

WORKING WOOD BY HAND

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MAGAZINE



Jennie Alexander

Changing Ways
of Making Chairs
from Trees



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ON THE COVER

16 Jennie Alexander

Find a compendium of chairmaking devices & jigs from the new edition of *Make a Chair from a Tree*

FEATURES

04 The Krenov Planes

Learn how students at The Krenov School first have to make a plane

26 Period Journigan

James Journigan shows how routers waste time for making mouldings

32 One Vintage Toolbox

Rex Krueger finds an old tool chest

38 The Revived Eggbeater

Intrigued by many old tools, Ethan Sincox restores a Millers Fall drill

42 Recycling Timber

Robin Gates not only reports on his experiences resurrecting timber, but finds other woodworkers harvesting discarded or fallen wood

50 Shooting a Board

Rather than having to rebuild often, Scott Wynn shows how to make a long-lasting shooting board

63 Mak at the Back

Charles Mak joins us with four good tips on using cramps

REGULARS

08 Voices

41 How to Subscribe

34 Honed

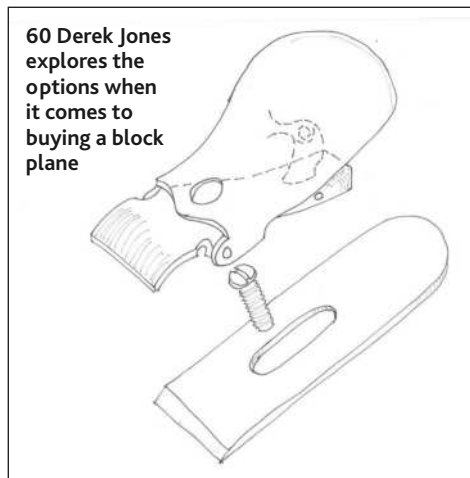
26 Reviews

53 The Edge

62 Last Post



45 Robin Gates discovers the work of Wycliffe Stutchbury in his article about recycling wood



60 Derek Jones explores the options when it comes to buying a block plane



54 Discover the intriguing story of carpenter Ryan Thompson becoming a planemaker

I remember so well reading *Make a Chair from a Tree* in a tent on Guernsey in 1994. I was there with my friend Mark Corke, on one of *Good Woodworking* magazine's Corke on Call adventures. We were there to offer a reader some advice on the making of a Windsor chair with a yew bow. We set him up with a steamer and former, but couldn't get the yew to bend well enough. It was just too dry and too thick. Bit like us.

On John Brown's advice I'd bought that pioneering book, and was stunned by its content. Now we have an extract from Jennie Alexander's edition, demonstrating how things can change with time, and we hope you will find the section on devices and jigs invaluable.

Whether she was a great patriot or not, it is with a little nod in Jennie's direction that we have made this issue of *Quercus* a USA Special. We have chosen more writers, more books and more products than normal from the United States. The current explosion of interest for chairmaking is due to many things, but *Make a Chair from a Tree* and John Brown's *Welsh Stick Chairs* have both been contributing factors, and both have been elevated by Lost Art Press, so we say thank you to them, and by association, thank you to America. *Nick Gibbs, Editor*

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Practical Wooden Planes

Laura Mays of The Krenov School describes the thrill of making and using wooden planes

I will never forget the day, it must have been the first Friday of my first week of my first year at what was then the College of the Redwoods in August 2001, just about exactly 20 years ago. I got the first shavings from my first wooden plane, and the thrill of it beat anything I had yet done in woodworking. I had completed a two-year course in Ireland in woodworking (Furniture Design and Manufacture at GMIT Letterfrack in Co. Galway), during which I fell head over heels for it all: the material, the process, the problem-solving, the engagement from start to finish of a project. We had used metal planes: a block plane, a No.4 smoother and a No.6 jack plane. But there was something about having made this wooden plane myself, albeit with a great deal of careful instruction, that made it an amazingly moving experience.

I think it was then that I started to have an inkling that woodworking is not an external and finite body of knowledge that I had to work and work at getting access to, but it is an on-going engagement between me and the material, via a tool, and the feedback loop of learning is endless. And I think it was the first time I really understood, at a visceral level, that a plane is a jig for holding a blade. That is by no means to downgrade the importance of the plane, because the quality of the jig matters enormously. Making the plane myself led to my understanding that something ostensibly and conceptually simple could also be subtle and complex; that nuances matter and I was in control of them. Of course, there are the larger concerns: the angle at which the blade is held, the overall size, how the wedge and pin hold the blade against the ramp. And then the subtleties: if the sole is not entirely flat where should the hollows be?; how firmly does the blade need to be held against the ramp? Over the years I've gradually learnt the range of issues that are involved from making a plane that works, to one that works well, to one that works spectacularly well.

I returned to The Krenov School in 2011, this time as the program director and lead instructor, and since then I have witnessed and assisted in the making of about 550 planes. Each first year student makes three in their first few weeks: a smoothing plane, a shooting plane (narrower, for edges), and a coopering plane (for concave surfaces). We use blades made by



PHOTO BY PERMISSION OF THE KRENOV FOUNDATION

James Krenov demonstrating the use of a wooden plane at a workshop in Mendocino, late 1970s. Notice how low his hands are on the plane

Ron Hock (Hock Tools), who not coincidentally is also in Fort Bragg, the same little northern Californian town as the School, redwoods to the east of us, the vastness of the Pacific to the west. His blade business started with supplying to the school and now ships around the world. The blades are chunky and short, 3/16in (4.5mm) thick and 31/2in or 41/2in (90-115mm) long. Their thickness makes them less prone to chatter, and also easier to sharpen, with more mass to absorb heat from the grinding wheel, and greater distance from the heel to toe of the bevel for honing.

Students making planes

The very first project the students do at the School is to make their own smoothing plane, just as I had done two decades ago. By the end of the week most of them are having the same or similar set of emotions that I had had. The piles of shavings grow beside each bench. The benchroom resounds with the tap-tapping of plane adjustment: to adjust laterally one taps the side of the blade with a smallish hammer, to retract, one taps the back of

PHOTO: LAURA MAYS



Three small coopering planes, made in cocobolo and with brass pins



PHOTO: LAURA MAYS

Planes in the workshop of Paul Reiber, Caspar, California. Paul was in the first class of the College of the Redwoods Fine Woodworking programme in 1981-82, and went on to become an expert carver as well as a furniture-maker



A yew plane taking
madrone shavings

the plane, to advance the blade, tap the blade itself, then tap the wedge a couple of times to tighten. It is simple but also subtle. How hard to tap? Listen! Look! Try it! Adjust! How far out should the blade protrude from the sole? Try it! Adjust!

After a few years of teaching I started to think about why this is the very first exercise we ask the students to undertake. James Krenov set up the curriculum in 1981 when the School was established (then, and until 2016, under the auspices of the College of the Redwoods), and we follow it with remarkably few changes to this day. The exercise sets up various expectations about delayed gratification, an inevitable part of craft in general and fine woodworking in particular, or to turn that around, to learn how to get pleasure from small steps, not rushing, but carefully and seriously taking those steps, while also trying to understand how it feeds into the big picture. By making a tool first rather than making an object, the student starts to learn that getting your tools in order is fundamental to the craft, and that all the parts add up: time spent early on pays dividends later.

Blaming their tools

Of course a tool is an object too, but it is understood to be intermediary, towards the making of something else. It may be a cliché to say that a bad craftsman blames their tools; the truth is that the quality of the tools does matter, so learning how to make your tools better makes the work better, and in fact making a tool is part of making the work. We use a block plane to make the shooting plane, so first we spend some time tuning up the block plane, going back and back into the set of processes and parts that all feed into the greater whole. The student uses some basic machinery to make the plane: a bandsaw to rip off the cheeks and then cut the front and rear ramps; a router to rout the slot for the cap screw in the ramp; a drill press or horizontal drilling machine to make holes for the pin in the cheeks, a table saw to cut the tenons on the ends of the pin. Then the tenons are rounded with first chisels, then a knife or files. It's a mini-exploration of a range of machines, processes and hand tools. Add

to this the fact that the student is making, for the cost of a blade and barely a board foot of maple, a plane that is the equivalent of a \$300 metal plane. Along with the delayed gratification of the making process is the patience required to learn to use it. Plug and play it is not. It takes quite a bit of practice and attention to set the plane, to advance and retract the blade with taps of a 4 oz hammer, to set the wedge, to fuss with it. So the very first lesson becomes about taking a series of steps, patience, and separating yourself from the predetermined world of commerce, finding out that there is a way of making something yourself that is cheaper and better and more versatile!

After getting the plane to take shavings, from thick crunchy ones to cotton woolly fuzzy ones that float on the breeze, one can shape the plane to suit one's own hands and planing style. Now here come some aesthetic decisions, and a chance to use the bandsaw to cut some fancy curves, if one chooses to go that route, or a spokeshave for smooth curves, or a file, or chisels, whatever works for you. One tends to use wooden planes with the hands lower to it than on a conventional metal plane almost hugging it. Metal planes usually have two handles, one fore and one aft, indicating where and how it should be held, but on a wooden plane one can play around, making it prescriptive or nonprescriptive, as fancy or as plain as one wishes. The main criterion is that it should feel nice to plane with it, that it fits you and your hands, so that you're as happy as can be in your work.

The final lesson is the one that comes with all wooden objects and has massive implications for how it is used: wood moves. All. The. Time. It is constantly bringing its moisture content into alignment with the relative humidity of its environment, expanding and contracting as it does so, giving an impression of being alive, which is one of its joys. Technically this is called being hygroscopic. Therefore wooden planes move also depending on their environment and the species from which they're made, requiring periodic flattening off a reference surface, simply a piece of granite with some sandpaper. And so the final lesson, how flat should the sole be, as flat as can be?



