



review

BY NICK BATZDORF

Royer SF-1 Ribbon Microphone

It wasn't all that long ago that many people considered ribbon mics quaint old relics. They were sort of known to sound good on horns, but it was outdated technology; why would anyone want to bother with some temperamental museum piece when condenser mics sounded great and weren't so fragile?

Royer is one of the companies that has put those foolish notions to rest, because good ribbon mics sound extremely smooth and have excellent transient response. Their flagship model, the R-121 (reviewed by Dave Moulton 7/1999) has become very popular; it's also considerably less fragile than the ribbon mics that were popular 50 years ago.

Later they introduced a stereo mic, the SF-12, which we reviewed in the 6/2000 issue. While that mic uses a less massive ribbon and is therefore more sensitive, it's also not unduly frail. The figure-8 SF-1 we're reviewing here is literally half of the SF-12—it's a mono mic, although we used a matched pair for this review.

The lowdown

There are a few things to know about these mics. First, while the SF-1 is spec'd to tolerate 130 dB signals before it distorts, the elements in all ribbon mics are somewhat fragile. You don't want to test them by blowing into them, or you'll dislodge the ribbon.

Second, being passive they require a preamp with a lot of gain, especially if you're miking from a distance. (Royer actually has a new model with

active electronics called the R-122, but it's the only powered ribbon mic we know of.) Royer specifies a pre with 60 dB of gain. For most of this review we used Millennia Media STT-1 channel strips (reviewed 5/2001), which provide 60 dB in their solid-state setting.

Other than that, these mics are very easy to use. They're notably insensitive to mic preamp input impedance, meaning that they mate well with any good preamp; the input impedance on the Avalon AD2022 mic preamp we were reviewing for the 1/2002 issue had no major effect on the SF-1's sound.

Unlike some ribbon mics, the SF-1 won't get damaged if you turn on phantom power. There are no switches; it has no highpass rumble filter or pad. In fact, this side-address figure-8 mic doesn't even care which side you point at the source—they both sound the same. Also, you don't have to worry about off-axis coloration, because there really isn't any. Just bear in mind that a figure-8 mic is going to pick up whoever else is playing in the same room as your source.

The SF-1's matte black case is about 5½" by 1" in diameter. It uses a 1.8-micron aluminum ribbon. By comparison, the Royer R-121's ribbon is 2.5 microns. Even when you're not taking advantage of its strong proximity effect, the SF-1 sounds bigger than most small-diaphragm instrument condenser mics (such as the Oktava MK-012s we compared it to). However, it's more true to life than a typical large-diaphragm studio condenser mic; the R-121 provides more of that larger-than-life sound. But of course these are just analogies to give you a rough idea

of how you'd be likely to use the mics, not scientific equivalents.

All Royer mics come in velvet-lined wood boxes. The manufacturer supplied us with Audio-Technica AT84 shockmounts (\$72), a model that—unlike a lot of these designs—actually holds its position when you adjust it. A clip in the center holds the mic securely.

The SF-1's craftsmanship is impeccable. I had an opportunity to tour the workshop where they're built, and it's very impressive. They have things like little custom-machined hand devices that corrugate ribbons one at a time, and a fellow who tunes each ribbon's suspension tension by hand to very exacting specifications. All that care is reflected in the mic you take out of the box.

Using it

This is a more sensitive mic than the R-121, and Royer sees one of the differences as being that in an acoustic recording setting you'd use the R-121 for spot miking and SF-1s for the main pickup mics. Royer notes that woodwinds and strings benefit from the SF-1 as a spot mic; we found the SF-1 works very well on many individual instruments.

The SF-1's most obvious use is as a general-purpose instrument mic, but as long as you use heavy-duty pop filtering there's no reason not to use it on vox. This mic is not a character mic, in fact it sounds a lot like the instrument in the room.

