

Royer R-121 Ribbon Microphone by Russ Long

I have long been a strong advocate of ribbon microphones. I still regret selling my RCA77DX nearly a decade ago. My matched Coles 4038s, purchased from AEA in 1995, are at the top of my list of favorite microphones. The warm characteristics of a ribbon microphone make it a favorite for horns, percussion, piano and vocals. It is also a wonderful microphone for acoustic and electric guitars, strings and vocals.

The Score

"From rock'n roll to classical, the Royer R-121 captures today's musical performances in the rich ribbon tradition." The ribbon mic was developed in the 1930s and had remained virtually unchanged since then. Recent developments in magnetics, materials and mechanical construction have made the Royer R-121 possible. The R-121 is a ribbon microphone that has sensitivity levels matching or surpassing many of today's dynamic mics while still retaining the sonic curve of the classic ribbon microphone. It is also capable of handling higher SPLs than its vintage predecessors. Features The Royer R-121 uses neodymium magnets in a specially designed flux-frame to form a magnetic field for the microphone's ribbon. The microphone's 2.5-micron aluminum ribbon measures 4.76 mm by 38.1 mm. The ribbon transducer frame protrudes like a pair of high-tech fins from either side of the microphone's body. The R-121's burnished satin nickel-finished body is 6.13" long and 1" thick. This makes it smaller and much easier to position than the majority of ribbon microphones.

The R-121 has a frequency response of 30 Hz to 15 kHz and an output impedance >1,000 ohms. The maximum SPL rating is 135 dB. A cushioned wood case and microphone clip are included with the mic, and an optional AT84 suspension shockmount makes a great addition for just \$72 more. This shockmount rivals some I have seen with price tags of several hundred dollars. Royer also offers a metal pop screen filter for \$47.50, which was not available for this review.

In use

I just finished recording a CD in Vancouver where I used the R-121 extensively and I am ecstatic about my results. The mic shines on electric guitars. Traditionally, one of the drawbacks to using ribbon mics on electric guitars is their sound-level limitation. Not true with the Royer. I

miked the guitar amps on-axis 2" to 6" from the grille and never had problems with the ribbon overloading. I am truly amazed.

On one occasion, the studio owner, knowing I was using a ribbon microphone on the guitar amplifier, came into the control room to warn me of the level of the guitar amp. He was amazed when he heard how clearly the mic reproduced the sound of the amplifier without a hint of distortion. After a shootout between all the studio's vocal mics and the Royer, the band and I were unanimous that the Royer was the microphone for the job. The R-121 was the darkest of all the mics but it also sounded the smoothest.

Due to their design, ribbon microphones are the least sibilance-susceptible (say that 10 times fast into a condenser mic) microphone design. Since the band's singer has a significant sibilance problem, the Royer ribbon was clearly the microphone of choice. When recording the vocals, I found myself adding more high-end than usual. This was of course due to the darker (as compared to condenser mics) sound of the Royer. Vocals are more susceptible to pops with a ribbon microphone than with a condenser or dynamic mic.

Due to its internal stainless steel damper, the R-121 is less susceptible to these pops than any other ribbon mic I've encountered, but it is still no exception. To reduce this problem, I used a technique I adapted over years of recording vocals with the Coles 4038: I placed a pop filter about 1.5" to 2" in front of the mic and I pull a sheer nylon stocking tightly over the mic itself. This double protection virtually eliminates vocal pops without significantly altering the sound.

Another strength of the Royer R-121 is in recording percussion instruments, especially hand percussion. Percussion can be a problem when recording to a digital medium due to high-end peaks. This is especially true with the tambourine and shaker, the percussive backbones to rock'n roll. I found that percussion recorded with the R-121 sounds great and has a warmth that allows it to sit in a track without getting lost. Summary Other instruments I recorded with the R-121 that yielded favorable results include violin, cello, trumpet, saxophone and trombone. The only source that failed to yield pleasing results was backing vocals. I tried to record two or three singers at a time with a single R-121 and discovered that vocals don't have enough presence unless they are within a few inches from the microphone.

With the release of the R-121 and SF-12 microphones, Royer has established itself as a high-class company with exceptional products. Combining a high maximum SPL with the traditional

ribbon sound, the Royer R-121 is destined to become one of the classic microphones of the 20th century.

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