The Why of the Windsor

A veteran maker explains the roots, the rationale, and the powerful appeal of America's classic chair

BY CURTIS BUCHANAN

Windsor chairs are enduring. Three centuries after they first emerged, in England, Windsors and their offspring account for about half the wooden chairs on the planet. Post-and-rung chairs and their descendants account for the other half. The Windsor got its robust DNA from the 17th-century Welsh stick chair. With a thick seat made of elm, and legs, stretchers, and arms hewn from hefty pieces of white oak, the Welsh stick chair was a tank with style. Instead of being made cabinetmaker-fashion with a skeletal structure and rectangular mortise-and-tenon joints, it had "sticks" socketed into the top and bottom of its seat to make its back and its undercarriage. English makers adopted this method of construction for the Windsor, and by the 1730s some of their new chairs—probably comb-backs—crossed the Atlantic and landed in Philadelphia, where the Windsor style promptly caught fire.

Soon woodworkers in other colonies responded with their own versions, some based on English designs like the sack-back, and others, like the continuous arm, proudly American. Here the once-beefy Welsh chair was transformed into a slender and resilient chair without an ounce of extra weight. Unconstrained by the guilds that strictly regulated English chairmaking, colonial makers experimented and innovated. By the time the Constitution was written, Windsors were the most popular pieces of furniture in the country. Ships that entered northern harbors with loads of cotton from the south filled their holds with Windsors for the return. Up and down the eastern seaboard, Windsors graced farmhouses and statehouses, mansions and barrooms. They were used by the wealthy for seating in the kitchen, on the porch, and in the garden, and by the common man as his one chair, moved to wherever he wished to sit. What made Windsors so popular and enduring? The answer starts with their structure.

The seat is the anchor

The seat of a Windsor is the keystone of the chair, anchoring the undercarriage and the upper structure. Without the seat, all you have is a handful of sticks on the floor. In a post-and-rung chair, by contrast, the seat is added after the structure is complete. In a Windsor, the seat not only ties the whole chair together structurally, but it also trestles the chair together visually. As the largest mass of solid wood on the Windsor—the rest being mostly air—the seat draws your eye first.

Windsor seats need to be thick to allow for long mortises and for deep sculpting of the saddle, but they're usually carved from soft, light wood, and the whole chair can come in at less than 8 lb. That's incredible for a chair that can hold a 200-lb. person comfortably, day in and day out, for many years.

The Windsor's strength and durability result from the fact that its parts are triangulated. Its outward splaying legs create opposing forces, for a very firm foundation. And on armchairs the forward-leaning arm supports help constrain the force of the sitter's weight against the back. Conversely, a traditional post-and-rung chair, with its parts perpendicular, has to rely on its small joints to resist racking forces—a losing proposition. Windsors, with triangles everywhere, naturally resist racking.

Windsors are also made to flex, which reduces strain on their joints. And because they are traditionally made from split stock, their continuous-grain parts have maximum resilience—the ability to bend under load without breaking—which is a boon for comfort as well as durability.

Which wood for Windsors?

The craftsmen in the New World were stunned with the forests they found, brimful of workable woods. In the Appalachian mountain chain they came into the most diverse temperate forest in the world. While the tropics had rosewood, mahogany, and hundreds of other species, they had nothing to rival ring-porous hardwoods. Colonists could split these woods to very close tolerances and work them green with hand tools very efficiently. These attributes, coupled with superb tensile strength, flexibility, and suitability for steam-bending,

