

Hitting a high

Gibson USA proves that manufacturing in America ROCKS.

note

In the second installment of our Made in America series, CTE columnist Mike Principato learns what it takes to make the legendary Gibson Les Paul guitar.

Sure, they ship tens of thousands of the most desired electric guitars in the world every year. Yes, they sell every one they make for prices that would cover two or three of your mortgage payments. And, of course, they'll make you your very own model if your name happens to be Jimmy Page or Slash.

But the most impressive thing about the folks at Gibson USA and the legendary Les Paul guitar they produce is that they have somehow mastered the art and science of making a handmade, custom guitar in a mass-production setting. Think of it: Even as you're reading this, dozens of musicians are purchasing an instrument that bears all the hallmarks of a customized product, from its electronics to its high-gloss finish, an instrument that emits a sound as unique and desired by Les Paul aficionados as the characteristic "potato-potato" sound is by Harley-Davidson fanatics. And thousands more are saving their hard-earned money with the dream of buying one.

Although Gibson USA, Nashville, Tenn., makes a huge variety of guitars and musical instruments, none has the storied history of the Les Paul. Designed and launched in 1952 in cooperation with its namesake, a virtuoso jazz guitarist, the Paul was one of the world's first commercial solid-body



The legendary Les Paul guitar.

electric guitars. Les Paul the inventor was also an avid electronics innovator. His unique pickup system—two sin-

gle-coil electronic devices that literally "pick up" the sound of the strings—in combination with Gibson's vision for

an electric guitar that was as much artwork as instrument, made the new model an instant hit.

How is it possible that a product design that has remained essentially unchanged for 54 years, sold in an industry notorious for starry-eyed dreamers and marginal profitability, and priced above—*way* above—the majority of its competitors is setting sales records today?

That question and others, including whether or not there would be time to buy some cool souvenirs at the Gibson gift shop, were on my mind as I arrived at Gibson USA's Nashville manufacturing plant, home of the famed Les Paul, SG, Firebird and Flying V, among other iconic electric guitars.

Today, I would be the guest of Gibson Support Coordinator Eric Marlow, a pleasant young man who greeted me at the entrance of the plant, a sprawling, pre-engineered, one-story steel structure that by its bland exterior could just as easily be the home of Acme Fork and Spoon Manufacturing Inc.

Adopting my best investigative journalist practices, I quickly ascertained that, yes, Marlow plays guitar (a Les Paul Junior model), yes, lots of his fellow Gibson employees also play guitar (sometimes engaging in impromptu jam sessions during lunchtime), and, no, my credentials from CTE would not be sufficient for his company to produce a Mike Principato Signature Les Paul, particularly given the fact that I am a drummer.

Such interrogations out of the way, I was ready to enter what is hallowed ground for this aging, recreational rock 'n' roller.

Old School Meets New School

The “artwork” part of making a Les Paul begins in the company's rough mill, a humidity-controlled, 60,000-sq.-ft. building that's the world's largest wood shop. One step inside and the wonderful aroma of sawdust took me right back to high school and my first turn on a lathe.

This sawdust, however, is a lot more expensive than the pine stuff my shop teacher allowed me to generate by the bucket. It is the byproduct of rough-



The tracing mill, or “guitar copier,” rough-planes bodies of the Les Paul.

machining mahogany, maple and rosewood, the woods used by the truckload to make the typical Les Paul's body, top and neck, respectively. I wondered if Greenpeace would be slashing the tires of my motorhome in the Gibson parking lot, payback for my support of a company that seems to be consuming an entire rainforest.

Not to worry, Marlow assured me. Turns out that Henry Juskiewicz, chairman and CEO of Gibson, is an environmentalist who's allied with the Forest Stewardship Council, a nonprofit organization that protects rainforests from depletion by certifying “good

wood” with an FSC stamp. Marlow noted that Gibson uses a huge amount of this environment-friendly wood. “We won't use Brazilian rosewood or Honduran mahogany, for example; whenever possible, we use sustainable, replantable woods,” he said.

My conscience assuaged, I turn my attention to a 20'-wide tracing mill that Marlow calls a “guitar copier.” Like a mammoth key-duplicating machine, the machine is pure old-school Gibson. It rough-planes the distinctive contours of the Les Paul body, 12 at a time. For a company the size of Gibson, I told Marlow, it's rather Rube Goldberg-ish, no?

He agreed, and then led me about 50' down the factory aisle to a CNC version of the same machine, chugging away at the same task. “We're still evaluating this machine,” he explained, “to be sure that it produces the same body as the old machine.” It was not the last example of a clash of technologies I saw.

Minutes later, I was introduced to “Mack,” a 29-year veteran of Gibson, methodically slicing rosewood into guitar necks. Mack's job, like many of Gibson's experienced craftsmen, is critical. He has to quickly and accurately detect and slice along the grain of each unique plank of wood to ensure the Les Paul's characteristic sound and feel. He's a man of few words who's accustomed to plant visitors. I got the feeling that if I were B.B. King I'd



Guitars hang for 4 to 5 days to allow the lacquer to fully dry.

Gibson

Lust, thy name is Les Paul

In every manufactured-product universe there are brands—and then there are solid-gold brands. The latter bear the kind of mystique and cachet that marketing execs dream about, an aura that transcends its respective industry. Think Mercedes-Benz, Tiffany and Godiva.

In the guitarists' world, the Gibson Les Paul has that aura. I can barely play an F chord (hey, gimme a break, I'm a drummer!) and I've wanted a Les Paul since I was 12 years old. That lust was inspired by a 15-year-old guitar god with the very un-rock hero name of Bob Klotz.

Klotz looked more geek than god, with his skinny frame, unkempt long hair and thick, aviator-frame glasses. He didn't have much of a personality, either, as I recall. But he could, as Chuck Berry

might say, play a guitar like he was ringing a bell. In Klotz's case, it was a gold-top Les Paul Standard.