The curved surfaces of *Wholeness II* (left) a coopered wing-back madrone chair, were shaped with small, wooden planes. Chen Lekach (above), a student from Israel, at The Krenov School, sweeps up his first day's shavings in August 2013. More planes (right) at Paul Reiber's workshop



As flat as my eyes can perceive? As flat as works? Perfect flatness, perfection of any kind, is a target always just out of range, and even if one were to get there, the ever-changing nature of wood would make it very temporary, so the question is where to be on the road towards it. And even though perfect flatness is the theoretical goal, in practice one accepts hollows at certain places - just behind the mouth opening for example, perhaps in the centre of the 'infeed' area.

When the basic premise is understood - holding a blade securely against a ramp at a certain angle - it becomes possible to explore other versions of this way of making planes. Students try different timbers, harder, heavier. They sometimes make successful scraping planes with a blade held vertically or even leaning forward 5°, and a much larger mouth opening. The third plane they make at The Krenov School is a coopering plane, which is curved across its length and used to plane shallow concave surfaces. Convex surfaces can be planed to a series of finer and finer facets with a flat plane. They explore slightly higher angles, and lower ones. They flip the blade over to try bevel-up planes without chip breakers, with varying degrees of success. They develop aesthetic preferences for shapes.

A love for planing

I love planing. I love planing so much I could just keep planing and planing, but bluntness usually intervenes. I love planing so that I like and use woods that plane well and tend to dislike those that don't plane as well. In practice this corresponds with temperate hardwoods and "exotic" hardwoods, which also means that I can use the woods that are local to where I've lived - the British Isles and North America, oak and ash and cherry and elm, madrone and redwood. And I love the planes that planes make, to the point where it could almost be the defining characteristic of my work. I love the way light reflects differently from adjacent facets, the way the grain of the wood shows up differently depending on the cut, the crispness of an edge, the way faceting can slightly distort an otherwise rectilinear object. With planing there is a clarity

and crispness that is exceedingly difficult, mostly impossible, to achieve with sanding. I use a mix of metal and wooden planes, keeping at least one wooden plane at its very sharpest to be the last thing to cut the surface, combined with the slight burnishing from the wooden sole.

I have also made a series of curved bottom, coopering planes, much smaller and with a tighter radius than the one I made as a student. I have used these planes to make large coopered surfaces, including the wraparound sides and back of *Wholeness I and II* chairs.

Krenov called the plane the "cabinetmaker's violin." I have often turned that phrase around in my mind, wondering why a violin, why a musical instrument at all. He eschewed the word designing in the making process of his pieces, preferring the word composing, thereby deliberately avoiding the established structures for the making of pieces of furniture and placing them within another form, another art. An art form moreover that uses a different senses evokes a different response than one we more usually associate with a piece of woodworking. I think he was, by simply using the word violin in relation to a plane, setting up a set of connections that is poetically layered and associative: we "tune" our planes by listening to the tap of the wedge, and we listen for the soft swish of the shaving being cut; we gradually find our own voice through the careful exploration and gradual understanding of a tool; we create something beautiful that has the potential to communicate with others through the senses.

Further reading

David Finck. Making and Mastering Wood Planes. *Lost Art Press*, 2019.

James Krenov. The Impractical Cabinetmaker. *Van Nostrand Reinhold*, 1979.

James Krenov. 'Making music with a plane.' Article in *Fine Woodworking magazine*. Issue #126, October 1997. *Taunton Press*
David Welter. 'Wooden planes.' Article in *Fine Woodworking magazine*. Issue #126, October 1997. *Taunton Press*



A detail of *Wholeness II* chair (above), made from madrone and shaped with small wooden planes. Madrone being worked with a yew 'Krenov' plane (below & right)



Praise for the Unsung Lime

Prepare yourself for Spring-time, and follow *Dave Watson's* advice on harvesting & using lime bark



Out of all of our native trees I believe that the Small Leaved Lime is one of our unsung heroes. To many foresters its value is limited to the paper industry. The wood however is very light and ideal for learning to carve with and the flowers make a refreshing tea. It is the bark however that stands out and has been valued for thousands of years.

The famous mummy Otzi was found with his clothing and equipment intact after over 5,000 years. Amongst his clothing and equipment lime bast along with nettle were regularly used where strong cord was required. His shoes and his grass cloak were bound together with it, his hunting bow string was made from it as well as his knife sheath.

I have been working with lime bark for well over 20 years and I still find there is more to learn about its quite unique qualities. Containers, baskets, chair tops and rope can be fashioned from the bast layers and as with all traditional crafts, a little extra know-how makes the difference. Each year I select a few coppiced lime poles which are as free as possible from side branches until higher up. By the end of May/early June the sap is at its highest

and as a result the bast comes away cleaner than at other times of the year. My main uses of the bast are to create containers as well as rope/cordage. On both these accounts getting the complete bark is important.

For containers it allows for a smoother inside and for the rope the finest layers are the ones nearest the wood. The coiled up lengths for rope need soaking and if stripped in June I sink them into a good-sized pond for around 5-6 weeks.

You will notice in the picture that the darker layers are more honeycombed. These are the layers that grew nearest the outer bark, the smoother layers nearest the wood which are better for finer cordage.

Strips of bark can easily be cut for the use of basketry or chair tops. For both of these I would suggest you take off the outer bark before removing the

bast from the poles. A drawknife would be appropriate for this. Care needs to be taken to keep a consistent thickness. Once you have removed the outer bark you can measure the thickness you require. It is worth bearing in mind that on many poles the bast thickness differs quite considerably and is thicker on the side it received most light during its growth.

One of the interesting things to note about Lime bast is that you can rive it into thinner pieces. However because one side will have wood bast and the other bark bast they behave differently, which matters a great deal when making small baskets. The more honeycombed bark bast layers will shrink and become loose after drying and so I either use the full bast or the wood bast for baskets and I would suggest the same will apply for seating. The one issue I have noticed with the lime bast strips which differ from elm is that it is stiffer and more susceptible to creasing so care needs to be taken when going around tight angles.



Dave Watson runs Woodland Survival Crafts, based in Derbyshire, England. Visit woodlandsurvivalcrafts.com.

Dave Watson, UK



Baskets as well as chair seats can be made with lime bark, as can rope



Coils of rotted lime bark (above) and Jamie with his lime bark basket (below)



Rays of holm oak

Short of hardwoods, *Tim Germain* goes even harder



Holm oak has remarkable grain and colour

I have been a designer-maker for 25 years and know that it is difficult to source good, local, sustainable hardwoods you can trust. A few years ago, I was pushed on to the regular timber market and soon found that I only ever got vague replies when I quizzed sellers on the source of the timber and its sustainability. So, I approached my mate James at the Greenways Countryside Project. He has a mobile sawmill and access to parks, but he hardly ever had any English oak or sweet chestnut for my outdoor benches. "It's a shame," he said, "you can't use holm oak 'cos that's a right pest and we've got that coming out of our ears!"

So I started investigating. The first book was the *Ladybird Book of Trees* (1963 edition), which stated: "The timber is very dense, hard and heavy. It is sometimes used for cabinetmaking." On Google I discovered that tree surgeons hate holm oak, but learnt that the Romans brought it to the UK to make axles and cartwheels. I rang round most of the nation's timber suppliers only to be told that holm oak is not "commercially available". I then checked my Wood Database app on my phone (wood-database.com/holm-oak/). The users' comments on the website lists common uses as: "Tools, cabinetry, furniture, wine barrels, turned objects and firewood."

We English have been caught by surprise by the spread of this non-native plant. Its presence was cemented by the Victorians who took a shine to its evergreen beauty and planted it in abundance in parks and gardens. Thanks to climate warming, holm oak is now considered common in much of the south of the UK. I started using holm oak about five years ago when I replaced a rotten garden table-top with holm oak planks from one of our local parks. It has weathered down to the nice silver-grey you would expect, and it is still sound with no sign of rot at all. More recently, I used it to make a set of drawer fronts and a top for a chest of drawers that resides in the centrally-heated bedroom. A year on, the holm oak appears to have settled in nicely with no ill effects and my customer is delighted. The only quibble is that it blunts your tools because it's so hard, but then so does bog oak.

I think it must be the most beautiful 'English' timber I have ever seen, if you like a bit of bling. The medullary rays are like a rope compared to the string-like one in English oak. The effect on a quarter-sawn plank is startling, rivalling some of the most heavily-figured exotic hardwoods you might care to mention, but holm oak is local, guilt-free and, best of all, cheap.

Tim Germain has been a furniture designer-maker for 25 years. Visit germain.co.uk or benchproject.co.uk for details.

Sitting Still

How do we solve chair problems asks *Galen Cranz*

CREDIT KNOLL INC



The Wassily Chair was inspired by the tubular steel frame of designer Marcel Breuer's bicycle

With a back, seat, legs, and arms, the chair is anthropomorphic; we like chairs because they remind us of ourselves. Architects in particular have an enduring fascination for this ubiquitous item. From Charles Eames to Shigeru Ban, they have created a succession of models, as sculptural statements and as solutions to design problems. It's easy to see why. A chair doesn't take up as much space as a building, yet it is three-dimensional, unlike paper drawings, so it's a useful full-scale problem for studios in architecture and design schools. It combines issues of comfort, utility, style, price, and craftsmanship, so it miniaturises many of the problems of architectural design. Construction experts can simply focus on joinery, while those interested in symbolism can look for ways to express artistic values. When the assignment is full scale, the body can test it for sturdiness and comfort. It is a complex problem and therefore a challenge. As Ludwig Mies van der Rohe said, "A chair is a very difficult object. A skyscraper is almost easier. That is why Chippendale is famous."

