

# ProAudio Review

The Review Resource for Sound Professionals

REPRINTED FROM JANUARY 2007

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## For Gene Lawson, Microphones are Golden

by Frank Beacham

Some audio products are brought to market to meet the quick financial demands of shareholders. Others evolve from the grass roots of users because they serve a genuine need.

In the world of audio, Les Paul — the musician and legendary tinkerer — emphasizes that every one of his innovations, including the solid body electric guitar, multitrack recording, and sound-on-sound, were created first to serve his music — not to make money.

"If I could have bought it all at Sam Ash, I would have done so," he said on his 90th birthday.

The passion to create the best tools to serve art, rather than the bottom line, lives on. There are few better modern day examples than Gene Lawson, a former professional drummer who has used his talent for electronics to improve thousands of audio recordings and live concerts for more than four decades.

### IT STARTED IN CINCINNATI

Lawson, born in 1942 in Cincinnati, grew up in the shadow of Syd Nathan's legendary King Records, a studio and label that would spawn a long list of early R&B pioneers including Wynonie Harris, Billy Ward and the Dominoes, Hank Ballard and the Midnighters, and James Brown and the Famous Flames.

The creative crucible of the 1950s Cincinnati music scene was overwhelming for the teenage Lawson, who, while in high school, mastered the drums and simultaneously studied electronics via correspondence

course. It was Gene Lawson who always set up the PA system and fixed the amps for his high school rock group.

After graduation, Lawson was ready to make his mark in music. He joined the band of guitarist Lonnie Mack and played drums on Mack's instrumental version of Chuck Berry's

In 1963, Lawson — hungry to experience life on the road — joined the band of Conway Twitty. It was the twilight period after Twitty's success as a rock performer and just before he would launch a second career as a country singer. "We wore out three Cadillacs that year... pulling a trailer... doing one-nighters," Lawson remembers. "I got my fill of the road pretty quick."

While working with Twitty (whose real name was Harold Lloyd Jenkins), Lawson purchased a classic condenser microphone for the performer's personal studio in Helena, Arkansas. It was a (Neumann-made) U 47. Lawson had long respected the rich sound of the U 47, a microphone long



Some of the latest, Lawson Tube/FET Combo.



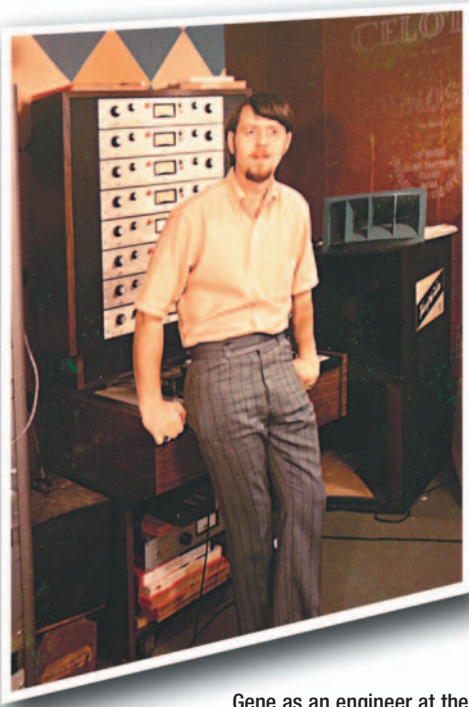
Gene with mic capsule parts.

"Memphis," a track some critics still rate as one of the ten greatest rock instrumentals ever recorded.

(Later, in 1985, Lawson would engineer and play on *Strike Like Lightning*, a Mack album coproduced with Stevie Ray Vaughn. To hear one of the finest rock guitar duets ever recorded, listen to "Double Whammy" with Stevie and Lonnie on guitar.)

used in his own hometown by King Records to record many of its greatest hits. "The U 47 was the 'go to' microphone for vocals at the time," Lawson recalls.

By 1964, fed up with life on the road, Lawson returned home to Cincinnati, this time securing his first job at a recording studio. For awhile he would alternate between being a studio musician and recording engineer.



Gene as an engineer at the Jewel Studio, Mt. Healthy, Ohio.

Along the way, Lawson began building custom gear to solve the real world problems of his fellow musicians. Bands of that era had to generate their own volume in live performances and did so with their individual instrument amplifiers. These were the days before sophisticated house sound systems.

Lawson's first product, sold in 1964 through a Cincinnati music store, was a "blow-proof" loudspeaker for guitar and bass players who found they were blowing up their conventional two-speaker commercial amps almost every week. "I started building cabinets that had multiple loudspeakers that were far beyond the power capacity of the amplifiers of the time."

Next, Lawson built a sound system that could punch the level of vocals above that of the rest of the band. For many singers, using the system allowed them for the first time to be heard clearly above the band by the audience.

Ironically, in 1964, the same year his speakers were sold, Lawson sat in the 13th row of Cincinnati Gardens, a sports arena, during a performance by the Beatles. "It was a horrible echo chamber. I couldn't hear a note," he says, noting the 15,000 or so fans were screaming at the top of their lungs. "No PA system could have saved it."

Yet, the timing of his audio products was perfect. The high-profile sound problems on that 1964 Beatles tour ignited a global effort to improve concert audio systems for all rock

tours. Lawson was one of the early pioneers in live concert sound.