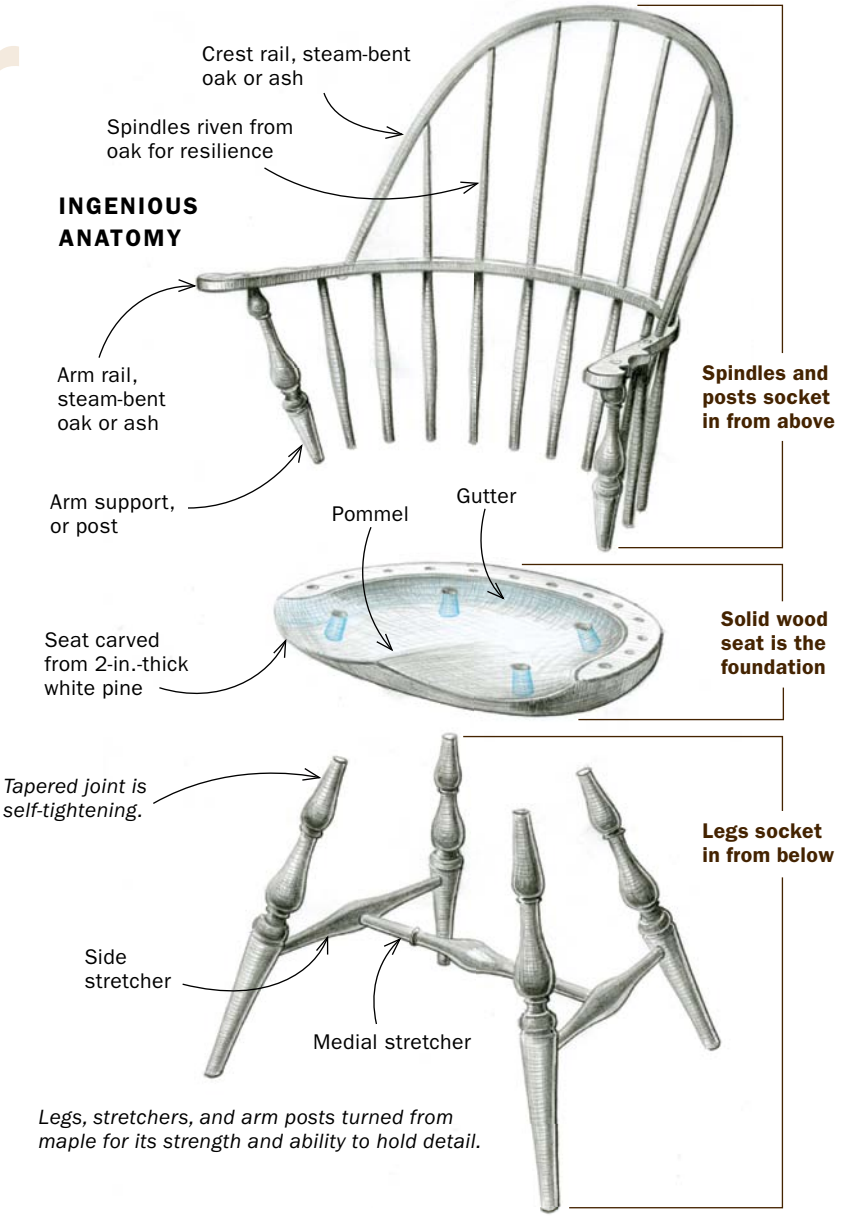
Photos, except where noted: Jonathan Binzen; this page: Doug Thompson

Windsor

Pretty and powerful

Combining lightness with strength and utility with visual punch, the Windsor became America's chair soon after arriving from England in the 1730s.

INGENIOUS ANATOMY



Legs, stretchers, and arm posts turned from maple for its strength and ability to hold detail.

Gallery of Windsors

Makers applied the principles of the Windsor style to a wide range of forms throughout the colonies. All these chairs, adapted from traditional designs, were made by Buchanan.

SACK-BACK (ABOVE)

With their looping steam-bent crest rail, sack-back Windsors were made in great quantities in Philadelphia and grew hugely popular in the late 18th century.

COMB-BACK

Among the earliest Windsor designs brought across from England, the comb-back has spindles that pass through a steam-bent arm rail.

FAN-BACK

A variation on the comb-back, the fan-back dispensed with the arm rail and added turned posts on either side of its spray of back spindles.

CONTINUOUS-ARM

An American invention, the continuous arm chair used a single steam-bent strip to form the crest rail and both arms. It was made in great numbers in New York City.

Photos on these two pages, except where noted: Doug Thompson

made them perfect for producing a superior Windsor chair. Parts could be small yet strong, opening up a door to graceful design.

