Marriage of Metal and Wood

Woodworkers in search of a perfect union of materials

BY JONATHAN BINZEN

Wood is such a compelling material that it's easy to spend a career building with nothing else. Its range of textures, tones, and aromas, its strength and warmth, its adaptability and flexibility—all these make it inexhaustibly interesting to use and explore.

But for some dyed-in-the-wool woodworkers, the enjoyment and challenge of using wood is deepened by pairing it with other materials. We've brought together here a handful of the many makers currently advancing the art of combining metal with wood.

Greg Klassen, a furniture maker trained in woodwork in the program founded by James Krenov, speaks for many other materially adventurous makers when he says, "Wood is my first love, but I'm always searching for a material to pair with it, something that makes the wood even more beautiful."

And Seattle furniture maker Stewart Wurtz, who builds primarily with wood but includes a wide range of metals in his work, says, "When you pair metal with wood you create contrasts—of hard and soft, cold and warm, bright and matte—that emphasize the best attributes of both. It's a marriage of materials, and they really sing when they're combined."

Photo, this page: Tor Erickson

Michael Robbins

PHILMONT, N.Y.

When Michael Robbins has an idea for a new piece of furniture he'll start with some "quick, intuitive sketching," but the design process really comes to life, he says, when he gets his hands on the material. "I've never been great at drawing, so I'll just pull out some material and start making something." The material is most often wood, but Robbins, being largely self-taught in woodworking, is not afraid to dive into other materials and learn them as well.

His Bridle benches, with their bows of brass bar, were born when he had a prototype for an all-wood bench in progress in his shop. "One day I ordered some brass bar and just tried it out," he says. Purchasing free-machining flat brass bar stock from Onlinemetals.com (his go-to source), he found he could cut it cleanly with a chopsaw and bend it by hand without kinking. For the benches, he uses brass bar stock ⅛ in. thick and 1 in. wide and pins it at the midpoint to the underside of the bench with a wood screw. At the ends he uses Chicago screws sealed with Loctite to attach the bar to the stretchers. On pieces that require bends of a radius too tight to make by hand, Robbins has a metal shop bend the brass bar for him with a ring roller.

The brass bonus. *Blending brass and wood "brings a piece into a new realm," Robbins says. Like the leather he often uses on seating surfaces, brass offers a contrast with wood in color, texture, and warmth. Robbins polishes the brass with Scotch Brite and brings it to a shine with Brasso brass cleaner. He leaves it without a finish, so it develops a patina over time.*

Photos, this page: Jonathan Binzen (portrait), Michael Robbins (furniture)

Greg Klassen

EVERSON, WASH.

For Greg Klassen, live-edge slabs are an ongoing inspiration. "I always put a huge value on celebrating and showcasing the beauty of the wood," he says. One way he does that is by seeking out other materials to pair with it that emphasize wood's attributes. Steel, Klassen finds, is a perfect complement to wood, allowing the wood to shine while delivering structural properties that wood lacks. For his series of Longhorn tables, Klassen designed a leg with a shape that would have been weak in solid wood. By sandwiching wood between ¼-in.-thick sheets of mild steel, though, he created a leg that delivered both strength and style.

Klassen had the steel cut at a metal shop, where they used a CNC-driven laser to cut the perimeter and create the screw holes. From the waste areas of the sheet, Klassen had them cut butterflies, which he mortised into the tabletop.

To make the interior portion of the leg, Klassen milled rectangular pieces of 10/4 walnut and connected them with mortise-and-tenon joints. He used the laser-cut steel as a template, first tracing it onto the wooden blank and bandsawing near the line, then screwing the steel in place and using it to guide a flush-trimming bit in the router table.

Klassen creates a slightly cloudy surface pattern on the steel by sanding it with a fine-grit pad in an angle grinder. He wipes a poly-oil finish on the completed leg.

Style and substance. *Steel, whether in sheet form or rod, brings out the warmth of wood while providing structural solutions that wood can't. For his side chair, Klassen worked with a metal sculptor, who bent most of the side frame from a single bar, then welded in the seat rail.*

Photos, this page: Greg Klassen

Stewart Wurtz

SEATTLE

Stewart Wurtz has been building furniture with wood for 40 years, and it's still the predominant material in his repertoire. But in more and more pieces lately he's finding a role for metal. "What draws me to metal," he says, "is the simplicity, minimalism, and practicality it provides." It enables him to bring lightness to his designs without sacrificing strength. "And when wood and metal are juxtaposed, both materials really jump."

Aluminum was the entryway into metals for Wurtz, because he could easily work it with woodworking tools. And when he saw the design opportunities aluminum offered, he was encouraged to explore further. He'd used aluminum mainly as an accent element, but he turned to steel for its structural muscle.