In my book *The Chair: Rethinking Culture, Body, and Design*, I identify a slew of such difficulties: Should the seat pan be flat, canted backward to stop forward slide, or tipped forward to protect the lumbar spine from rounding incorrectly? How high should the chair be to serve both tall and short people? Is a chair back necessary if most people bend forward over their work and their food? Should there be lumbar support or a hollow for the pelvis? Decisions made about any one of these factors affect the others. Over time, 'adjustability' became the way out of the contradictions posed in trying to create a chair for everyone. The epitome of this reasoning may well be Niels Diffrient's Freedom Chair and Don Chadwick and Bill Stumpf's Aeron Chair, which developed synchronised adjustability. Yet assumptions about the

CREDIT KNOLL INC



Working in moulded plywood and plastic resin, designer Eero Saarinen vowed with Tulip to address the 'slum of legs' under the dining table

right-angle seated posture remained mostly unchallenged. At the Aspen Design Conference in 2001, I explained to Diffrient why he could no longer squat: It was the atrophy and tightness in his pelvis, legs, and spine; produced by a lifetime of sitting in chairs.

Limitations of lumbar support

The designers at the main office-furniture manufacturers – Steelcase, Haworth, Knoll – knew as early as 1999 about the limitations of lumbar support, which artificially creates an external fix to an internal problem. But they claimed that 'the market' wasn't ready for the idea of a chair without a back, or other forms of autonomous seating, which would include sit stand options. I suspect that architects are drawn to the challenge of solving these problems much the way that generations of mathematicians might keep circling around an equation that has never been solved. There has been so much social status associated with chairs over the course of their historical development that we have not been able to conceptualise the problem objectively. Most furniture historians believe the pharaohs of Egypt and kings of the Fertile Crescent were the earliest adopters, but evidence from Neolithic villages indicate that chairs are 5,000 years older than we thought. Small kiln-fired figures of women seated on chairs have been discovered in the graves of women in villages that date back to 7,500 BC in the former Yugoslavia.

We may never know the precise origin of a seat raised off the ground for one person, but we can assume that it denoted some kind of role differentiation: chairs were for pharaohs, kings, and perhaps wise crones. Ancient Greek civilisation developed the



The Myrtle chair, by the Irish artist Aleana Egan (2014)

clismos chair for domestic use, and Comans kept both the throne and the clismos but relied much more on the pallet for resting and entertaining while reclining horizontally. Banquets were held in a special U-shaped structure called a triclinium. Guests lay semi-reclined on large bolsters with their heads toward the centre of the U, where food and wine were served. The Last Supper was held in a triclinium, where Lazarus lay in the bosom of Jesus, but as our culture changed, artists have mostly represented the Last Supper as a chair and table banquet.

Thrones and bushels

Furniture was less prominent during the so-called Dark Ages. The chair was reinvented as a throne for kings, while commoners sat on overturned bushels or knelt directly on the ground. Storage boxes used in feudal halls, pushed up against walls, inspired the design of some chairs. The church choir stall included a flip seat on a hinge that could be used to sit at a right angle or to perch with the thighs halfway between sitting and standing. In Renaissance Italy, three-legged chairs were created for the Strozzi Palace in Florence.

Until the 18th Century, chairs remained relatively rare, high status items. All that changed with industrialisation. Spring coil upholstery was invented, and upholstery also became cheap compared with hand-loomed textiles. Enter the overstuffed armchair of the 19th Century. Further, society evolved to include clerical work, and the office chair was born. In the 20th Century, designers experimented with materials and new industrial processes. Marcel Breuer took advantage of the strength of steel tubing used to make bicycles to design the Cesca chair (named after his daughter Francesca) and the Wassily (named after his painter friend Wassily Kandinsky). Mies Van der Rohe designed

a steel X to support a seat and back of leather upholstery. Eero Saarinen moulded plywood and plastic resin, and others eventually experimented with inflatable plastics. In no case was the human body the focus of these experiments. Many architects find them 'beautiful' sculpturally, but I can no longer see them that way, since I see the discomfort that is built into them.

The fundamental problem in chair design is the right angle seated posture. No amount of ergonomic tinkering will solve the problem. The right-angle paradigm itself needs to be challenged. My book described the biomechanical problems associated with chair sitting, but recently, epidemiological studies have determined that there are even more serious metabolic problems: sedentary behavior is associated with premature death from heart attack, stroke, and cancer. This is what people mean when they say "Sitting is the new smoking."

Sitting still means muscles are not firing, which means the pancreas does not get the message to produce lipase, the enzyme needed by the liver to digest fats. So now people "sit up and take notice." Actually, they're looking for more ways to stand up, and many furniture manufacturers are designing sit-stand options. Steelcase is even producing treadmill workstations, something unheard of 10 years ago. Since 2012 Focal Upright of Rhode Island has an active workstation that involves perching (halfway between sitting and standing) on a tractor-shaped seat that pivots on a single rod while the legs and feet are active as the other two parts of a tripod. The perch position is biomechanically better for the spine than the classic right-angle seated posture, and it may also be much better metabolically because active leg muscles signal the pancreas to produce lipase.

A Scottish study in 2006 got a lot of attention when it seemed to show that (contrary to what we were all told as children) slumping might be more beneficial than sitting up straight. However, slumping is completely different than slouching, or rounding forward. The new research showed that strains on the lumbar vertebrae and discs were reduced when slouching back, with pelvis and legs thrust forward. This posture produces the open angle between thigh and trunk that takes pressure off spinal vertebrae. Rounding forward over our work is a completely different story. This compresses the front edge of the vertebrae, pressing discs backwards and setting us up for slipped discs and a host of other problems in the neck, shoulders, pelvis, and legs. But whether slumping or collapsed, sitting still remains a problem. Yes, I intend that double meaning: sitting still is still a problem. Is it possible to design a chair that is not deadly? Probably not. It is more important to design for a series of postures. Every posture carries with it some physiological strain. We need to move that strain through the body in the course of a day or an hour.

How do we design for movement? Think of offices as parcourses. In my seminar on body-conscious design, I ask my students to design rooms that support the body in five or six different postures. What if each room had a place to stand, another to perch, another for lounge position, sitting cross-legged, kneeling, and lying down?

The Finns were the first people to uncouple the computer keyboard from the screen and hold the keyboard on their laps while in a lounge chair with their feet up. Today a bicyclist might lock his bike in place in front of a tall table that holds his computer so that he can spin in place while working.

The next step is to think about the relationships among these postures, so as to create a kind of choreography of work. Among other things, this means that no person should do exactly the same task for eight hours a day. As Peter Opsvik, the Norwegian designer of the Tripp Trapp, Balans, and Capsico chairs, has put it, succinctly: "The best posture is the next posture."

Galen Cranz is author of The Chair and Professor Emerita of Architecture at the University of California, Berkely.

Prize Boxes

Barbara Jones is inspired by Derek Jones' toolbox

Quercus Magazine has announced a challenge for woodworkers 20 years of age and younger. The winner will be awarded a true hand-tool classic, a Lie-Nielsen LN102 Bronze Block Plane, which will forever carry the title Young Woodworker of the Year 2022. And there's some cash to be won as well. The challenge is to make a box for the Lie-Nielsen hand plane. Nick Gibbs (Editor of QM), asked me if I could make a box as an example. I didn't think twice about it. I had just read Derek Jones's article about Japanese toolboxes and this was the perfect opportunity for me to build one. I've always dreaded through tenons, even though I knew how to make them, at least in theory. I suggested I would make dovetail joints or those big nailed finger joints that you sometimes see in Japanese toolboxes.

Nick encouraged me to try through tenons as in Derek's article. I remember only too well bungee jumping for the first time: "One, two, three..." and a gentle but firm tap on my back sent me on my way. A fraction of a second later I was at point of no return (filled with regret). Same happened with the box. That wouldn't have happened without a gentle but firm tap on the back from Nick.

In my experience the best way to ensure a tight fit is to use the masking tape trick. I have several colours for different woods. A pencil line always has thickness and on dark wood it doesn't show much better than a scribe line made with a marking knife. The edge between wood and masking tape is absolute.

Cutting the tenons

I started cutting the tenons. The size of the tenons isn't critical but it's important to cut them straight and square. I used a marking gauge to scribe the thickness of the tenons on masking tape on the mortise board. Then I laid the tenon board on the mortise board and made cuts along the tenons. I removed the cut-outs and chopped the waste while being careful not to touch the masking tape. To my surprise the tenons fit the mortises just fine. Derek sometimes secures the joints with diagonal wedges and I love that idea. I used boxwood to create a bit of contrast. As a side note boxwood is very difficult to source but if you need any, Google Huw Crompton. He'll hook you up.

The bottom board expands and contracts while the box doesn't. Ship lap joints allow movement. The same thing happens with the lid. I made it in late summer so it will shrink a bit in winter. In worst case the lid will become too tight at some point and it needs to be planed a hair narrower. It remains to be seen. I treated the box carefully with boiled linseed oil. Oil won't stop movement but it will slow it down. I chose, cut and planed the lid battens so that the wedge would disappear when closed. Another option would be to use a contrasting wood or a taller wedge to accentuate it. There's plenty of design ideas on the Internet. The wedge will shrink eventually and need to be pushed further. If or when that happens a good soak in boiled linseed oil should help.

I made a removable leather lined bottom with a recess for the plane. The idea is that the recess holds the plane vertically and a leather pad on the lid will push it down. I didn't have the plane at hand so I'm hoping the plane will fit in the box.

I can't wait to see the challenge entries and what design ideas the young woodworkers come up with.