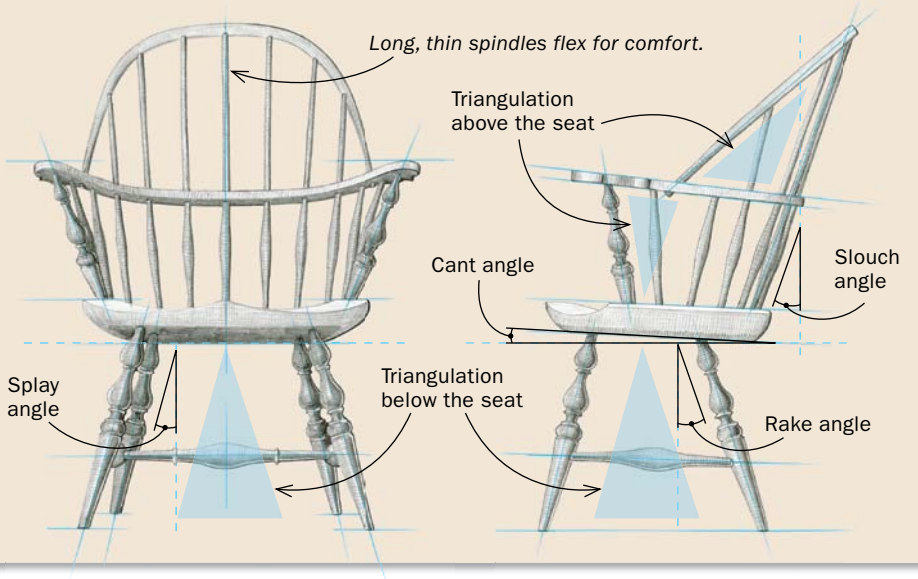
Like my 18th-century predecessors, who had the forests and the know-how to mate the best wood to any function, I choose different species of wood for different parts of the Windsor chair.

Softwood for the seats—White pine and tulip poplar were the main choices for 18th-century Windsor seats. I prefer pine, but the soft green heartwood of tulip poplar (as opposed to the hard white sapwood) is also fine. And I've had success carving seats from butternut, basswood, buckeye, and others.

You need a 2-in.-thick plank so it can be carved 1 in. deep for comfort. Carving a seat that deep with hand tools can be tough, but using a wood like Eastern white pine enables you to carve it fast and have fun doing it. White pine also makes for a light chair, a real benefit since chairs are the only pieces of furniture that are moved regularly.

Windsor engineering

Despite their light weight, Windsors are incredibly strong, thanks to clever engineering. Below the seat, triangulation provides resistance to racking; above the seat, it counteracts backward momentum. Rake, splay, slouch, and cant angles differ by style of chair and by use. Dining and desk chairs are more upright, living room chairs less so. For a detailed look at these angles, go to FineWoodworking.com/extras.



Strong stock for the turnings—Very different qualities are required for the turned parts of a Windsor—the stretchers, legs, and arm supports. Here you need strength, but you also need close grain so you can achieve sharp, crisp turnings. A ring-porous hardwood like oak would suffice in the first category but would fail in the second. Maple reigns supreme here, especially my favorite species, sugar (or hard) maple. It is enormously strong, holds a very crisp edge, and can be found in logs big enough to cleave, making it unsurpassed for Windsor turnings. If you are unfortunate enough to live outside the range of hard maple, there are alternatives that will squeak by. I would try red maple, followed by cherry, birch, and beech. For simpler designs, such as bamboo or double-bobbin turnings, you could even use one of the ring-porous hardwoods, like oak.

Bendable woods for spindles and crest rails—The spindles and bent parts of the Windsor demand a species that rives excellently. A rive is a controlled split, and the Windsor's spindles and backs must be split from straight stock down to very accurate dimensions.

This wood must also rank high in tensile strength, and it must be flexible and steam-bendable. Any of the ring-porous hardwoods

CONTINUOUS-ARM SETTEE

A wide variety of Windsor styles were traditionally made in settee versions.

COMB-BACK ROCKER

18th-century Windsors were not made as rocking chairs, but in the late 19th century, as the popularity of Windsors faded, some were retrofitted with rockers.

RODBACK, OR BIRDCAGE

By about 1800, new flat-topped Windsors appeared. On these chairs the baluster turnings were often replaced with far simpler bamboo-style turnings.

BIRDCAGE BARSTOOL

Bright paint colors and contrasting accents flourished along with the birdcage at the start of the 19th century.