Wurtz developed relationships with local metal shops, and through working with them learned the strengths and nuances of each material, enabling him to design with those attributes in mind. Once folded, even thin sheet steel becomes totally rigid, he learned. He was able to build his outdoor bench with 3⁄16-in.-thick stainless steel brake-formed to an L-shape. Bending creates a radiused corner, as in his ash and blackened steel desk. In a design where he wanted sharp corners instead of rounded ones, he would specify welded joints rather than bent ones.

When wood and metal are juxtaposed, both materials really jump.

Levitation in steel. *Wurtz uses sheet steel in ways that emphasize its thinness and apparent lightness: He left the back of his nightstand open, created a void at the center of his side table's steel base, and offset the drawer box from the steel frame of his desk. Steel can be powder-coated, a paint-like process, but Wurtz's blackened steel pieces have a patina produced through chemical oxidation by spritzing the surface with a solution and wiping it off.*

Photos, this page: Jonathan Binzen (portrait), Timothy Aguero (furniture)

Robert and Tor Erickson

NEVADA CITY, CALIF.

In Robert and Tor Erickson's shop, perched among towering pines in California's Sierra Nevada Mountains and powered by solar panels, outstanding wood has been at the heart of things since Robert began making chairs 45 years ago. He had used wrought steel in his work (see the back cover), and had used aluminum as an accent material. But now that his son, Tor (right), has joined him in the business, a wide range of metals are becoming commonplace in their furniture.

Brass meets burl. *Tor Erickson turns a burl detail that's placed at the junction between the upper and lower portions of the leg. The round screw plate, machined to their specs along with the leg, provides ample attachment for a rock-solid table even without aprons.*

The Ericksons work with traditional blacksmiths for their pieces in wrought steel, and with a machine shop with CNC capability for much of their work in brass and machined steel. For their dining table at right, with its top of claro walnut, Tor envisioned very thin legs. He was inspired by Mid-Century Modern legs in wood but wanted them made in brass. When he heard that their machinist's lathe was not long enough to make the legs in one piece, he decided to add a turned burl detail at the joint—"a happy accident," he says.

For their Langhorne stool (opposite), the Ericksons wanted a piece that felt totally solid in use yet would fold flat with ease. To achieve both objectives, they needed a piston fit for all the moving parts. They got it by sending the legs out to be turned and drilled on CNC machinery.

Photos, this page: Jonathan Binzen (top, center left, center), Tor Erickson (center right), Iker Basterretxea (bottom right)

Elm above, brass below. *For this outdoor table in European elm, the Ericksons made brass gussets to reinforce the leg-to-apron joinery. They used woodworking tools—bandsaw, router, files, and twist drills—to shape the parts, and 0000 steel wool to burnish them. They ordered the brass from the McMaster-Carr catalog (mcmaster.com).*

Tightening the tolerances. *For maximum precision, the Ericksons had the legs and rungs machined by shops with CNC equipment. To match those tolerances while they drilled holes by hand, they used MDF templates with steel bushings.*

Photos, this page: Tor Erickson (top left, top right), Jonathan Binzen (center left, bottom left), Revisit (bottom right)

Peter Harrison

MIDDLE GROVE, N.Y.

