

SF-12 Review

By Dave Foister

Following my recent look at the few currently-available ribbon microphones, a reader wrote to point out that the American Royer model I was enthusing about was not a new design but the latest in a line involving a company called Speiden. Quite by chance I recently encountered a Bang and Olufsen ribbon microphone believed to be from the fifties, and the physical similarities to the Royer were immediately obvious. Steve Lane from Royer's UK distributor Funky Junk confirmed that the Royers owe something to the B&O heritage, and indeed Funky Junk owns a 1970s stereo B&O ribbon that is even closer in appearance. This all happened just as I took delivery of the Royer stereo model mentioned in the original overview, and whetted my appetite even further.

The Royer Speiden SF-12 is at first sight nothing more than a pair of the mono models bolted together, or at least two head parts sitting on one body. The business end of the mono microphone is a vertical cylinder with slots both sides, through which is just visible the long narrow ribbon. The SF-12 has two of these, although they are not exactly the same as the mono version; they incorporate a new lighter ribbon for improved transient response and even further HF extension.

The two ribbons are mounted one above the other and fixed permanently at 90 degrees to form a classic Blumlein pair. If it seems odd that there should be no angle adjustment, where other microphones offer some degree of swivelling, it is important to remember the almost perfect figure-of-eight pattern exhibited by a ribbon. Two ribbons produce their best stereo image - theoretically and practically - at 90 degrees. Indeed wider angles should be avoided at all costs as they introduce out-of-phase components at the edges of the target sound stage, as the back anti-phase lobe of one microphone picks up the same sound as the front lobe of the other. At the same time, narrower angles achieve nothing more than a compromise of the stereo picture and a waste of the microphones' capabilities. The best way to control the stereo pickup of a Blumlein pair is to move it; often the best results are obtained when the 90-degree angle of the microphones points exactly at the edges of the orchestra or whatever is being recorded. Again, any wanted sounds creeping outside the 90-degree arc will start to introduce out-of-phase

elements. For these reasons it is perfectly natural that Royer should have fixed the two microphones at the chosen angle.

The other option is to set the microphone up with one of the capsules facing forwards and the other sideways to give an MS pair. Many people seem to have the impression that MS requires a cardioid as the front microphone, but any polar pattern can be used (even omni), each giving different results. With a figure-of-eight M like this, equal amounts of M and S translates exactly to the 90-degree eights we began with, with the added advantage of stereo width manipulation that MS gives.

The Royer is beautifully built and finished in either Black Chrome (standard) or Brushed Nickel (a no cost option), and in fact the casing for the capsules is made of ingot iron and forms an integral part of the magnetic circuit. A badge with the Royer logo indicates the front and the model number appears on the top, but it is otherwise completely unadorned. At the base is a 5-pin XLR for output, and a splitter lead is provided, helpfully labelled Upper and Lower to avoid the left-right confusion that would occur if the microphone were suspended upside down. It comes in an attractive wooden case.

The quoted performance figures are another reminder of what a good ribbon can achieve, with a frequency response whose flatness is rarely matched by any other type. The specs still show a top turnover frequency of 15kHz, but the new ribbons take that up to 20. The result is a sound that has all the warmth a ribbon is good at - the word velvety kept coming to mind - but not the HF limitations that might imply. The top end is bright and clear, making this one of the smoothest and most accurate microphones you're likely to find. The nature of the ribbon also means that this is maintained right the way round the polar pattern, which hugely enhances the SF-12's stereo imaging capabilities.

The traditional Achilles heel of ribbon specs is the low sensitivity, although the Royer's is almost in moving coil territory at 2.3mV per Pascal; set against this is the low source impedance that minimises interference pickup along the way. Essentially the Royer generates no noise, but requires a good clean preamp to give it the gain it needs without adding its own.

This is a very satisfying and rewarding microphone that can lend itself to a huge variety of applications, from drum overheads to single-point orchestral recording, in every case offering almost unbeatable stereo imaging and uniformity along with a delightfully open and accurate sound. If anything can put the ribbon back on the map the Royer is it.

Note from the manufacturer:

The Royer/Speiden SF-12 was designed by Bob Speiden 12 years ago and made in extremely limited quantities. Royer Labs builds the SF-12 as designed by Speiden but with a few changes including improved transformers (providing higher output and extended response), a lighter mass ribbon, and upgraded mechanics in the ribbon transducer that sounds identical to Bob's original design but lends itself to better mass quantity production. It is unmistakably influenced by the B&O Stereo Ribbon, but there are a number of significant differences that give the SF-12 a superior frequency response, higher SPL handling characteristics, and greater output. The available SF-12 finishes are matt black chrome (standard) and brushed nickel (optional).

The R-121 mono ribbon was designed by David Royer, independently of Bob Speiden's SF-12. The two microphones are actually quite different, but both are influenced by B&O designs. As Dave Royer put it, "A simpler, more elegant microphone design than the B&O would be hard to find". The R-121 ribbon transducer actually sticks out from the sides of the mic like "ears", while the two smaller SF-12 ribbon transducers are completely contained within the microphone body and do not protrude.