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Royer R-10

An exclusive first look at Royer's remarkably affordable new ribbon mic

REVIEW BY PAUL VNUK JR.

Just shy of 20 years ago, David Royer and his company Royer Labs singlehandedly renewed the audio world's interest in ribbon microphones with the launch of the famed R-121. It was the first of many Royer ribbons: mono, stereo, passive, active (another Royer invention), solid-state or tube, optimized for studio or live use...

While the R-121 is ubiquitous and a true modern classic, especially where electric guitar recording is concerned, at \$1300 it's still a serious investment for most studios. Royer's first attempt at putting the R-Series into the hands of more users was the R-101 (reviewed December 2010), an excellent mic that was the company's most affordable ribbon to date... but still a good chunk of change at \$800.

Lucky for us, the crew at Royer Labs are restless. After a few years of experimenting and tinkering, they have a brand-new option that brings Royer sound and quality down to an even more affordable price. Let me introduce you to the new Royer R-10, which is set to street at an impressive \$499 and should be hitting stores around the time you're reading this.

A.K.A. "Stumpy"

When Royer's John Jennings first told me about the R-10 last year, the mic was still going by its pre-numeric working title of "Stumpy", a moniker owing to its small squat size.

The R-10 measures $5\frac{7}{8}" \times 1\frac{3}{8}"$. It is the same diameter as the R-101, and uses the same triple mesh screening and generally has the same look. The differences are that it's in nickel finish rather than black and it's about 2" shorter (hence "Stumpy"). The family resemblance isn't coincidental; the R-10 literally started life as an R-101 that some of the guys in the Royer shop cut down to size, with David Royer going to work designing a brand-new transformer for it. You can read about the details in our interview with Royer's John Jennings (below).

Meet the R-10

The R-10 is a globally sourced mic. Its body and frame are made in China, while the ribbon transducer with Royer's



patented 2.5-micron offset ribbon element and rare earth Neodymium (Grade 52) magnets, the same one found in the rest of the R-Series mics, is made in-house at Royer HQ. The new custom transformer is USA-made, and the mic is hand-assembled at the company's Burbank factory. It comes with a 5-year warranty and the first re-ribboning is free. As a point of reference: I've had my R-121 for 17 years and it just got its first re-ribboning last year!

The R-10 comes with a screw-on swivel mount and a velvet Royer mic sleeve. It's housed in a small aluminum briefcase and is sold alone or in matched pairs.

The R-10 specs out as follows: 30 Hz–15 kHz frequency response, –54 dBv sensitivity, 100 Ω output impedance, and maximum SPL of 135 dB @ 50Hz or 160 dB @ 1 kHz. Like all Royer R-Series ribbons, it's a figure-8 mic.

10 vs. 121

The big question most folks will ask is, "Is this a poor man's R-121?" The answer is: No, not at all. Just like the R-101, the R-10 is designed to be its own thing. It offers another facet of the Royer sound... but it's still the Royer sound.

To start with, the R-10 is 5 dB less sensitive than the R-121. On loud sources this yields added headroom to keep from overloading the mic. On low-level sources you will need a strong, clean preamp, even more so than with other Royer ribbons. I used the R-10 with my Millennia Media HV-3D preamp, a Chandler TG-2, and the AEA RPQ2 (reviewed July 2017). On most sources the R-10 fared just fine, short of spoken word, which did get a tad noisy when pushed—that's the preamps, not the mic. I also had great success running the R-10 through a Cloud Microphones Cloudlifter CL-Z to turn it into an active ribbon.

The song remains the same

Side by side with my R-121, I tracked a folksy acoustic song with male vocals, cajon, kick drum, tambourine, and a parlor-sized

1960s Kalamazoo Epiphone acoustic that I double-tracked. I then compared the two mics' behavior.

The lows and highs of each mic were quite different. The R-10 actually captures more low end from an across-the-board fullness standpoint, but the R-121's low end is tighter and has more punch to it. On the upper mid and high side, the R-121 is more forward as well and just a hair smoother. The R-10 rolls off just a touch more and can appear darker, especially when comparing the rear lobe of each mic.

Overall, both mics have the classic rounded-midrange R-Series ribbon sound, compared to the new trend of bright modern ribbons, or even the more neutral classical-music-focused Royer SF Series mics. While the R-10 is a tad more rolled off than its sibling, it takes EQ exceptionally well, both in mixing and in tracking.

One advantage the R-10 has over the R-121 is its triple-mesh screening. This makes the R-10 more practically suited to use as a wonderfully smooth vocal mic. I had zero issues putting it in front of a vocalist without a pop screen. I also found it a better choice than the R-121 on kick drum for the same reason; its bloomy low end is very nice for a thick vibey kick sound.

Other applications

Of course the R-121 earned its stripes on electric guitar cabinets, and its baby brother performs admirably here as well. I put my pair of R-10s in two Celestion Vintage 30-equipped iso cabinets as the only guitar mics, and the two guitarists I work with regularly both commented on the naturally full and smooth sound. Both grumbled a lot when I had to take Stumpy away.