For contrast the through tenons are held with boxwood wedges. To source boxwood visit Huw Crompton (via Google) who was featured in QM02. The author started by cutting the tenons (right), having been pushed off a proverbial cliff to give cutting through tenons a go. Marking up on masking tape (below) is much more accurate than relying on the thick line of a pencil, especially on dark wood



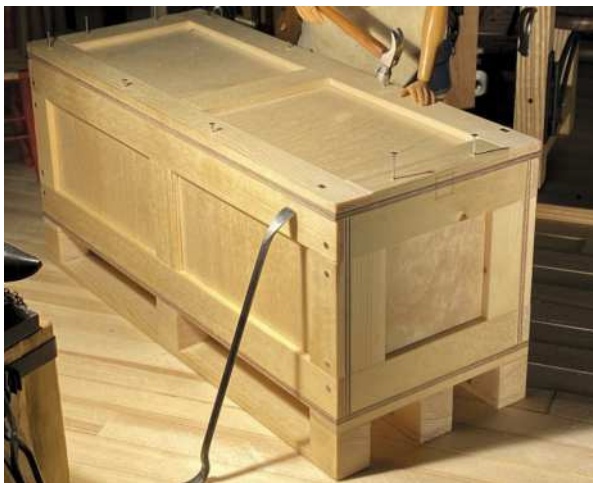
To learn more about Barbara's work visit @barbiewoodshop.



Chopping out of the waste from the through mortises (left). "I love my new wooden plane," the author says.



Boxwood wedges are tapped in diagonally (above right) for strength and contrast. A shoulder plane cleaned up the rebates neatly (above), and the box has been crated up for delivery to *Quercus* HQ (below). The box is lined with leather to take the prize Lie-Nielsen block plane (right). The box comes in a custom-made, bullet-proof shipping crate (below), with a hand-forged crowbar



Vice Versa

In search of better grip, *Robin Gates* turns the tables on a table vice



Using a spokeshave with a Parry & Bott table vice mounted as designed (left) and an early experiment (above) with the Rabone Chesterman vice at 90°

I am normally careful to exclude the bright green vice at the corner of my bench from photos or at least remove it's eye-catching moving jaw. The fact is I've mounted it wrong-way-up and worried, unnecessarily as it turns out, that to anyone scrolling through Instagram it would appear slightly ridiculous; as though I'd misunderstood the instructions. Then as I was on the point of posting a clip of planing using my conventionally-mounted 6in Rabone Chesterman vice I noticed my little green friend standing on its ear in the background. Well it seemed highly unlikely that anyone would notice and I went ahead and posted the video.

Clearly I hadn't reckoned on a virtual visit from discerning hand-tool woodworker Darren Stevens (@darrenkstevens) in Alabama who, undistracted by the subject of the post (recycling wood) locked onto my inverted vice like a laser beam. "I see the vise at the end of the bench, he commented", is mounted differently from the vise you're using. I bet it's handy."

So here we are. My unorthodox taste in vice mountings has been outed, and I must

say I am relieved that the first to comment on my seeming blunder didn't do so with a row of laughing faces but with kindly curiosity. Then, as perhaps only an artist could, Dan Pelonis (@dpelonis) described the vice as "Disorienting but sweet". Nicely put. Now I'm wondering if this bench with the unsettling vice should be standing in the Tate Modern, subtly commenting on lost skills.

Lost on eBay

The reality is more down to earth: £20 lost on eBay, or so it seemed. I'd bought the Parry & Bott table vice for pairing with another I already had, joining the two by wooden linings to make a 'poor-man's' Moxon vice, which I eventually made using Record Junior vices instead. The P&B vice has jaws 11/2in deeper than the Record Junior and would have endowed the home-made Moxon with more holding power. But while mocking up this arrangement the clamp of the eBay vice broke clean off as it took up the pressure; a faulty casting, I think. As luck would have it, I found the Record Juniors locally at modest cost, the

Moxon vice turned out well and the broken P&B was put aside.

The idea for mounting a vice sideways hadn't come completely out of the blue, as I'd earlier experimented with the Rabone Chesterman turned at 90°. Reclaimed wood often requires resawing while clamped vertically and I figured that if the vice were to be mounted with the length of its jaws aligned with the length of timber the arrangement would be more rigid. When the theory was borne out in practice with a spell resawing old oak I was tempted to leave that vice as it was, but it looked weird and I reverted to convention.

By the light of a different day however, with the broken P&B vice gathering dust and lengths of reclaimed wood waiting to be resawn, I reconsidered the matter. Anything which eased the arduous process of resawing by hand was worth a shot.

Having removed the remnants of the broken clamp with hacksaw and file I offered up the rear casting to the empty corner of the bench and found that, after chiselling to accommodate the web between base and jaw it would fit snugly



Turned at 90°, the vice exerts grip on wood held vertically (above). The fixed jaw lining meets the edge of the bench (below) and overlaps the leg



against the leg. The jaws of a table vice are pre-drilled for attaching wood linings (highly recommended) and the base plate is also pre-drilled for screws enabling more solid fixing to a bench surface.

Flush with the bench

By making the rear jaw lining to fit flush with the edge of the bench and also overlap the front of the leg the two sets of holes could be used to mount the vice beneath the bench. I made the lining of the moving jaw longer so that it would close flush with the bench surface. With its main screw and guide bars vertically aligned it's effectively a very small leg vice. I made the linings deep and bored them for the screw and guides to pass through to maximise the clamping area.

Besides holding wood more securely for ripping and resawing my 'Vice Versa' has proved useful while cross-cutting and also when planing wood gripped in tandem with its more conventional cousin. Which leads me to ask, is there anything 'disorienting but sweet' about your own shed or workshop that you'd like to share?

Makepeace Talks

The Southern Fellowship of Woodworkers invites the designer to lunch

Members of the Southern Fellowship of Woodworkers (SFWW, in England) not only enjoyed a fine lunch at their annual jamboree but also a talk given by the renowned furniture designer, John Makepeace. The path he took to become a furniture-maker in the first place, and then the risks he took in buying Parnham House in Dorset to set up the School for Craftsmen in Wood was inspiring. It is hard to believe quite so much can be achieved by one man, though John is honest in appreciating the skills of his team, including Robert Ingham as the first College Principal and Clive Baines, who makes John's furniture now, reinforcing the recognition that he is primarily a designer. They brought with them their three-legged, bleached oak Miro chair (top, right), which John told me afterwards is designed that way to support the spine with space for the buttocks.

John Makepeace was also an educator and inspiration, with his new book, *Beyond Parnham*, illustrating the impact the school had on an annual cohort of students. To that end the 180pp hardback acts as a directory of 100 graduating designer-makers, itself setting a chronology of his influence upon fine furniture from 1977 onwards. There are only a few copies of the book left we're told, and I recommend you buy one while they last, otherwise you won't be inspired by the likes of chairs by Tom Kealy (right), Jake Phipps (below left) and Isabelle Moore (below right).

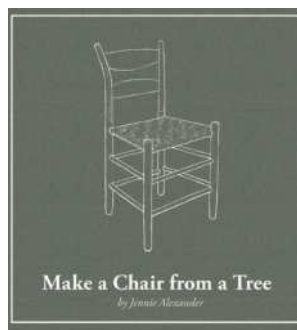
Nick Gibbs

Beyond Parnham costs £45 + p&p from johnmakepeacefurniture.com



The Devices of Change

In a transformation of *Make a Chair from a Tree*, Jennie Alexander highlights her jigs and devices



At a celebration of Jennie Alexander's life in 2018 was the chair (left) used in *Make a Chair from a Tree*. Chairs are marked with Jennie's stamp (below)



My name is Jennie Alexander. Until 2007, my name was John Alexander. I thank all those who have been supportive and kind. Yes indeed, people change, times change, wood continues to be wonderful!

I am a chairmaker. I made my first post-and-rung chair in the late 1960s. My interest in chairs began much earlier when my mother, Dorothy Parker Lowe, gave me her two-slat post-and-rung chair. In 1978, I wrote *Make a Chair from a Tree: An Introduction to Working Greenwood*, a practical book about post-and-rung chairmaking to document what I had learned up to that time. I call this book *Macfat* for short. In 1994, in a second edition I added an afterword showing some updated methods. The book has been a part of the growing interest in the practice of traditional crafts with hand tools and green wood. It led me to coin the word 'greenwoodworking'.

By 1999, both editions of the book were out of print. With Anatol Polillo, a good friend and craftsman, I made a two-hour video of *Make a Chair from a Tree*. It is

now available from Lost Art Press. The two books, the video, extensive teaching and research have led me to the wonderful world of kind and sharing traditional craftsmen and scholars. I have learned more than I have taught. Thanks to them I have grown both as a person and chairmaker.

This third edition continues the process. The basic approach – working greenwood with simple hand tools, understanding how greenwood changes shape as it dries and taking advantage of those changes to construct a strong, long-lasting two-slat post-and-rung chair – remains the same.

Greenwoodworking is a traditional way of working a piece of wood that (initially) contains substantial moisture content by riving (splitting) and shaving. Saws are used only to cut across long fibres, not with them. In some greenwoodworking crafts not only is greenwood used in the initial stages, the shrinking and swelling characteristics of wood are employed and sometimes artfully avoided. That is true here. To make this chair, we need only hand-tools. Tool expense is modest.

I use the phrase 'post-and-rung chair' as

a useful generic term for a crowded group of vernacular chairs: country, kitchen, ladderback, Shaker, Appalachian, Delaware Valley and so on. The basic post-and-rung two-slat chair described here has but four parts: four vertical posts, 12 horizontal rungs, two slats and fiber seating.

I became a greenwoodworker by accident. My mother was a single parent. I helped around the house. She told Jerry at Boulevard Hardware that she would pay for any tools or supplies I needed. Jerry – or his sidekick, Miss Erma – gave me a Stanley loose-leaf notebook full of descriptions on the use of Stanley hand tools. I attended the Baltimore Polytechnic Institute, where excellent shop classes were mandatory. At Mother's suggestion I framed and finished my apartment in our basement. She then sent me to St. John's College in Annapolis, Maryland, where I repaired furniture in the abandoned woodshop. Through all this, first and last was the post-and-rung chair that Mother gave me! I grew up with it. It inherited me.

