

TALKING ABOUT A SUBJECT LIKE MICROPHONES IS ALWAYS A CHALLENGE. IN THE FIRST PLACE, THE IDEA OF USING VERBAL CUES TO DESCRIBE ANYTHING PERTAINING TO SOUND AND THE TOOLS WE USE TO RECORD AND REPRODUCE IT IS SO SUBJECTIVE AS TO BE ALMOST USELESS. IT'S KIND OF LIKE THAT OLD QUOTE COMPARING WRITING ABOUT MUSIC TO DANCING ABOUT ARCHITECTURE.

And when it comes to subjectivity, few aspects of the signal chain evoke as much emotion as microphones. While most people can agree on what makes a poor-quality mic, it's much more difficult to find a consensus on what constitutes a great one. Internet forums and recording studio lounges are rife with conversations on this or that engineer's favorite mic, what mics were used on a particular legendary recording, and what comprises the perfect desert island mic collection.

That said, ribbon mics are among the few devices almost everyone agrees on. It's hard to find very many negative comments about ribbons, with most recording enthusiasts waxing ecstatically on their unique combination of low-end warmth and smoothness, their flat response, and their natural detail and clarity. The classic recordings of the 1930s and '40s, the heyday of the ribbon mic, bear this out. Certainly, engineers and audiophiles can debate endlessly about how much of that characteristic warmth can be attrib-

Try A Mellow Ribbon

Ribbon Mics Move Into the Mainstream

By Daniel Keller

uted to other aspects of the era's tube-oriented signal chain, but there's no denying the unique tonal character of a good ribbon mic.

IT'S ALL ABOUT THE VIBES

All microphones work their magic on some variation of the same basic principle: an element of some sort is set in motion by sound waves, and the microphone translates those vibrations into electrical current. The difference lies in what type of mechanism is used to generate those vibrations. In today's recording environment, the three most popular options are dynamic, condenser, and ribbon mics.

In a dynamic microphone, a thin diaphragm is attached to a lightweight coil that vibrates as air (in the form of sound waves) moves past it. The coil's movement generates a voltage as it moves back and forth between the poles of a magnet.

Condenser microphones position the moving diaphragm a short distance in front of a stationary back plate. A charge is applied to both plates (typically by way of phantom power or a battery), and, as the

diaphragm moves, the changing distance between the plates generates changes in the capacitance, which generates a voltage.

In a ribbon mic, that vibrating element is a super-thin corrugated metallic ribbon. The ribbon is mounted between the poles of a powerful magnet, its movement varying the magnetic field and creating a current. It's the particular characteristic of the ribbon's low mass and free-floating vibration, along with the microphone's open design, that gives the ribbon mic its unique combination of warmth and natural detail. Until recently most ribbons were made of aluminum or aluminum alloy, though recent technological innovations in nanotechnology have opened the door to new materials.

A DELICATE AND PROBLEM CHILD

Invented in the early 1920s by Drs. Walter Schottky and Erwin Gerlach, it was Dr. Harry Olson of RCA Studios who is credited, a decade later, with the first serious development of the ribbon mic. Olson was drawn not only to the ribbon's sonic characteristics, but to its useful figure-eight pickup pattern, which enabled it to be placed off axis to the noisy film cameras used at RCA and other movie studios of the day. (Nearly a century later, many of those early RCA ribbon mics are still in use and prized by recording and broadcast engineers.)

In the early days of radio and recording, ribbon

