

## From One Man's Mind...

Eminence in the (cone) driver's seat

By Keith Clark

In 1966, Bob Gault had an idea, and one of rather modest proportions at that. But it led to a thriving operation producing 10,000 rawframe speakers and compression drivers a day. Yes, that's 10,000 per day, four days a week.

Welcome to Eminence, Kentucky, population 3,000, situated amidst the pastures of central Kentucky and the home of the genesis of Bob's idea (and the company namesake), Eminence Speaker LLC. The privately held company started out in a small downtown storefront with the goal of producing three 18-inch woofers a day; now, it's one of the largest (if not the largest) component speaker makers in the world.

I recently had the privilege of catching up with the folks of Eminence, checking out the considerable processes that go into developing and producing what is now 6,000-plus models (and counting).

My tour of the 100,000-square-foot production facility, which has grown "organically" as demand increased through the years, took at least three hours. And to be honest, I could have spent another couple of full days taking in both the scope and detail of the operation. (Not to mention enjoying the relaxed and genuinely warm interaction with its people.)

But everything started with Bob Gault nearly 40 years ago, who founded the company after working as an engineer for Magnavox and CTS (Chicago



Bob Gault's legacy has been taken up by his son Rob (at right), and his hands-on approach insures that it permeates the company.



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Telephone Supply). Unfortunately, Bob passed away in 2002, but in the small consolation department, about a year prior he provided one of the best interviews I've ever read to *The ToneQuest Report*. (And take note, audio/music lovers – check out [www.tonequest.com](http://www.tonequest.com) and sign up for a subscription. You won't be sorry.)

"Everett Hull (founder of Ampeg) and I were pretty good buddies since we'd been supplying him with speakers at CTS," Bob recounted in that interview. "He wanted to get into 18-inch speakers, and he wasn't satisfied with what he was getting, so he came to me. I asked him how many needed, and he said about three a day. So with that agreement, I quit CTS."

This humble beginning, with Bob serving as designer and manufacturer backed by a sole salesman, was the springboard. Soon both Hartley Peavey and Leo Fender beckoned with orders from a man who had spent years defining and refining the design and durability of cone drivers, and doing so at a reasonable price point. There was no looking back.

Why locate in a small, ostensibly off-the-beaten-path location in Kentucky? Bob's mother didn't raise a dummy. Eminence is very well situated for efficiently shipping products all over the U.S. And soon enough, it was proven that the town and surrounding Henry County community could also provide the labor needed to manufacture products on a large scale.

Now under the direction of Rob Gault (Bob's son), the company has rebounded nicely out of the recent recession with aplomb. About 200 full-time personnel make up the workforce, with that number swelling in peak periods.

Chris Rose, who heads up U.S. dis-

tribution and marketing efforts, served as my tour guide as well as providing the inside scoop on Eminence past, present and future. By 1972, the storefront had become too confining so a new 30,000-square-foot facility was built on the edge of town, with several additions expanding and more than



*Clockwise, Lisa Willhite measuring Thiele-Small parameters on a woofer; one of the huge presses needed for heavy metal work; precision cone winding; and a rapid prototype machine which takes drawings and translates them into exact speaker parts.*



tripling that footprint.

Early on, the company followed a business model as a custom manufacturer. "Basically, this meant that anyone could call us up and say, for example, I need a speaker with a 2-inch voice coil and a 56-ounce magnet that meets "X" set of parameters, and I want to pay a certain amount,"

explains Rose. "We'd do it, or partner with them on making something along those lines possible."

Over the years, arrangements were made with certain distributors to act as OEM suppliers of Eminence products, and they also would sell to "box builders" (packaged loudspeaker system and/or guitar amplifier makers) as well.

Typically, these suppliers would have an affordable speaker made, without fancy cosmetic amenities – just the basics needed for solid performance. The situation eventually led to branding confusion, along with great competition among these distributors, all selling at very low margins.

"The upside was some marketing we didn't necessarily have to spend

money on, but the downside was the confusion about the product and its quality, and led to a stigma of thinking of Eminence as a 'cheap' speaker," Rose adds.

The company took full control of the situation and set a new

pace: only they would distribute their products, with full control of pricing, quality, appearance and every other factor. A bit ironically, many of the former distributors are selling the products again – but ones with far more profitability. A classic win-win.

Today, the company's primary customer bases are split evenly between professional audio and "MI" (guitar amps, bass amps, etc.), with the rest going to more "specialty" applications. On the pro side, the customer base reads like a "who's who" – Yamaha, Renkus-Heinz, Community, Peavey (uninterrupted for 35 years), along with many more who can't be mentioned for privacy/proprietary reasons.

"The Yamaha situation is satisfying, because in a neat twist, we're an

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American company supplying a foreign-based entity – kind of unusual these days,” Rose notes. The guitar side of the customer roster is just as illustrious, featuring names like Fender, Marshall and St. Louis Music.

“Our brand is our foundation, it means something quite positive to our customers, and we work to keep it strong now and for years to come,” Rose says. “In our view, this is at least part of what keeps our customers from going offshore for ‘cheaper’ solutions.”

Sometimes many of us tend to overlook the vital nature of components, which are at the very heart of any electronically reproduced sound. Yet it’s critical to understand that the tone of a loudspeaker is vital to sound, and this goes just as much for PA as it does for guitar amps.

The situation is improving, Rose tells me, where manufacturers are attaining an ever-escalating level of sonic excellence while still keeping price tags in perspective.

“We’re living in a wonderful time, where so many pro audio manufacturers are providing more quality for the same dollar,” he adds. “Twenty years ago, a given car might have cost you \$10,000, and today, an equivalent one is \$30,000. Pro audio is rarely like that, and it’s a testament to the innovation of this industry.”

