

Proposed Title: Debunking the Myth of No Ribbons on the Road
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For many a road warrior, the prospect of using ribbon microphones live on tour seems preposterous. Comments like, “They’re just too fragile,” or “Don’t let any wind hit ‘em,” are pretty common among FOH engineers. To a large extent, these concerns have merit, but that’s not to say ribbon mics can’t be used for live sound. Some contemporary ribbon mics are smaller, lighter, and considerably more robust than their predecessors and, as a result, they are finding their place in an area that was once considered off-limits.

Ribbon microphones have recently toured or are currently out with acts like Aerosmith, Kiss, Harry Connick Jr., and the Henry Mancini Orchestra. This eclectic assortment of acts points to the fact that ribbon mics can address a wide range of musical styles and live sound challenges.

How did ribbon mics gain the perception they were inappropriate for live sound use? It’s important to recognize the ribbon-velocity microphone design first gained popularity back in the early 1930s and remained an industry favorite through the 1960s. Though they were popular with broadcast announcers and studio engineers, their immense size was a key disadvantage that, ultimately, caused them to fall out of favor. Even though ribbon mics were considered state-of-the-art, magnetic structures of the time were bulky and inefficient, and transformers suffered a similar deficiency.

The second caveat that has contributed to the live sound professional’s aversion to ribbon microphones stems from the fragility of the ribbon, which, admittedly, must be protected from strong blasts of air. Wind pressure, such as that created by a kick drum or a vocalist’s plosives can render the ribbon unusable. Compound this with the fact that early ribbon mics traditionally had relatively low output levels, and one can certainly understand why many FOH engineers have expressed reluctance to use them.

So What’s Changed?

Recent developments in magnetics, electronics, and mechanical construction procedures have enabled the ribbon microphone to gain a new lease on life—in much the same way that vacuum tube preamps have enjoyed a resurgence in popularity. Contemporary ribbon mics are being made smaller, yet they are able to obtain sensitivity levels comparable to modern dynamic microphones. With their smooth frequency response and phase linearity, they are well suited for use with digital equipment commonly used by today’s audio professionals.

Being smaller, more robust, and with higher output levels, ribbon microphones such as those from Royer Labs are taking their place onstage. It should also be noted that while ribbon microphones are traditionally non-phantom powered devices that can be seriously damaged if phantom power is applied, newer models from Royer, for example, are not usually affected by the presence of phantom power. Turning the phantom supply on or off after the mic is connected generally presents no problem. Select Royer models, such as the R-122 and SF-24 are phantom powered microphones.

Field Use

To a large extent, the selection of ribbon microphones for live use stems from a desire to re-create an artist's sound as originally captured in the studio. Live sound engineer Robert Scovill has worked with numerous high profile touring acts including Matchbox 20, Tom Petty and the Heartbreakers, and others. He has used Royer-121s for miking **Mike Campbell and Tom Petty's** guitar and has been very pleased with the results. "The 121s handle high SPLs quite well," said Scovill, "which makes them a good choice for miking an amp. For both crunch and clean guitar, the mics translate those sounds very well."

Since ribbon microphones employ a figure 8 pattern, Scovill has found he can achieve excellent side rejection by employing the figure 8's null points. "By taking advantage of the figure 8's side null through careful positioning, you can achieve a surprising amount of isolation," added Scovill.

Maybe as an alternate to this last sentence you could try:

"In live sound applications, a lot of interfering audio comes from the sides of the microphone. You might have amps sitting side by side, you have drums to the left or right of the back line amps etc. so the figure 8 pattern of the ribbons is an excellent choice for achieving a great deal of isolation between inputs. In reviewing recorded tracks from the Petty tour, I was really impressed with how clean the Royer tracks printed.

The ribbon's smooth frequency response has also enabled Scovill to address a common challenge when miking live guitar. Scovill explained, "In live performance, a guitar player is standing with his back to the guitar amp. Because of this, I believe a lot of players have a tendency to make their amps sound brighter than if they were facing them. The midrange response in the Royer-121 is extremely smooth, and it helps that situation considerably. If you need to place a mic in front of a **overly** bright amplifier, the 121s don't exhibit the high-end boost that you normally experience with condenser mics and even some dynamics. They really help offset that harsh midrange sound that can easily surface."