First chairs

Before I made my first chair, I was a young lawyer reading books on woodworking and chairmaking and had collected some tools. My neighbour, Jack Goembel, let me use his shop. Later, another woodworking friend decided to stop woodworking to become a mail carrier and sold me his lathe, band saw and drill press. To buy them I had to take out our first-ever loan. It was at the insistence of my lovely wife, Joyce.

I joined the Early American Industries Association (EAIA) and met Charles Hummel, then curator of collections at the Winterthur Museum in Wilmington, Delaware. He brought out the best in me. Somehow, I wound up with a funny workbench, working seriously on furniture and visiting museum basements with Hummel to see broken pieces of furniture.

Hummel's landmark book *With Hammer in Hand* (1968) catalogues an extensive collection of woodworking tools, equipment, account books and furnishings produced by three generations of the Dominy family of East Hampton, Long Island, circa 1760-1840. Hummel once told me, "We have a Dominy chair that when the humidity is down you can disassemble." We did so, and from this type of research I learned much of what I know how old chairs were made. One



Alexander enjoyed exploring shapes and colours, exemplified by this a late, colourful iteration with a Shaker tape seat

example is a notch or groove turned in each tenon – the same notch I’ve seen in Southern chairs as well; hundreds of years and miles apart. I was fascinated and became an expert on busted chair parts.

Joyce and I made several trips to the Sabbathday Lake Shaker Community, where we met Sister Mildred. Our first visit was to see the chairs. Sister Mildred said, “You know, it’s interesting. People think we’re chairs.” We visited a couple more times to see the chairs and also learn about the Shakers. Soon, I decided that I wanted to build a Shaker one-slat dining chair and managed it with a few tools and a lathe.

What is a Jennie Chair?

The chair in this book emerged from the study of the joinery in those busted chairs, Shaker chairs, Appalachian ladderbacks and the human body. The chair is especially comfortable because the back posts are bent and have a characteristic flat shaved on the front face, giving rise to the name ‘mule ear’ for chairs like this. The rear posts also flare outward, enhancing the curve of the back slats for more comfort. The position of the lower slat supports the sitter’s lumbar spine.

At first, my slat backs were too heavy with hickory and big parts. I asked, can we lighten it up? Can we make it like a kitchen chair? Because that is a masterpiece. The mule ear is important to get the roundness of the post out of the way, and it looks good. I also asked: How many rungs and where are they? The wonderful kitchen chair I own is missing one rung compared to mine.

Many, or even most, traditional post-and-rung chairs have just two rear rungs: the seat rung and the bottom rung. I want every rung to share the shock. It’s like grass in the wind. I came up with this idea early in the process.

The chair is attractive, strong and comfortable. It looks like a traditional post-and-rung chair. However, its construction differs. When put in service, a post-and-rung side chair suffers its greatest stress in the fore and aft direction when sat upon, and when it is leaned back upon. Disregarding custom, we anticipate and respect these powerful destructive racking forces. Unlike ‘traditional’ chairs, the side frames are constructed first.

Then their rung tenons are firmly interlocked in place by the front and rear rung tenons. I have never seen nor heard of another post-and-rung chair so constructed. A cautionary note to myself: In a vernacular craft of long history, such as stick-chair making, it is all too easy to claim invention. With time we learn that there is little new under the sun.

I suggest you make your first chair ‘by



Detail of the slats/posts (above). The flat, or relief, shaved on the rear post makes it easier to bend and more comfortable for the sitter than a fully-rounded post. Big and heavy, this shaving horse (below) made made using a ‘found’ narrow plank was influenced by an old photo of a British shaving horse



the book’ then go on from there. These features make a Jennie Chair. This book contains all that you need to know about making post-and-rung chairs from shaved greenwood. My goal is to provide enough information for woodworkers of all levels to be able to make a chair from a tree.

But in ways this text is a bit pedantic, cautionary and repetitive. I envision my reader as a married homemaker in Cincinnati, Ohio, who plans to learn chairmaking in one-half of the family’s two-car garage. I wrote this for her. So please bear with us.

Jennie Alexander, 1930-2018

It fell off the truck, honest.

Years and years ago, a rough-sawn plank, 2in x 6in x 14ft long, fell off the back of a truck. Honest. I was driving the van to my shop with my apprentice, Geli Courpas. The truck in front of us hit the big bump right across from the Mount Royal Tavern, and the plank skittered across the street directly in front of us. I swerved, braked and honked. The anonymous (thank Heavens) truck sped off. The plank blocked the street. Good citizens, we cleared the hazard. Red oak! Goody, goody gumdrop! Give it a home.

“Geli, open the back door... jam it up

Dimensions and details of Jennie Alexander's
example made in *Make a Chair from a Tree*

Rung length: Later chairs (including the one in the latest edition of the book) use 17in (front) and 14in rungs (side and back) to allow for 1in-wide fibre seating with no overlap

Early chairs used 16⁵/₈in and 13³/₈in rungs: rungs could be a bit longer to accommodate larger sitters better

Post dimensions: At largest, 1³/₈in; and smaller 1¹/₄in or 1³/₄in (maybe even 1¹/₈in) is ok

Slats and slat mortises: At largest ³/₄in; slightly thinner, say ⁵/₈in or ¹/₂in is ok

Side frames assembled first, then front & back frames, so the front and back rungs intersect to lock the side rungs

15in between inside tips

³/₄in x 3⁷/₈in x 18in

³/₄in x 3¹/₈in x 15¹/₂in

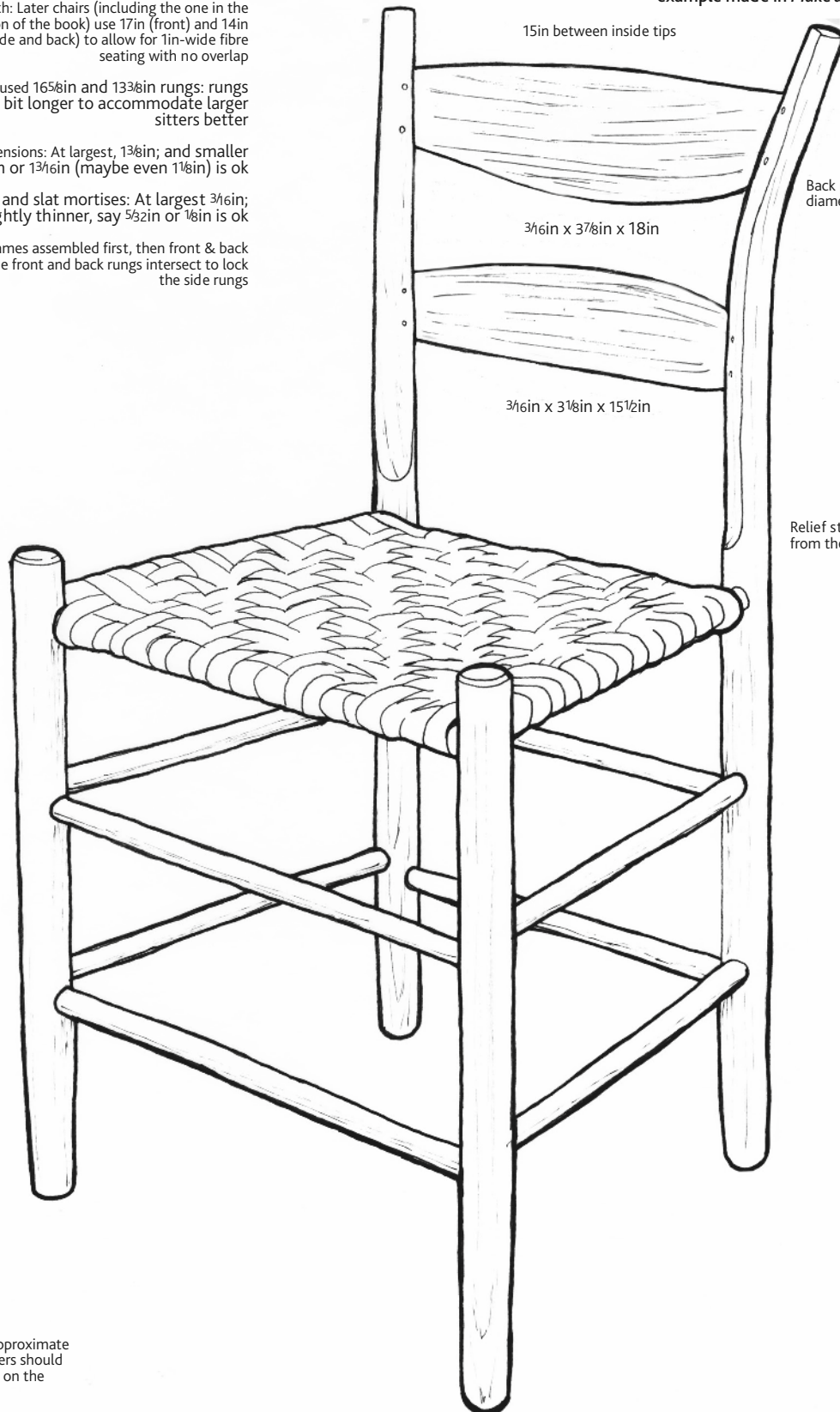
Back posts: 1³/₈in diameter x 34in

Relief starts 19in from the floor

Front posts: 1³/₈in diameter x 19in

Tapers start about 1in above the bottom rung

Measurements are approximate and will vary; beginners should make their first chair on the heavier side



under the front seat ... get back there ... sit on it!" The plank hung out. We hit each and every bump. Geli rode it to the shop. I now had a long and heavy board for a better shaving horse, but not wide enough to sit on. What to do?