A surprise favorite use of the R-10 was on saxophone. I had other mics up for added flavor, but the R-10 on sax with zero EQ and a touch of Bricasti reverb was all that was needed to fit the bill. The R-10 is stellar on winds and brass!

The only source where I wasn't wowed by the R-10 was on drum overheads. To be fair, I'm not nuts about the R-121 in a drum overhead saturation, either. I prefer the neutral openness of Royer's active stereo SF-24.

Conclusions

Sure, there are a plethora of ribbon mics on the market that come in under \$500, but typically when people talk about them, they are usually referred to as "extra flavors" to have. Often they are quirky, heavily colored, and mostly relegated to vibey/effects mic status when one wants "that" sound.

The R-10, by contrast, is a \$500 ribbon mic that sounds like a classic

Royer ribbon. I foresee a great future for the R-10—not only giving budget, beginner, and project studios that taste of Royer, but this will be a great live microphone as well. They'll grace a lot of stages on electric guitar, and did I mention how they excel on brass and woodwinds? Yes, yes I did, and yes, yes they do! Congratulations on a job well done for an important new audience, Royer, and here's to another 20 years!



PRICE: \$499

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John Jennings of Royer Labs on the R-10

How did the new R-10 come about?

John Jennings: This is a really interesting microphone. We'd had the R-101 for awhile, and the guys in our shop are pretty inventive so they'll experiment when they have time. They took the CNC machines and literally chopped down an R-101! Chopped the body down, chopped the grille down, and started playing around with the insides... they created a microphone that we all started calling Stumpy. Stumpy hung around for awhile and they experimented with different grilles, then we took the body and had it plated so it was more of a Royer color... and the damn thing sounded good!

So is the R-10 essentially a modified R-101?

In a nutshell, yes and no. Yes, it's a modified R-101, but some changes were made inside; most significantly, a new transformer was created for it. Our main goal was to make a Royer that was affordable for more people, because most of our stuff is high-end, and fairly expensive.

What makes a Royer ribbon mic so expensive?

Quality of parts, quality of machining and build. In the case of the R-121, just the body itself—without any internal components—is more expensive than many complete microphones on the market! Then you add the custom

transformer, the neodymium magnets, the pricey nickel finish, and on and on... and you end up with a lot of money put into the final product.

How did you get the cost of the R-10 down to almost a third of an R-121?

The body and the frame inside are made in China. The company we use there is the same company that makes Mojave's mics, and has since the beginning. They are just outstanding. They make the new body for us but it is totally a Royer design—we sent them the blueprints. They make and send us the body with the main outer screen already tacked in, as well as the frame inside, along with the transducer frame. Then we put everything else together at Royer.

I'm guessing the ribbon-motor assembly is done in house in California?

It's an R-121 ribbon. It uses our patented direct corrugation process which makes it both tough and flexible at the same time. The neodymium magnets are the same as on the R-121 as well.

What can you tell me about the transformer—is it similar to other models?

We could not afford to get the R-10 to this price point using the same transformer that's in the R-121 and R-101. So David Royer designed a transformer that does cost less to make, but still sounds great and has the high overload threshold we all wanted. It's 5 dB less sensitive than the R-121 or R-101, but that gives the mic headroom for days. You can really whack the R-10 with loud guitars or brass, and you're never going to overload it.

But on the other hand, you'll need a good, strong, clean preamp on quiet sources.

On acoustic guitar, ukulele, or things like that you will need some gain. We don't make preamps; while it's always

better to build signal boosting into the microphone as we do on the R-122MKII, at this price point we expect that people are going to use an inline signal booster when necessary, and we don't discourage that.

Back to the transformer, I think it's interesting that in this same issue we are also reviewing the Mojave MA-1000, which also uses a new custom David Royer transformer.

David really is a genius with transformers. He designed the transformer in the MA-1000 to specifically give that microphone its gorgeous low end, and he also designed the transformers in the entire Royer mic line. It's a big part of our sound.

Any other significant challenges to overcome in designing the R-10?

Getting everything into the smaller package! The R-101 has a complicated transducer mounting that we had to simplify in the R-10. The transducer literally sits on silicone grommets that attach inside the microphone to the transformer can. That provides some isolation from vibrations;

it's there mainly to protect the ribbon element from shocks that can really wear a ribbon out over time. It took some work to fit that frame into the R-10, but it turned out really well.

I know the R-121 is still king, but is there anything on the R-10 that is unique or is an improvement?

The three-layer windscreen in the R-10 and the R-101 really protects the ribbon well. It makes those mics a bit more durable even than the R-121. It makes the R-10 a great choice for live use on the road. In addition, the three-layer mesh also helps cut out some of the low end buildup that you get on ribbon mics up close. Everyone seems to like the mounting system, too.

I think the mic sounds great, and I have been getting a lot of use out of the pair I was sent for review. I can't wait to see how it does out in the world!

Thanks. We are really proud of this mic—proud of where it came in at its price point, and proud of how it sounds. ➤