With their ability to handle high SPLs, ribbon mics also make a good choice for brass and woodwinds, since instruments like trumpet and sax can easily overpower other microphones. Independent engineer Gregg Rubin serves as FOH and recording engineer for Harry Connick Jr. His road experience with ribbons has been very positive.

"The trumpet can be a tough instrument to mic due to its extreme range of sound pressure levels," notes Rubin. "We have some of the hardest hitting, loudest, most talented trumpeters working with us, and the mics really handle the volume levels well. With their figure 8 pattern, a ribbon mic provides a lot of rejection from unwanted sound. We have four trumpeters (with a mic on each) who have extreme dynamic ranges. We can take advantage of the null point in the mic's figure 8 to provide separation between each player—providing quite a bit of control for the mix."

“The sound of the trumpet is very directional,” continued Rubin, “so the more of that figure 8 pattern you can employ to capture the instrument, the richer and more natural the sound. This characteristic makes the ribbon mic very desirable for use with a trumpet.”

Independent recording engineer Jamie Lee uses a combination of 10 assorted Royer R-122s, SF-12s, and SF-24s on vocals, pianos, harps, brass, and woodwinds as part of his mobile recording setup for capturing the Henry Mancini Orchestra. With the SF-24 phantom powered model accounting for roughly 95% of the mix, his dependence on the ribbon’s sound is substantial.

Lee feeds his Digidesign Pro Tools HD system via a series of outboard mic preamps and uses a Digidesign Control 24 for the tactile interface. Along with the SF-24 for the main mix, Lee also uses two Shoepps MK41 mics on the same mount. He faces the MK41s into the audience to pick up room ambience—as opposed to employing flanking microphones midway down the sides of the room.

Like Scovill, Lee finds the ribbon mics’s frequency response very appealing. “One of the biggest advantages in using the ribbon mics is the fact that they don’t have an exaggerated high end,” notes Lee, “which is usually the case with many condenser microphones. When you record digitally, that brightness in the high end can very easily create a harsh sound. Ribbon mics in general, and Royer mics in particular, have nice transient response with a very smooth high end. This translates to a more accurate representation of the sound that gets captured.”

Travel and Weather

The road can be an ugly place for electronics, so there are a few things to bear in mind when traveling with ribbon mics. When it comes to weather, Robert Scovill offered the following, “In a live environment, you’re susceptible to so many different problems, you never know what’s going to happen. Weather can affect equipment—especially humidity or condensation that frequently arises during evening shows. This can impact condenser mics **considerably**, but I haven’t experienced **those kinds of** issues with the 121s.”

Wind can also create challenges, as Gregg Rubin explains, “We’ve done a lot of outdoor shows, and on several occasions, it was windy to the point where I needed to put a foam windscreen on the mics to minimize interference. Even with these, the mics sounded really good and we encountered no further interference. The Royers have a consistent sound, which hasn’t changed ever since I got them, so I really can’t think of any reason that would prohibit their use in live settings.”

Brad Johnson, FOH engineer for Aerosmith, has used Royer mics with the band for the past two years. On their reliability, Johnson offered his perspective, “My main concerns with ribbon mics were longevity, and we only lost one in two years. That’s better than most conventional mics. Royer mics are now an essential part of the Aerosmith guitar sound.”

Rob Griffin, FOH engineer on tour in Asia with Herbie Hancock, Wayne Shorter, Dave Holland, and Brian Blade, offered the closing words of advice for traveling with ribbon mics.

“I’ve had no problems,” said Griffin, “but if you check them into baggage on airplanes, you must be certain they’re not in a case that allows them to pressurize. I use a Pelican case for transporting the ribbons, but remove the air valve so the ribbons don’t stretch. Otherwise, they’re very stable.”