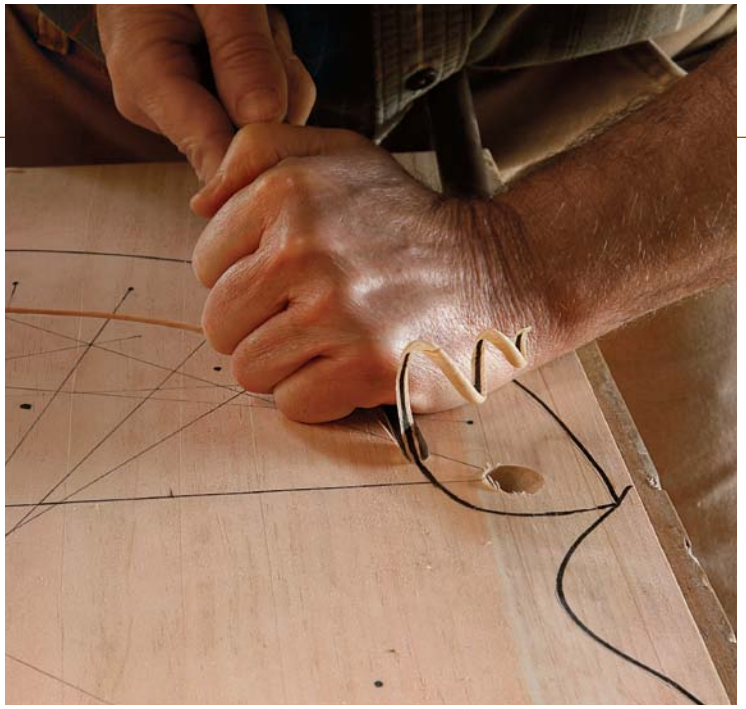
Photo of settee: Dan Robinson; drawings: John Tetreault

Windsor

Crafting a chair

IT STARTS AT THE SEAT

Drilling into the foundation. *The hefty seat blank is the backbone of the chair, anchoring deeply socketed legs from below and spindles from above. Buchanan hand-drills each hole with help from a bevel gauge.*



Fine work at first. *Before beginning the heavy work of excavating the seat blank, Buchanan uses a light touch with a small gouge to create the decorative rain gutter that will define the edge of the seat.*

Dig deep with an adze. *A short-handled adze makes quick work of coarse stock removal (left). Buchanan uses a scorp (above) to refine the surfaces left by the adze. For a light, strong seat blank that's also soft enough to carve easily, pine is the perfect choice.*

will do well here—oak, hickory, or ash. My favorite wood for long spindles and bends is white oak. A good piece of white oak properly prepared and steamed will give close to 100% successful bends, no strap needed. For gentle bends, and for shorter spindles, which need less resilience, I won't hesitate to substitute red oak.

Why paint?

Putting all these different woods together created stark contrasts in color, texture, and grain pattern, so colonial makers painted their Windsors to unify them. But nothing shows up a poor design like paint; with no fancy burl to distract the eye, the pressure was on to get the lines and balance right. The same holds true today.

In the 18th century, most Windsors were finished with a mixture of verdigris (copper acetate), lead white, and oil or varnish. Such paint was durable and weather resistant, but it wasn't colorfast,

Is noise necessary? *The bandsaw is one of only two stationary machines in Buchanan's chair shop. He relies on it for cutting out seat blanks, but regrets that it put his bowsaw into retirement.*

A very large hand tool. *In a shop nearly devoid of power tools, Buchanan does much of his best work at the lathe—"which is kind of a hand tool," he says, "since you hold and control the cutter by hand."*

so it turned very dark. Like most contemporary makers, I use milk paint on my chairs. It's typically made from natural pigment, clay, lime, and nonfat milk. Its thin appearance and pleasant colors work well with the chair.

A library of Windsor designs

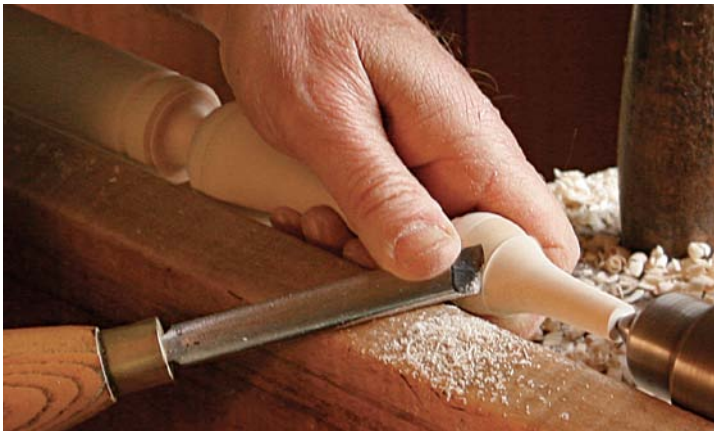
In fan-backs, loop-backs, sack-backs, comb-backs, balloon-backs, continuous-arms, rod-backs, triple-backs, and more, chairmakers from region to region competed in creating their own styles. And the Oriental influence in design at the turn of the 18th century—seen in Chippendale's furniture—stirred things further, bringing the advent of the double rod back, or bird cage, with simulated bamboo turnings and paint for highlights, to replace the voluptuous baluster turnings, knuckles, ears, and pommels of previous chairs. Some view these chairs as a degradation of the style; I view them as simply another evolution of it, and a graceful one at that.

