



Luthier Randy Muth taps a soundboard and listens for the vibration frequency of the wood that will be used for the top of his custom-built guitars.

The **art and craft** of a **modern-day luthier**

A confluence of creativity, experimentation, science and craftsmanship

STORY BY **RICHARD BARRETT** | PHOTOS COURTESY OF **PATTY MATSON**

Gaining prominence during the Renaissance and Baroque periods, the stringed instrument known as the lute was introduced to Europe through Spain and Arab countries.

They were built by skilled craftsmen known as luthiers, derived from the French word for lute. Luthiers build and repair wooden, stringed instruments featuring a neck and sound box, like guitars and violins.

From a shop that he designed and constructed himself, offering a stunning view of picturesque Craine Lake in the Town of Hamilton, a talented and highly reputable luthier named Randy Muth is busy hand-crafting another of his guitars. These are one-of-a-kind musical masterpieces made specifically for a more discriminating or demanding client willing to pay extra for a custom-built, signature sound.



One of Muth's custom guitars begins to take shape.

"After building for a while and working with your own ears and sensibilities, you develop a signature sound that carries through," he explained. "And even though I build four different sizes where the tone changes for each size, there is something about my sound that comes through."

My guitars tend to be very balanced and clear. I go for a really tight, clear bass and for sweeter trebles as opposed to twangy ones."

Hitting that tonal sweet spot is a collaborative process, involving Muth working closely with his clients to obtain their input.

"Someone may have very specific ideas about what they want, or they may not, but I try to get an idea of how they play and what type of music, whether they're flat pickers, finger pickers, strummers, and what they're looking for tonally," Muth explained. "I like to get a clip so I can listen to them playing and try to get a real feel for what they're looking for so I can tailor not just the look, but the sound, which is very tonally balanced up and down the fretboard and across the strings."

Muth is a former senior scientist for Procter & Gamble Pharmaceuticals with a Ph.D. in organic chemistry who left the corporate world behind 15 years ago because the work no longer interested or challenged him.

"I love working with my hands, building things, and I love music, so this was something I felt I could really dig into," he said. His wife, Patty, also an organic chemist with a Ph.D. whom he met at graduate school, continued to work while Muth stayed home with their young children, Eric and Haley, now adult working



Muth places celery seeds on a soundboard and uses a frequency generator to find the vibration modes by examining the patterns they form.



Randy Muth's custom built studio offering inspiring views of Craine Lake in Hamilton.

musicians. Muth, interestingly, does not play an instrument.

Nonetheless, he brought his science background and an appetite for experimentation and discovery to his newfound line of work. That means, for example, employing specially-designed bracing patterns and utilizing specific materials and sophisticated measuring

equipment to ensure structural, tonal and aesthetic integrity.

"Organic chemistry is an experimental science, and I'm the discovery type, so I have a very experimental approach to guitar building," he said. "I use a signal generator and look at vibration modes that help guide how thick to make the soundboard, or the back and sides. It's part of



“
I LOVE WORKING
WITH MY HANDS,
BUILDING
THINGS, AND
I LOVE MUSIC,
SO THIS WAS
SOMETHING I
FELT I COULD
REALLY DIG INTO.

”
RANDY MUTH
LUTHIER

Randy Muth was featured along with some of the top luthiers in the country in the March 2020 issue of “Acoustic Guitar Magazine.” To learn more about Muth’s guitars, visit rsmuthguitars.com.

Muth displays one of his finished custom guitars featuring a mahogany back.

the tool kit, as well as my own ears.”

What light is to a photographer, tone is to a skilled luthier. And like light, tone emanates from different places. Because different types of wood are used for a guitar’s top, sides and back, the quality of the tone is determined by the wood’s thickness and stiffness, and the guitar’s size and shape, as well as the balance between the top and the internal bracing, Muth explained.

The bracing, which isn’t visible, is structurally fundamental to tonal quality and efficient playability. So much so that Muth has developed his own pattern that he uses along with traditional ones he’s acquired over the years.

“A custom builder can be more consistent than a company that mass produces guitars,” he stated. “They’re automated and building to dimensional specs, and the wood varies a lot in stiffness and weight. I can vary dimensions to get a certain tone and sound, whereas they can’t. I’m building to tone; I tap and

listen, and I care that the stiffness and frequency response is consistent.”

Muth uses spruce for bracing and soundboards, along with cedar, redwood sourced from the Pacific Northwest through dealers and suppliers. For more exotic varieties like mahogany and rosewood, he relies on a network developed through years of attending acoustic guitar trade shows, where he also proudly exhibits his handiwork.

After building more than 80 custom guitars over the last 15 years, Muth hasn’t determined which part of the process he enjoys more — designing or producing. Each one takes about 75 to 80 hours spread over several months.

“I like discovering new things, and the experimental part is good, but I’ve also become Zen about working with my hands,” he joked. “I enjoy both aspects, but sometimes get a creative urge to do something totally different and build instruments for my own, like a ukulele and a mountain lap dulcimer, where I

can apply some of the basic principles of sound to that.”

Muth plies his craft with a degree of simplicity, beginning with a holistic design approach and an aesthetic based on the theory of gestalt — the whole being greater than the sum of the parts.

He explained, “the idea that all these things come together in ways of talking about sound, like tonal balance, volume, projection, clarity, balance, sustain, lots of things. You can’t have 100% of all those things, there are trade-offs, but as a custom builder, that’s what we can do. We can move things around in that realm. That’s what creates the sound you have, and it’s all of these different things coming together.”

Aside from the personal satisfaction Muth derives from designing and building, he says the feeling of anticipation before handing over a finished instrument, and then seeing the reaction and hearing it played, is like no other.

It’s just music to his ears. **A**