There I was with the narrow board that tried to run me down. Not wide enough to sit on. I thought of the lathe's parallel ways. There's nothing new under the sun.

The shaving horse I made from a found plank is influenced by the English version that uses two uprights running outside the bench, connected above by a cross beam and below by a foot treadle. These uprights pivot on a pin/bolt/wooden peg that pierces them and the bench. Push the treadle away with your feet and the cross beam. At the same time *Macfat* was published, Drew Langsner's book *Country Woodcraft* was first published. It featured a shaving horse based on Swiss examples that Drew used as a cooper's apprentice. It features a single upright (a 'dumbhead') that comes up through the middle of the bench and has a large head to grip the workpiece.

My idea of using two planks up on edge for the bench has gotten around. Peter Galbert and others have substituted a dumbhead for the English uprights. Others have reduced it to pony size. My long stock and mind were both clunky. I prefer a relatively heavy shaving horse.

We want the cross beam close to and vertically above the stock. Ideally, slight pressure from your feet results in a tight grip. If the cross beam is too far off the workpiece, you need to extend your legs too far to be comfortable. So, adjustability is paramount. The peg and hole adjuster on the old shaving horse is tedious with only limited adjustability.

Some time later, I built a new shaving horse that has everything I need. Ease of adjustment, easy to build. It's still the English style, with the two uprights connected by a cross beam and foot treadle. The major difference is the solid bench for its base, and the instantly adjustable work surface.

Riving Brakes

There are many kinds of riving brakes. In essence, these are wooden contraptions that prop stock in place so you can use the froe without the stock shifting around. A simple riving brake is made from the felled tree itself. Select a crotch high in the tree. The trunk or limb must be heavy enough to stand a pounding – let's say 6in to 8in in diameter. Cut out a piece that looks like an overgrown upper case 'Y' with a narrow, gradual opening. Elevate the open end of the brake by criss-crossing two smaller sticks. You have made the simplest of holding devices. Jam the bolt of wood into



The natural crotch-based riving brake (above, Pic.1) and one built using dimensional lumber (right, Pic.2)



the crotch so that one end rests on the ground and is supported vertically. Then split the bolt with club and froe.

Riving brake at the shop

You can make a simple and effective brake from dimensional lumber. Bury the ends of two 4in x 4in posts 6ft apart securely into the ground and have them project 3ft above the ground. Bolt an 8ft-long 2in x 6in across the outer faces of each post, with its top edge flush with the tops of the posts. On the working side of the brake, bolt a 2in x 3in to the faces of the two posts. At one end, its top edge lines up with the bottom of the upper cross piece. This 2in x 3in drops down as it crosses to the other post – it is about 7 1/2in lower at the other end.

I especially like that this brake props the stock horizontally, making it easier to lever the froe downward. White oak, locust or Osage-orange hold up well outdoors. You

might consider a wood preservative for the portion underground.

Related to my brake, the traditional tripod brake is an option. It's quite similar to the grounded brake above, but here the cross pieces are attached to the two front legs of a large tripod. Peter Follansbee uses one regularly; his has a horizontal piece about waist-high, and a slanting piece above this rather than below like mine. There are many ways to adapt and tinker with these brakes; they all produce similar results – a place to trap stock while working with the froe.

The double bench clamp

With some inspiration from Mike Siemsen's adaptation of the Nicholson Bench (*The Naked Woodworker* video from Lost Art Press), particularly the inventive uses of Pony light-duty bar clamps, I came up with a double-bench screw (Pic.4), or 'Moxon vise', that's useful for chairmaking. Adding

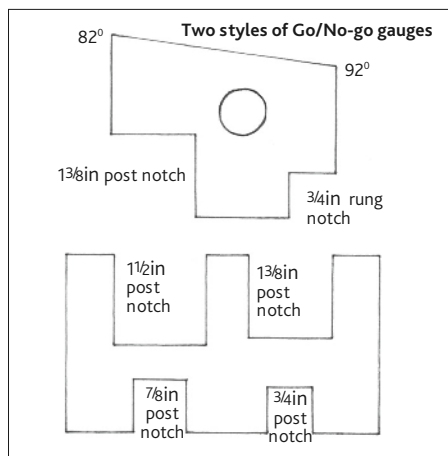


Peter Follansbee uses a riving brake (above, Pic.3) as a large tripod with cross pieces bolted to the front legs. The 'double bench clamp' (below, Pic.4)) used by Mike Siemsen is similar to the one described here, but with 24 $\frac{1}{8}$ in (instead of 10in) between the posts so that it can accommodate casework



This version (above, Pic.5) of the shaving horse gave me everything I needed. Most important of all is the ease of adjustment. Two notches do it all in this jig (below, Pic.6), the 'notched wooden bench hook', for cutting stock to length





a broad, long foot beneath the double bench clamp's back jaw provides an out-of-the-way spot for holdfasts to fasten the clamp to the benchtop. This allows many alternative set-ups. The metal clamps extend behind the back jaw. Shortening the bars helps.

Consider the advantages. Simple, constructed with few tools. No tap, no die, no mortising for nuts etc. Discard the clamps' fixed heads. Or, order parts from Jorgensen without them. Bore 5/8 in holes for the flat bars in both jaws. Rivet or screw the front bar in place. If riveting, rivet all the way down.

There is no metal or anything else (except you and a tool) in front of or above the jaws and workpiece. The bar's leading end is safely fixed inside the front jaw. The smooth-finished rounded-edged metal bars lie beneath the workpiece. If necessary, the workpiece can be set upon a strip of 1/8 in Masonite. The metal clamp is behind the rear jaw. My benchtop metal concerns are relieved.

It is easy to operate. Simultaneously release both sliding bar clutches and slip both heads to the back bar. A few simultaneous fingertip rotations of screw handles and you are done.

For a longer, heavier double bench clamp capable of dovetailing, the Jorgensen 3700 medium duty bar clamp with 3/4 in bars is suggested. For jaw friction, non-slip tape used on slippery floor surfaces backed with adhesive can be used in place of animal skins.

Inexpensive to a fault, the chairmaker's version costs less than \$30 for a pair of Jorgensen 3700 light bar clamps with 5/8 in bars. The home centre may save on shipping. Buy the parts from Jorgensen and delete the stationary heads. Add the cost of wood. The No.700 medium-duty bar clamps are a bit more. Some ugly duckling.

While lacking the warmth of traditional wooden threads, clamps perform as well and, in some respects, better. There are no projections in front of the front jaw. The



The dotter (above, Pic.7) is a companion to the chair stick. Hook the far end of the dotter over the chair post's foot. Then just bop it to impress the screws' points into the wood. All three mortise locations are struck at one