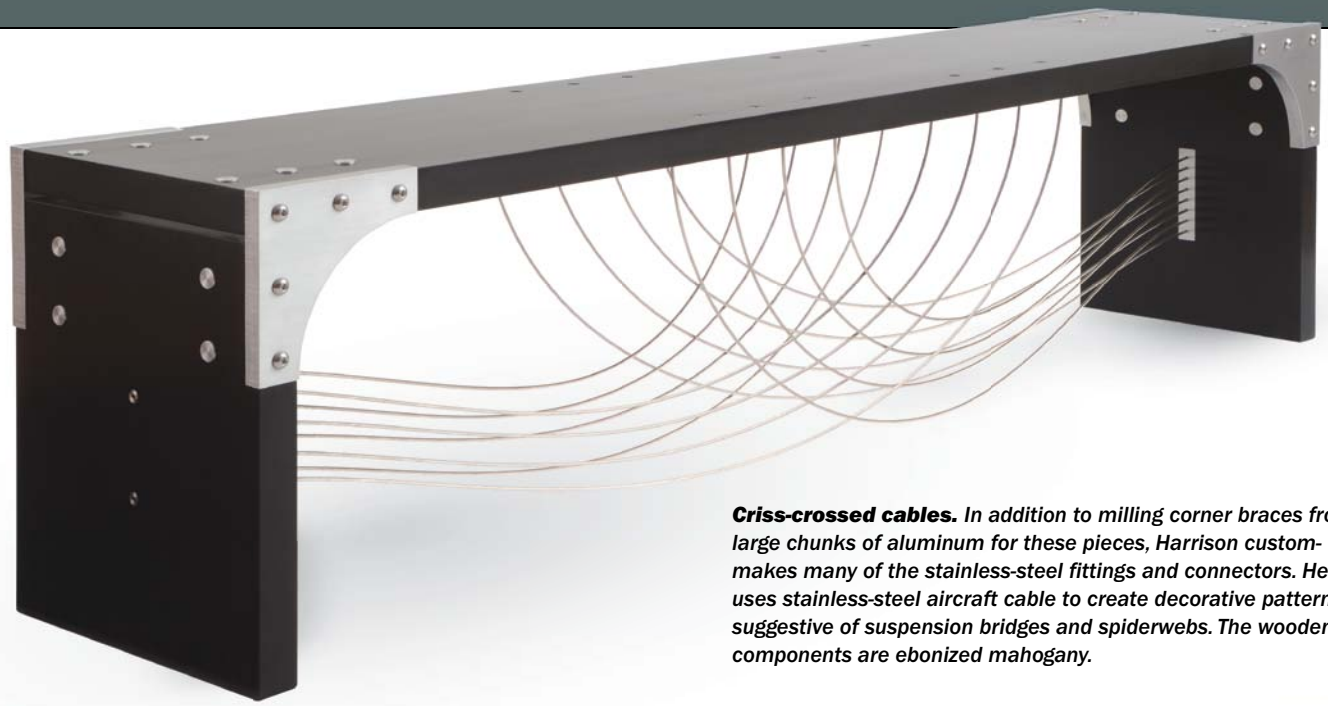
While studying in the renowned furniture program at Rochester Institute of Technology in the 1990s, Peter Harrison received a thorough indoctrination in working wood. But even before he left school he was delving into metals. And in the years since he has become entirely ambidextrous in the two materials. In the shop he built near Saratoga Springs, N.Y., he has a full machine shop to complement his impressive woodworking setup, and he can shape and machine metal parts for his furniture as fluidly as ones in wood.

An early impetus for blending metal and wood was to avoid traditional woodworking joints. He thought it would be more efficient to machine his own fasteners than to lavish time on cutting and cleaning up complex glue joints. Along the way, his metal components have become as decoratively powerful as they are structurally dependable.

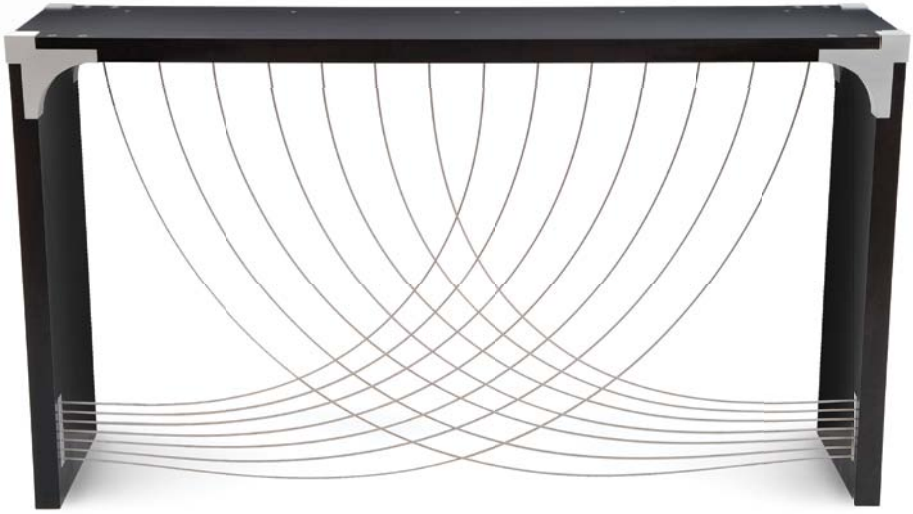
Beauty in a box. *Harrison's Oahu table was designed for a client in Hawaii so it could be transported in a suitcase and assembled on arrival. The system of brackets he devised was fun and effective, and has since spawned a series of other pieces.*

Working metal in the woodshop

Many of the machines in Peter Harrison's shop serve double duty, proving equally useful for shaping wood or metal. To make the gussets for a recent piece, he began by cutting aluminum sheet stock to rough shape at the bandsaw. On a typesetter's tablesaw that he finds indispensable for fine crosscutting of both wood and metal, he makes square cuts on three sides of the gusset. With a template-routing jig on his shaper, he trims the curved parts of the gusset to shape. And finally, at the drill press he cuts screw holes, which he'll then de-burr with a hand drill.



Criss-crossed cables. *In addition to milling corner braces from large chunks of aluminum for these pieces, Harrison custom-makes many of the stainless-steel fittings and connectors. He uses stainless-steel aircraft cable to create decorative patterns suggestive of suspension bridges and spiderwebs. The wooden components are ebonized mahogany.*



Photos, this page and opposite: Jonathan Binzen (portrait and action shots), Stock Studios Photography (furniture)