That guitar, and the preternatural skill with which Klotz wrung its trademark wailing, searing, sustained-longer-than-a-Baptist-preacher's-sermon sound out of it, instantly transformed its owner from awkward adolescent to a local Eric Clapton. Every garage band in the neighborhood, and beyond, wanted Klotz as their lead guitarist. And every teen-aged girl wanted him as her leading man.

Over the 34 years since then that I've drummed with rock and jazz bands, I've played with a lot of guitarists who swear by Les Pauls. But I've never forgotten the first one I ever saw, in the hands of a kid I haven't seen since.

—M. Principato



Les Paul himself playing one of his famous guitars.

get the same greeting.

His work, along with everyone else's in the Gibson manufacturing operation, is constantly checked at random by quality-control staffers who report directly to the general manager. Marlow told me that the general manager's policy regarding QC is simple: "All is forgiven EXCEPT passing along poor quality." The plant produces less than 1 percent scrap and less than 2 percent rework. No factory outlet here for "irregular" merchandise.

As we moved from the roughing area to the next stage of guitar production, I began to understand one of the reasons for Gibson's success: vertical integration. Other than a handful of relatively minor components (the

veneer that attaches to the guitar's headstock, for example), the Les Paul is made entirely from parts produced at the Nashville plant.

But it isn't the mere collective of raw materials and machinery that make a great product, or, in this case, a great guitar. No, the Gibson plant's success has as much to do with the

use of vertical integration as with the skilled, and in many cases, veteran craftsmen who still perform the most crucial guitar-making operations by hand.

Art of Neck Rolling

Consider, for example, the 10 men working in Gibson's "neck rolling" department. They are masters at shaping the necks of the company's various guitar models and ply their trade more by feel than by mechanical gage. I stood watching them for a few minutes and noted the intensity of their concentration as they carefully and methodically sanded individual guitar necks, inch by linear inch, under rolling buffing wheels.

"Call me crazy, Eric, but that looks like incredibly tedious work," said I, always the diplomat.

"It may be, but these guys are performing some of the most important work in the plant. None of them has less than 10 years of experience, and to get this job—it pays very well—an employee has to apprentice," he replied. He added, with justifiable pride, "This is what it means to be 'hand-made.'"

I was instantly reminded of my first shop foreman, who told me that the first stage of his apprenticeship consisted of receiving a blob of steel, a micrometer and a flat file with instructions to "come back when the block was square." Same tradition, different application.



A veteran Gibson craftsman hand-works the neck on a Les Paul, a process called "neck rolling."

A Delicate Balance

That's not to say that Gibson has resisted technology to the point of inefficiency in their Les Paul manufacturing processes. It's just that it's clear that the bosses have decided that a delicate balance of computerized manufacturing and hand craftsmanship must be preserved to produce the Les Paul that musicians have come to expect, both in feel and tonal quality.

Thus, the entire operation is a study in paradoxes: CNC routers cut bridges, pickup slots and tailpieces just yards away from men who literally mummify guitar tops and guitar bodies together with cloth strapping during a gluing process that makes Congress look efficient by comparison. But there's simply no better way to produce a Les Paul, and that's that.

Process management, too, is a study in contrasts. An unending parade of guitars hanging from a motorized conveyor whirred overhead, each instrument tagged and monitored by production management software. But after each guitar is fitted with electronics and receives its six coats of lacquer and buffing, there's a whole team of employees in the finishing department who have the toughest job of all: Playing the finished products.

For some reason, those guys seemed to be happiest ones in the plant. △

About the Author

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Les Pauls are renowned for their lustrous finish, a result of six coats of lacquer and a buffing process.

Orville Gibson: hitmaker

In 1881, Orville Gibson worked as a shoe clerk in Kalamazoo, Mich. But his great love for woodworking and a passion for music started him thinking about guitar and mandolin designs.

Applying violin construction ideas, and inventing some new ones, he began making instruments. His mandolins and guitars had carved tops and backs instead of flat ones. They became an instant success when introduced in 1894.

When orders began coming in faster than they could be filled, Gibson was finally persuaded to set up a company. The Gibson Mandolin-Guitar Co. Ltd. was incorporated on Oct. 11, 1902.

Many hits songs have been played on Gibson instruments. Following are some of the best-known:

1910 "Yankee Doodle Backwards" by vaudeville star Jimmie Johnstone, played on an F-2 mandolin. He would announce this number, then put his Gibson behind his head, turn his back to the audience and play "Yankee Doodle."

1928 "Wildwood Flower" by the Carter Family, with the all-time classic country lead guitar part played by Maybelle Carter on her L-5.

1932 "When the Blue of the Night (Meets the Gold of the Day)" by Bing Crosby, accompanied by Eddie Lang on his L-5.

1936 "Terraplane Blues" by Robert Johnson on his L-1.

1939 "Muleskinner Blues" by Bill Monroe and the Blue Grass Boys established bluegrass music, with Monroe on a J-35.

1954 "That's All Right Mama" by Elvis Presley, with Scotty Moore on an ES-295.

1955 "Maybelline" by Chuck Berry on an ES-5.

1967 "Sunshine of Your Love" by Cream, with Eric Clapton on an SG Standard and Jack Bruce on an EB-0 bass.

1969 "Lay Lady Lay" by Bob Dylan on a J-200.

1970 "The Thrill Is Gone" by B.B. King on his ES-355.

1973 "Ramblin' Man" by the Allman Brothers Band, featuring Dickey Betts playing a Les Paul.

1993 "Are You Gonna Go My Way" by Lenny Kravitz on a Flying V.

—Based on information from the Gibson Web site (www.gibson.com).