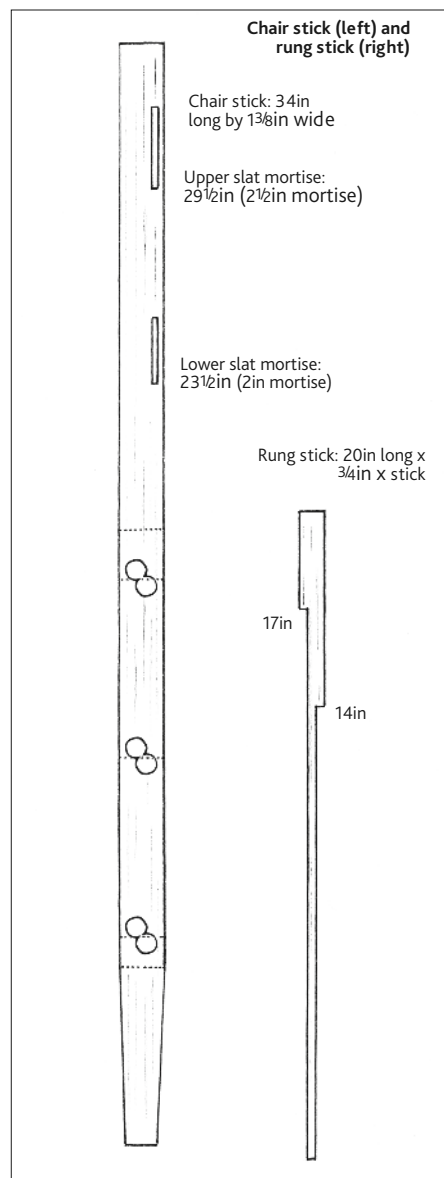


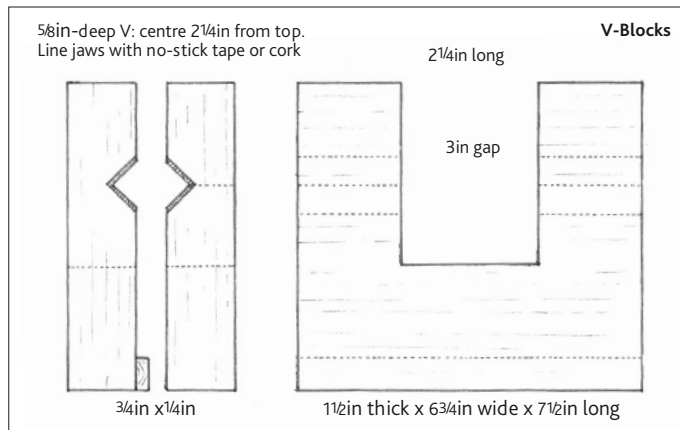
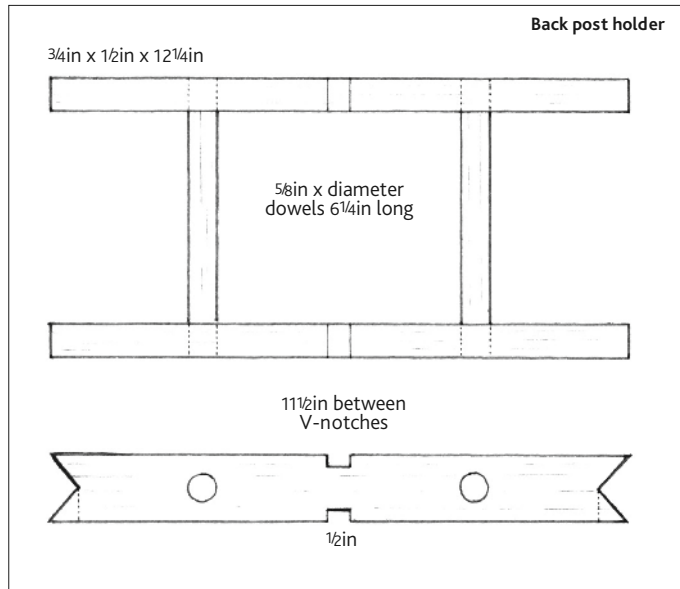
Go/No-Go gauges for shaving posts and rungs (above, Pic.8). The gauge on the far left has four notches: two for the posts, two for the rungs. The post notches are 1 1/2 in and 1 3/8 in. The rung notches are 7/8 in and 3/4 in. The deluxe model (red) has the 3/4 in and 1 3/8 in notches, 3/4 in hole to test rung tenons and the seat flare angles cut on the uninterrupted side. The closed notch on this one is just over the finished rung dimensions of 5/8 in; skip it, you don't need it. The holey gauge (centre) is Larry Barrett's rung-sizing gauge, with a series of graduated holes to test rung dimensions

device is quickly and easily adjusted and tightened. Bore and mortise horizontal 5/8 in slots in both double bench jaws that friction fit the bar's cross section. My bars are only 10 in apart. Insert the bars from behind through both jaws and flush with the front of the front jaw. Use copper rod to rivet them into the front jaw. The sliding heads are slid onto the back end of the bars with their heads facing the ends of the back jaw.

Notched wooden bench hook

A simple device (previous page, Pic.6) to hold stock while accurately cutting to length. The two octagonal rungs can be leftovers from chairmaking. They connect two pistol-grip-shaped strips, each with a tilted 90° notch in their upper edges. Squared stock sits corner-up in the





Adjusting the flare of the rear posts (Pic.9, above), which are held in the posts holder, which is in turn held by a double bench clamp. Note the vertical V-notch in the centre of the clamp's front jaw to hold posts vertical for layout). The V-blocks in use (below, Pic.10). Note that the back post is inserted so that all three mortises can be drilled without repositioning the workpiece



notches, easily allowing sight lines down two faces. The device is crucial when bone-dry rungs come out of the kiln, ready to be cut to exact length.

Chair and rung sticks

As you prepare to rive chair stock from your log, you will need two important layout tools – a chair stick that contains nearly all the dimensions needed for the front and back posts, and a rung stick that contains the dimensions for the rungs.

Use a ruler to lay out the dimensions for each chair stick, then put the ruler away.

These permanent chair-specific measuring sticks ensure consistency and accuracy as you proceed from log to finished posts and rungs. Make them using dry wood.

The chair stick is 34in long – the length of the back posts – and 13/8in wide – the diameter of the front and back posts. Carefully shave or plane a chamfer down one long side of the stick almost reaching the stick's back side. All marks are scribed with an awl across the face and extended down across the stick's chamfer. Scribe careful location lines, bore overlapping mortises and chop slat mortise locations. Scribe marks can be emphasised with graphite. For the rung stick, locate the short and long rung lengths on opposite sides of the stick. The overall length of the short rungs is 14in, the front rungs 17in. Both dimensions include the 1in tenons on each end of each rung. The overall length of the rung stick itself is 20in; the initial length of the front post. The front post remains at 20in until after the chair is completely assembled.

Go/No-Go gauge

I like to make the Go/No-Go gauge (Pic.8 previous page) for shaving posts and rungs from thick, outrageously coloured plastic. It's durable, as well as easy to find in a pile of shavings.

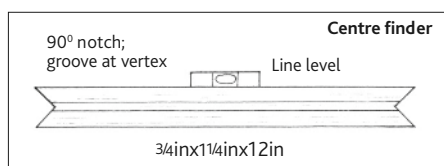
My first one had two open notches in it, one at 13/8in for sizing posts, and a 3/4in notch for rungs. I use a 3/4in hole for testing the octagonal rungs, with the uninterrupted side of the gauge angled to match the seat plan. This can be helpful when orienting posts for mortising. Larry Barrett came up with a gauge that has four notches; two each for shaving posts and rungs. An oversized notch at 11/2in and the final one of 13/8in, and, likewise, rung notches of 7/8in and 3/4in. These larger notches help you shave the parts close to size, then bring them down to their final dimension accurately.

V-blocks

V-blocks hold the chair posts for boring the mortises. Each block is a rectilinear U shape. They can be hinged at the bottom



The centre finder (above) and pencil combine to lay out the centreline for boring. If the points of the centre finder get in the way, simply trim them back a bit. The bench post bending form (below) and rope hold the steamed posts in the correct shape as they dry. The notched head is screwed to the body of the form



so a post can be inserted, and the blocks tightened in the double bench clamp. The V-blocks are sized to hold a post so that all three mortises can be bored without moving the post.

I was already a confirmed horizontal borer, but I secured the post with the simple three-peg-and-wedge holding system. Then somehow, I learned that Brian Boggs used this clever arrangement. In the second edition of this book they are called 'Brian Blocks'. (Later, when I expressed my gratitude, Brian, as usual, had moved on.) The V-blocks can be held in the workbench face vise or in the double bench clamp.

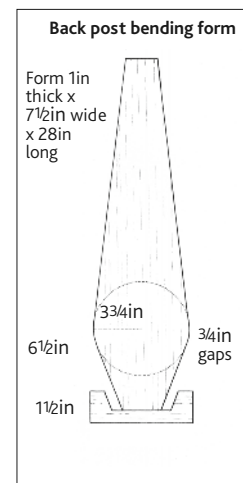
Back post holder

Use the back post holder (Pic.9) to secure the two back posts oriented as they will be in the completed chair. It helps visualise the symmetrical flare of the back posts and aids in finding the angles for boring mortises. It's a frame made of four pieces. The top and bottom flat pieces are two lengths of 3/4in x 2in stock, each 12in long. Saw 90° V-notches in each end. The distance between the interior tips of the V-notches should be 11 1/2in. Bore two 5/8in holes through these pieces so you can join them with a couple of leftover rungs running vertically between them.

Insert the two back posts in the holder's notches and wrap and knot three loops of twine around them. Tighten the twine with a square hardwood stick that locks in two square notches in the holder frame. The back posts can now be rotated to simulate their position in the assembled chair.

Dotter

The dotter is a companion to the chair



stick (Pic7, previous page). It accurately transfers the tangent lines for mortising to the chair posts. Straight-fibred dry hardwood and shortened drywall screws will do the job. Make it in the form of a notched stick, about 21in long, with an end you can hook over a chair post's foot. From this notch, carefully locate the three mortise tangent lines, based on the chair stick. Drill small holes and insert drywall screws so they just protrude through the stick. Hook the foot at the end of a piece of scrap, then tap the dotter to prick these locations. Then check the dots with your chair stick. Meet the dotter – simple, inexpensive, accurate, permanent and beloved. Take good care of it.

Centre finder

The centre finder is a simple fixture that guides a pencil along the chair post in order to mark a centreline for boring. It's easy to make but must be done very accurately. Dead-straight stock, about 1 1/4in x 12in long, with a centred groove



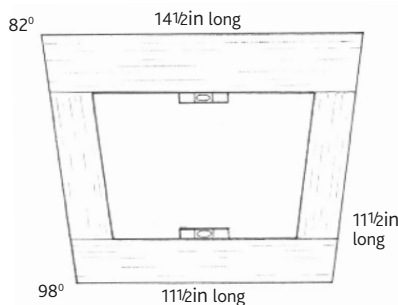
The seat plan in use. Like the centre finder, accuracy when making it is critical

running down one face for the pencil. Cut a 90° notch on at least one end – the groove must hit this notch right at its vertex. Both edges and the groove must be parallel to each other. Affix a line level halfway down the top edge. In use, a pencil slides in the groove until its point hits the chair post. Tilt the finder until the level reads true, then strike your line.

Seat plan

The seat plan is used to accurately orient the posts for boring mortises. It is proportionately smaller in size than the actual chair seat. Its smaller size allows it to snug up against the rungs in assembled frames. It incorporates the seat's crucial 82° and 98° interior angles and contains line levels inside and parallel to the long front and short rear edges. Its accuracy is crucial. Make one by cross-lapping straight 3/4in x 1 1/2in boards. All the stock must be carefully prepared so the edges are parallel. Line levels are permanently epoxied on the inside edges, parallel to

Seat plan



the front and back. First, tape line levels in place and check them in both directions before permanently epoxying them in place. Test them again after assembly. The two levels must agree.

Make a Chair from a Tree is a book reworked & revised by Jennie Alexander, Peter Follansbee & a team of woodworkers and is published by Lost Art Press.



Reviews

PRINT & DIGITAL

Woodland Lore

Recalling Ben Law's first fame, *Nick Gibbs* studies his latest book

In the UK, at least, Ben Law came to prominence when his round-wood home, Prickly Wood, was featured as an early episode of the C4 series, *Grand Designs*. It was a pivotal moment for TV and for timber-framed building, particularly Ben's innovative techniques. The construction used tall, straight larch thinnings that otherwise were likely to have been burnt, and he became a specialist at this new, old approach, writing *Roundwood Timber Framing* and *The Woodland House* as a result. But the dominant species surrounding the house (which Ben insulated with straw bales) is coppiced chestnut, a resource upon which he relies for his job as a woodland craftsman.