As a matter of fact, that was precisely L.A. session guitarist Craig Stull's first comment when he heard the recording of his nylon string guitar through it. We placed a single SF-1 in the conventional acoustic guitar

sound is quite different from what we've all become accustomed to hearing on pop recordings. That bright, jangly sound is easy to get with the Oktava MK-019 we compared the Royer to, and it would certainly be heard better in a mix. While the sounds are too different to proclaim one better than the other, the Royer was very appropriate for the finger-picked blues Craig played through it.

One of the characteristics Royer touts about their mics is how well they take eq, due to their even phase response and lack of self-distortion. Recordings made with most mics quickly start sounding plastic when you start boosting to excess, especially the upper mids and high end. We were easily able to add 10 dB of the Millennia Media's eq to the steel-string track without that happening. While it still makes more sense to start with a mic that sounds closer to what you're after, this is a useful characteristic.

Next we recorded country singer/songwriter bassist Candy Chase's stand-up bass through both Royer mics. The R-121 makes it sound huge and dense, round and detailed again, and even...and generally wonderful; the smaller SF-1 provides all of those attributes except the hugeness.

Candy liked the sound very much; Craig feels that the R-121 is The Bass Mic, pure and simple. (He also considers it even better than his previous favorite guitar amp mic: the Shure SM57.) At first I agreed about the R-121 on bass—the sound is totally impressive—but now wonder whether it isn't almost too much. The SF-1 acoustic bass recording is certainly less flamboyant, but it still sounds great and you won't have to

I agree. The larger-than-life sound is amazing on solo cello, and as long as you don't get too close it's not overbearing. On the other hand, the SF-1 also sounded rich, smooth, and round on the same cello and also on alto recorder; it does an excellent job of picking up what you hear in the room. Again, either would make a great choice on cello or recorder.

I recorded a solo Steinway grand with two SF-1s through the Millennia channel strips and a very nice sounding Panasonic AD96 8-channel A/D converter (reviewed 9/2000). My usual position—lid open, one mic where the side starts to curve in about three feet above the high strings, the other mic above the low strings almost at the foot of the piano—was a little too close; the proximity effect exaggerated the hammers. But in all other respects the SF-1 sounds fantastic on acoustic piano, and it certainly produces a much bigger sound than the small-diaphragm Oktavas in the same positions (an unusual choice for concert piano, but one that has produced surprisingly good results). I'd recommend removing the lid entirely and placing the SF-1s higher for this application.

Round, smooth, detailed

You've probably noticed those words being overused throughout this Royer SF-1 review, and for good reason: they're the best ones to describe the sound. Not that I'm about to give up using condensers for what they do well (!), but the SF-1's natural, effortless ribbon sound made some really good recordings made through top-notch condenser mics seem harsh and spitty by comparison. It's a special mic.

If you're looking for a great natural sounding mic for acoustic sources, this unique Royer model is as good as the best out there.

Price: \$1075 each; matched pairs \$50 additional

More from: Royer Labs, Inc. 821 North Ford St., Burbank, CA 91505. 818/760-8472, fax 818/760-8864, www.royerlabs.com.

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One of the best all-purpose mics available

miking spot: fairly close, aimed at the neck above the sound hole—but farther back than you'd put a typical cardioid, because the proximity effect became somewhat overbearing that close up.

Normally, figure-8 mics don't work very well inside his deadened recording booth, but in this case the sound was very smooth and detailed, and round without any lack of air. This mic would make an ideal choice for solo or featured nylon string guitar. There's very little you'd want to do to the sound with eq—it was usable as is.

The SF-1 also had the same nice effect on a steel string guitar, but the

roll off it off to make it fit into a mix. But either one of these mics qualifies as being the bee's knees.

At another session, the SF-1 sounded full and round (to use that word yet again) on Mike Julian's trombone. The difference between it and the large-diaphragm condenser that got the hook was striking, although getting enough 'air' in the SF-1's sound to make the track compete with the others (recorded direct or through standard mics) was a struggle.

One of Dave Moulton's comments about the R-121 was that he actually preferred the sound on cello to the actual instrument in the room.