactured by the folks at Royer Labs, it uses a pair of 1.8-micron aluminum ribbons similar to Speiden's. This is different from the new Royer R-121 mics, which use 2.5 micron ribbons. Its output level, at -53 dBV, is roughly comparable to that of a dynamic microphone and thus requires at least a 60 dB preamp rather than the 40 dB preamps usually used with condenser mics. It's about 8" long and 1" in diameter and available in matte-black chrome or a silvery finish. Other upgrades include matched, high-output 300-ohm toroidal transformers, redesigned ribbon transducer and nickel-plated neodymium magnets.

At that Denver Cathedral organ recording session, in which I used many mics simultaneously -- mixing most of them down to four 88.2 kHz tracks -- I simply set up the SF-12 on a very tall AEA mic stand right next to my 0.9-micron tweaked-out Stephen Paul/Neumann SM-69 -- my best microphone. When I listened back at the mixer, my mouth fell open; the stereo image from the Royer was much more spacious than the Neumann's, although I had adjusted the latter to what I believed was an appropriate angle and polar pattern (hypercardioids at about 110

degrees). Furthermore, the Royer's sound was unbelievable; not as bright as the condenser microphone's, to be sure, but warm, clear and incredibly lush.

I still hadn't decided to use the Royer in place of the Neumann, but I did have my second engineer David Rick collapse the AEA mic stand for me so I could re-adjust the condenser microphone's capsules' angles in an attempt to match the superior imaging I heard from the Royer, which is a fixed, 90-degree figure eight stereo microphone. I eventually got the Neumann's sound closer to the Royer's, but never all the way there. I had learned my lesson, however; this is a world class mic, worthy of being compared with any other microphone I own.

A few weeks later, on my next recording, I was taping a dual-piano piece of contemporary music in NYC's acoustically uninteresting Abraham Goodman Hall. I planned from the start to use all three Royer microphones -- the two mono R-121s as well as the SF-12. I still set up, however, and recorded my typical SM-69 and a pair of newly modified 0.9-micron Neumann/Manley M 50s on four other tracks.

I found I could put the Royer microphones considerably closer to the piano than a condenser microphone would permit, and still get a smooth, relaxed sound. I used a mono Royer a few feet over the long strings on each piano (the keyboards were set up in a V arrangement, allowing the players to be next to each other, while keeping the harp ends of the pianos far apart). I put the stereo microphone between and right behind the two piano benches, and located the condenser microphones out in the hall using the Dr. Fred version of the Decca tree (a stereo microphone and two M 50s.)

When it came to mixdown time, the final result comprised about 80 percent Royer ribbon microphone tracks and only 20 percent condensers, mainly to give a little ambient zip to the sound and to drive my Lexicon 300L. But what one hears on the finished master is predominantly the smooth sound of those three Royer mics. The third session was the charm -- an eight-track solo violin recording done right in my studio. Through a fatal mistake made by yours truly (too embarrassing to go into here) I was unable to conveniently use the tracks picked up by either my Manley C24 or that SM-69. What was left to mix were the more distant tracks recorded by the Royer SF-12 and those new super-bright M 50s. Believe it or not, I was able to EQ the Royer digitally within my 03D (using four separate EQ bands/channel) to match the sound of my C24!

The Royer is such a smooth microphone that even with nearly 10 dB of treble boost the sound simply came into focus -- with no noticeable noise or grit. In fact, I actually preferred the highly equalized Royer sound to that of the flat C24. Go figure! I was a bit upset when the Royer folks subsequently requested to borrow back one of the mics for an accommodation loan to Shawn Murphy. While it was gone, I decided that, once I got it back, it would never leave my sight again. Summary I purchased all three Royer microphones. The fact that I chose to use them on my last three commercial recordings speaks for the fact that they are, without doubt, in the same league as my considerably more expensive Stephen Paul-modified Neumanns. They certainly sound different, but that difference is a good difference. Brightness and razor-sharp resolution are not everything, I've learned. Warmth, smoothness and precise imaging are equally important. David Hancock must have known this all along. Dr. Fred Bashour is a jazz pianist, church organist, classical music producer/engineer, intermittent college professor and Pro Audio Review contributor.

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