Colonial-era Windsors were wonderful chairs, but contemporary makers shouldn't assume they can't be improved upon. Makers in the 18th century borrowed constantly from other makers, adapting more graceful lines or more pleasing seats to their own use. Their chairs continued to evolve as they mimicked and improved on each other's designs. As makers 200 years later, we have the distinct advantage of looking at hundreds of versions of, say, loop-backs. Why make a replica of a chair that can be improved?

Windsors gone and back again

With the advent of factories such as Hitchcock Chair in the early 19th century, Windsors faded. Sturdy, indestructible low-back versions persisted in bars, but the fine, delicate chairs of the late 18th century disappeared into back rooms and barns to be used as stepladders.

Then in the early 20th century, a minister with a penchant for furniture, Wallace Nutting, helped repopularize the chair, publishing an influential book on the topic and making Windsor



Hard maple is hard to beat. *For strong parts that hold crisp turned edges, hard maple is perhaps the best wood available.*

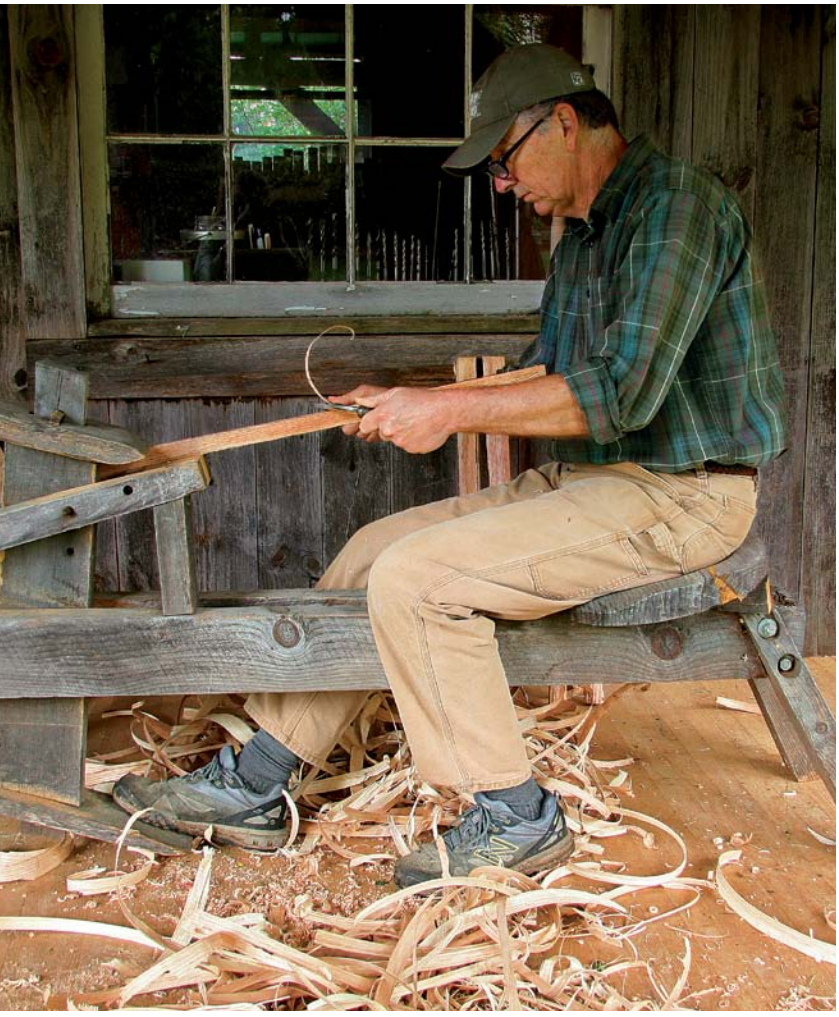
Tapered sockets are self-tightening. *Buchanan twists a reamer into a pre-drilled hole to create the deep angled mortises for the tapered leg tenons.*