### BIRTH OF THE L47

In 1971, Lawson moved to Nashville and continued to excel in all his interests, eventually building and owning recording studios and manufacturing equipment while working as a professional musician.

His next major music product was an analog plate reverb system for recording studios. Sold under the brand, Audicon, Lawson proudly notes the superior reverb systems he made are still in use at many studios. The plate reverbs were made until 1984.

Throughout all Lawson's years in the music business, some tools have remained constant. One is the Neumann U 47 microphone, introduced in 1947 under the Telefunken brand and made widely available in 1949. Still in active use today, it was a microphone that transformed the American recording industry, causing a mass shift away from the RCA ribbon technology that had previously been the top dog in the studio.

In 1953, a U 47 sold for about \$390. Frank Sinatra refused to record without his "Telly,"



The Capsule Queen, AKA Gayle Lawson, hard at work building your mic.

as the mic was nicknamed. Mercury Records promoted the U 47 as its Living Presence microphone, putting the mic's image on its record covers.

Sound engineer Bill Porter used it exclusively on recordings by Elvis Presley, the Everly Brothers and most of Roy Orbison's hits. On the Beatles' *Rubber Soul* album, virtually every track — from vocals, drums, guitars and the

tambourine — were recorded with a U 47.

Gene Lawson had not only grown up with the U 47, but revered its magical sound qualities. "The U 47 sounded so right automatically," he says. "It had a built-in character based on little bumps and valleys in the frequency response. Those just happen to make it the perfect vocal microphone. The U 47's character is defined by these imperfections."

With the original U 47 out of production since the early 1960s and getting more rare and expensive by the day, Lawson decided in 1984 that his next project would be to replicate the U 47's unique signature sound in a modern, affordable microphone.

The project began with an old, unusable M7 capsule — identical to the one used in the original U 47 — and an article Lawson found on how to build a condenser microphone. "I took that capsule apart and measured everything about it... hole depth, locations and size... everything. Then I took my drawings to a machine shop and had them produce the parts."

Lapping and polishing of the parts was completed by hand. To get better high frequency and transient response, the original mic's six-micron diaphragm was replaced by one of half the thickness. The diaphragms, made of gold-coated Mylar, are then applied by hand.

Lawson's first U 47 replicas were made for use in his and other local recording studios. After he perfected the design and user demand climbed, he began selling the first Lawson L47 in 1997. Now, the L47MP MKII, the latest version, remains the flagship in the



In Gene's backyard - these machines actually make some of the parts that Gene and Gayle use to make the microphones.

Lawson Microphone product line.

Even today, with his in-house computer-aided machine tools and other sophisticated parts manufacturing technology, much of Lawson's microphone construction is still performed by hand. "You cannot produce a

microphone totally on a machine and expect it to be right," he insists.

With the flood of extremely low-cost Chinese microphones continuing to enter the U.S., Lawson was quick to distinguish the differences between these mass-produced devices and his company's "tweaked, custom" products.

### **NOT MADE IN CHINA**

He notes that the Chinese manufacturers usually copy the Neumann U 87 capsule, not the 47. Even then, he said, most of the microphones are made to sound much brighter than the original 87, which was flatter and had a much different sound.

Another distinguishing difference, he said, is that the sound between most Chinese microphones, even identical models from the same factory, is not the same. This, he says, is due to the low manufacturing tolerances and the use of lower quality electronic components.

"The Chinese are certainly capable of doing high tolerance work, but that's not the case with most low-cost Chinese microphones. We work with very, very close tolerances and the

best components available so our microphones sound alike. They can't possibly do that for such low prices."

After about a decade of refinements, is Gene Lawson satisfied with the performance and sound of his U 47 replica? "Yes. Everyday we have people putting our microphone next to an original U 47 with very, very good results. There are slight differences, but we think those differences are actually improvements in many ways."

For example, he noted that the original U 47 was the first microphone to have switchable patterns. It had a preset switch for a choice of either a cardioid or omni pattern.

Instead of duplicating that switch, Lawson borrowed from the later Neumann M 49 model and added an infinitely variable multipattern feature. This allows the pattern control on his L47MP MKII to function in the same way as a common volume control—smoothly and without the limitations of preset switch positions.

The replica of the M7 capsule is now "locked." Lawson says he sees no way to make it better. For any future improvements, look to the electronics portion of the micro-

phone. Reducing noise, providing better quality components, improved power supplies, and advances in the tube (now made in Russia) are all candidates for later advances.

However, unlike with most technologies, microphones don't necessarily improve with technological progress. In fact, Lawson celebrates the imperfections as the defining attributes that make his L47MP MKII so much like the original.

"Sure, we could make a technically perfect microphone with flat frequency response. But flat microphones have no character. We have succeeded in keeping the warts and imperfections that gave the original microphone its magnificent sound. That was always the goal."

(The current price of Lawson's L47MP MKII is \$1,995. At the time this article was written, the asking price for a clean, used Neumann U 47 on eBay was \$13,200. For more information on Lawson microphones, visit: [www.lawsonmicrophones.com](http://www.lawsonmicrophones.com).)

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