The ever-growing Eminence product stable begins with the tightly knit engineering team headed by Tom James. Team members offer various specialties and also work closely with each other to provide interdisciplinary support. The company continues to invest in technologies that help further both engineering and manufacturing efficiencies.

Other manufacturing tools are so specialized that they must be created from the ground up, under the direction of the company’s tool and die department. They stay extremely busy, both in creating new devices while continuously tweaking current ones to work better and more efficiently.

Listing out the sheer volume of specialized equipment and processes it takes to design and assemble the drivers would be mind-boggling. At the same time, let’s have a look at some of the highlights that lead to a bit more understanding.

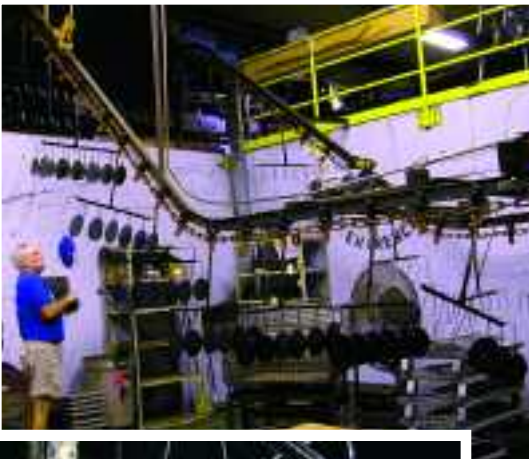
The Eminence lab is outfitted with several measurement systems for measuring SPL and impedance curves as well as distortion. These systems include a LMS (Loudspeaker Measurement System), primarily to measure woofer parameters and curves for woofers; a Klippel system for distortion measurements; and an Audio Precision system mainly devoted to high-frequency devices.

Meanwhile, an Ansoft/Maxwell FEA (Finite Element Analysis) software package that analyzes magnetic fields within the motor structure of a loudspeaker is used to unearth and eliminate unwanted distortion.

A fully automated power test facility offers more than 30,000 watts of power amplification and eight test channels. Eminence normally uses the EIA-426A power test standard, but can adapt to meet specific customer power handling requirements. A Harris Technology enclosure and crossover design packages is on hand to assist customers in the development of enclosures for their application.

Most recently, the company has invested in a True Compliance spider tester, modified so that it can also measure the compliance of cones as well.

Many techniques, specialty equipment, and proprietary materials have been developed by (or for) Eminence to make voice coils more consistent and durable. It all contributes to consistency: controlling and monitoring winding lengths and the number of wire turns on each coil; applying coatings to wire; activating adhesives; and “cut and wind” bobbin materials.



Top to bottom, thousands of cones of different sizes, types and materials; speaker baskets at the ready; moving components through the facility on a belt system; one stop along the way is the paint line.

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The pressroom equipment allows the manufacture of virtually any combination of metal assemblies needed for a driver. Three 300-ton presses are on hand are used for “blanking” the top and back plates and related duties. A 600-ton press handles even bigger chores, while smaller presses fill in the gaps and provide punching, stepping baskets, pressing venting screens, and more.

The black epoxy paint used on every speaker covers the entire surface of the basket, including the magnet gap. In a process called electro-coating, the thickness of the coating can be precisely controlled. (And it’s environmentally friendly.) In a nutshell, the coating is electrically charged, while the parts have an opposing charge, thus setting up a strong attraction between the two.

Once the coating has been applied, the parts are immediately washed with a final rinse and then are run through an oven to cure and harden the coating.

The critical product assembly work is done largely by hand. Not only are certain processes very difficult to automate, but also the “human tactile” approach helps insure an added level of quality.

This is in evidence at the two final assembly lines, each staffed by 19 skilled employees backed up by support staff. With components moving steadily down a moving belt to specialized workstations, the process begins with the assembly of the core and back plate along with the magnet to the basket and top plate, moves along to attachment of terminals, then cone setting, coil alignment, spider installation and bonding, edge treatment, dressing the coil’s lead wires,

*Left to right, Kim White inspecting a coil; Todd Raiser setting a cone; Travis Parisek loading finished speakers on a pallet; and Betty Estes placing a coil on the final assembly line.*

dust cap and gasket installation, and on and on...

The processes continue to the end of the line, but along the way, each worker checks quality. Once placed on pallets, components go to the pack/test department for additional quality inspections before moving to the shipping cue. Each speaker is given a unique code so that the company can easily track the source of any problems.

Returning from our walk through the busy production facility, Rose notes that the current business climate at Eminence is strong, coming off the downturn of the economic recession with 9/11 as the kicker.

“It’s really a tribute to Rob,” he explains. “When things slowed down, he looked at new opportunities to be better and smarter. We worked hard at becoming ISO certified, pushed through a major strategic planning initiative, along with more than 25 programs dealing with upgrading equipment, testing, marketing and more.

“Another area we focused on was issues relating to our workforce, how we could make their jobs better, how we could help with keeping morale consistently high,” he adds. “We’re also proud that all employees participate in profit sharing, and we’ve always been able to make good on that.”

The fruits of those productive efforts during “downtime” are now being enjoyed, with the company looking ahead to a bright future. The goal is to keep focus on the bedrock rawframe speaker business and not stray into uncharted waters.

Products range from the “highest of the high end” to solid professional to the basic, with the higher end seeing increasing attention these days. Whatever the case, it comes down to what the customer wants.

“This company is a family,” Rose concludes. “We don’t want to jeopardize that in order to go running off in risky directions, such as building loud-speaker systems. There are plenty of companies doing that already, and doing it well. And, our potential in our core business has never been better.”

So, 10,000 speakers a day (7,000 to the U.S. alone) – it’s amazing what one little idea can lead to. ■

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