Crafting a chair continued

SPINDLES, ARM RAILS, AND CREST RAILS

Whack! *White oak logs split green are Buchanan's choice for the riven parts of the chair—the spindles, arm rails, and crest rails—which require resilience and bendability.*

A rive is a controlled split. *Buchanan uses a froe to coax a billet of green wood into splitting just the way he wants. The spindles and rails need the continuous grain produced by riving for strength under bending stress.*



Inside, outside, up, and down. *Building a Windsor involves a delightful variety of tasks and skills. One of the most enduringly pleasurable, Buchanan says, is shaping spindles and rails on a shaving horse.*

reproductions. Stripped of their paint and varnished, Windsors once again graced American homes. With the rise in popularity of early American furniture in the 1950s, thousands of bland factory versions of fan-back Windsors were made in hard rock maple. My parents bought a set in 1952, the year I was born, and still use them as their dining chairs.

About the same time my parents were buying their reproduction Windsors, antique collectors were starting to pay attention to the real thing. And when I started making Windsors in the early 1980s, you couldn't open a home magazine without seeing antique Windsors. The increased demand, coupled with the fact that surviving 18th-century chairs were limited in number, fueled the market for well-made contemporary Windsors.

Everything has a beginning and an end, but the demand for handmade Windsors remains strong. This is good for me and other makers, for Windsors offer a wonderful way to earn a living. □

Curtis Buchanan's shop is behind the house he built in downtown Jonesborough, Tenn. He sells full plans for some of his chairs and posts videos explaining how to build them on his website, curtisbuchananchairmaker.com.

Steam power for continuous curves. *Straight-grained white oak, riven green and fresh out of the steambox, can be bent to compound curves without a bending strap.*

Pop in the spindles. *With the undercarriage already glued up, Buchanan dry-fits the arm supports and side spindles before drilling the arm rail for the long spindles.*

Unifying colors. *Applying a coat of paint unifies a chair made of dissimilar woods—pine, oak, and maple—chosen for their various physical properties.*

A Windsor workshop

The shop is open. *The small chair shop Buchanan built behind his house in Jonesborough, Tenn., attracts a steady stream of friends, former students, and neighbors (like Mara), who stop by to watch and talk.*

It was the tools and techniques that brought me to greenwood chairmaking, not the finished product, and it's the tools and techniques that keep me there. After 30 years building chairs, I still look forward to getting down to the shop in the morning. My goal is to enjoy every part of the day. I want to savor shop time just as I do breakfast with my wife, Marilyn, or my nap after lunch.

A greenwood chair shop lends itself to this lifestyle. No loud machinery, no dust, no sheet goods. Splitting logs and shaping parts with a drawknife dictate the pace. I've whittled thousands of spindles, yet I still enjoy sitting on the shaving horse listening to a sharp drawknife cutting through freshly cleaved oak.

Instead of battening the windows and doors to keep in the racket, then strapping on eye, ear, and breathing protection, I sit with the doors and windows open and listen while I work. I can hear my town in the background: the courthouse clock, the train whistle, kids playing, a serenading wren. The pungent smell of green white oak fills the shop—or white pine if I'm carving a seat. It's a visitor-friendly shop. Work can always stop for a chat. Time is more than money, and as long as I make "enough" that's all that counts.

Working from the log provides a never-ending source of wonder and surprise. From selection at the log yard to splitting open the log with hammers, wedges, and gluts, it's an enjoyable, rich, and always rewarding experience. There are times when I open a log and find I've bought expensive firewood, and other times when I think I must have just purchased the most perfect log nature made.

The lathe and bandsaw are my only concessions to stationary power tools. In the lathe's defense, it does have roots that go back 4,000 years—the only new wrinkle is the power source. And it is the only stationary power tool where you hold and control the cutter, making it in essence a hand tool.

The bandsaw is another story. I worked without one for 10 years and got along just fine. When I bought a '60s vintage 14-in. Delta it was to cut maple and oak billets to length. But it quickly replaced my bowsaw for cutting out seats, something I've never forgiven it for. The lesson I learned was this: Watch what you introduce to your sacred workspace. We've made peace now, me and the bandsaw. It helps me with the grunt work and I let it saw a little pine now and then.

Making one chair at a time, I go from shaving horse to lathe to carving to assembly to finishing, all in a few days. And then I get to start over again. ***—C.B.***