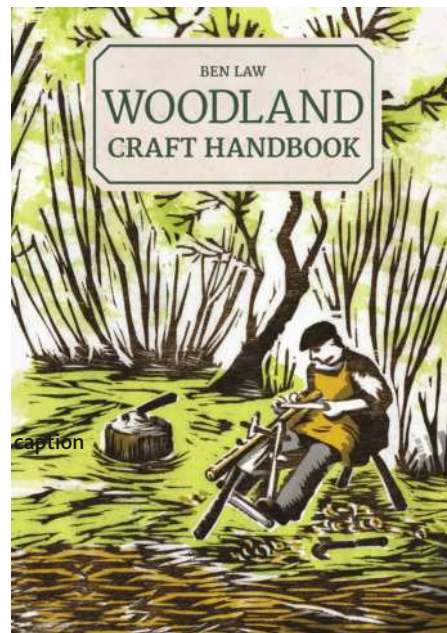
And so it is no surprise to learn that this prolific author has produced a run of books on woodland crafts, with two new ones fresh off the press now. *Woodlander* is perhaps most like his earliest, and perhaps most significant book, *The Woodland Way*, and goes into great detail about the managing of woodlands sustainably. Ownership of small woods has been a growing ambition in the UK for a decade or two, but the trend has been fuelled now by Covid and a survivalist mentality.

A handful of 'bibles' have served as manuals for new woodland owners, each too wordy and academic for most nascent

foresters. Ben's *Woodlander* is everything those manuals should have been and is exactly the resource I wish I'd had when I was editing *Smallwoods* magazine.

But that was then and this is now. *The Woodland Craft Handbook* is better suited to readers of *Quercus*, with projects made by hand alone. Though there are reference sections, including a chapter of greenwoodworking devices we'll have as an extract soon, plus directories of species, tools and fuel, what makes this A5 hardback so special are the projects, from making hurdles and gates, to carving a 'free-form' spoon or a ladle or a bowl. I like the look and prospect of making a bar stool, but I found the making of a cherry-picking basket the best. It was made for Ben and the book by *Quercus* friend Martin Hazell (@mr_the_creature), the instructions being the best I've ever seen for this complicated business. It is rare to find such a valuable balance of photographs and illustrations, and it is a lesson for us all. If only I could draw.

Perhaps because I am renovating a house with no garden hedges or fences, my other favourite projects are the hurdles and the woven panels which might improve privacy and protection. The chestnut post-and-rail fencing may last for decades, but you really need a chainsaw and skill as

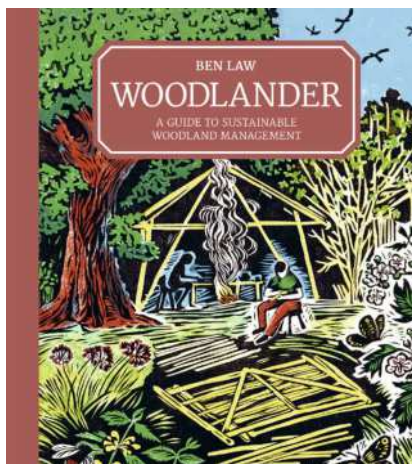
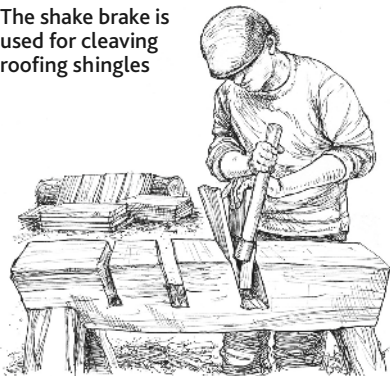


well as a good supply of sweet chestnut or some other resilient species. The wattle hurdle, Ben writes, dates back to Neolithic times, which is probably why you need so few tools but strong hands and a good eye.

Ancient crafts evolve a rare vocabulary, and you'll find the wattle hurdle a typical example, as to produce these lightweight sheep-holding panels first you have to insert the zales into a mould which is tied down with withies. Only then can you start riving with a billhook to produce the cleft weavers divided by a mid-section woven with pairs of riven hazel rods. Good luck. Despite the phraseology, Darren Hammerton, who has helped Ben making these hurdles, has inspired me to have a go. Now all I need do is buy a sharp billhook, find some hazel and chestnut, and have a go myself. I'll be planting some cherry trees, constructing a wooden curtain to keep out any potential scrumpers so I can fill the cherry-picking basket I've made from my hazel and willow.

Woodlander and the *Woodland Craft Handbook* are both written by Ben Law and published by the Guild of Master Craftsmen. Both are hardback, and about 160pp each. *Woodlander*, which costs £25, is nearly twice the size of the £12.99 *Woodland Craft Handbook*. Visit ben-law.co.uk to learn more about his life and work at Prickly Nut Wood in Sussex, England.

The shake brake is used for cleaving roofing shingles



The Everyday Minimalists

Reviewing two books that challenge the maxim Those Who Die with Most Tools Win

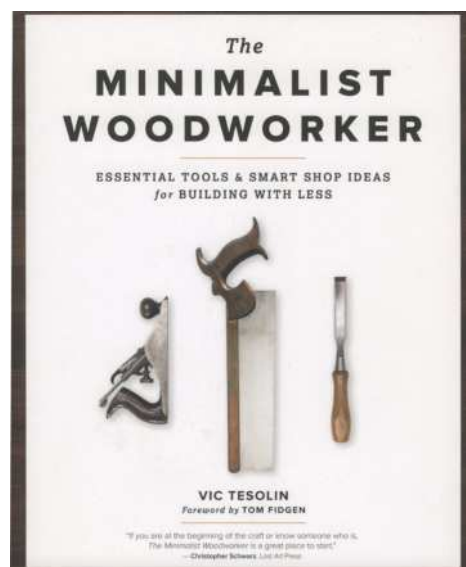
Please don't complain that we are reviewing Rex Krueger's digital and printed output in consecutive issues because he's a contributor, and cover star last issue. The arrival of his new book, *Everyday Woodworking*, (softback, 220pp) happens to coincide with the talk Vic Tesolin (who is Canadian, by the way) gave at the Southern Fellowship of Woodworkers' lunch in September. Vic wrote *The Minimalist Woodworker* in 2015, and then a compendium of *Projects for the Minimalist Woodworker* this year (both softback, with about 160pp. Rex's book is slightly smaller in size).

Though he doesn't actually broadcast a list, Vic is favourite to win the Toolkit Stakes when, not for many years we hope, the racers pass on to their posthumous workshops. Vic is inspiring for new woodworkers in showing how a small space, under the stairs or in the living room, can be home for even a well-equipped novice. Meanwhile Rex's readers need not worry that a workshop must be found, however small, since he writes that a beginner needs no more than 12 tools. It is a list like I have never seen before, and is refreshing for its austerity, while also recommending specific brands should you want to build a long-lasting kit. All you need, Rex says is: a hatchet (Fiskars 378501); a knife (Mora Sloyd Knife); sharpening stones (a Norton Crystolon Combination India); the square (Swanson 7in model); a tape measure (Stanley Powerlock 16ft); and an awl (Stanley 69-122). Along with those six, Rex recommends: a contractor's saw (DeWalt 20in Standard Panel Saw); a fine saw for hardwoods (Gyokuchō 9 1/2in Ryoba); Jorgensen 12in Heavy Duty Bar Clamp; an 8in hand screw (made again by Jorgensen); a drill of any type; and sandpaper of no particular make.

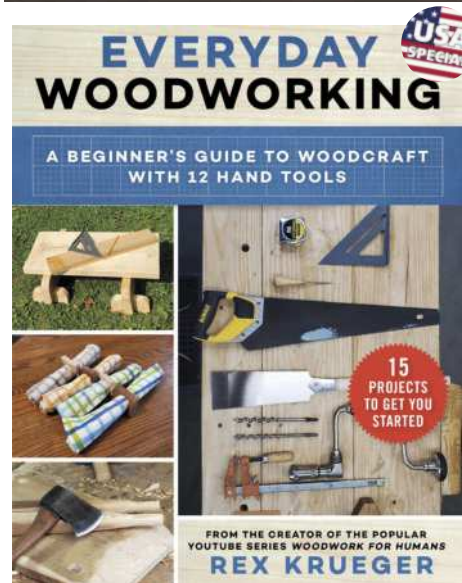
The beginner's guides

There is no plane, no backsaw and no chisel in *Everyday Woodworking* as are on the cover of *The Minimalist Woodworker*, within which, tellingly perhaps, there is no room for the hatchet nor the carving knife. And it is with the small axe that Rex starts his series of simple projects, some for the home or garden, others to assist the reader's new hobby. There are a pair of low, short Japanese sawhorses, a chopping block and finally a mallet, yet one can't help but notice that he employs a rubber one, absent from his dozen tools, for splitting a board with his hatchet up front in Chapter Two.

In the end, Vic also makes a woodworking mallet, perhaps with a longer lifetime than Rex's, and both authors build workbenches. Rex makes simple, improvable, useful things including a bootjack, a desk organiser and a knife, while Vic, coincidentally, starts his Projects book making one with a sharp blade. These are three of the finest woodworking books I've ever had the pleasure in reviewing. I smile reading *Everyday Woodworking*, enthused by the fun of working wood with only 12 simple tools, and then inspired by *The Minimalist* to take my new pleasure many serious steps further. That Rex acts as a primer for Vic should not diminish his book's value, just as the *Minimalist* books should not be considered anything but expert.



In Vic's brilliant study of small workshops, he notes that even the sitting room can be used





With the advancement of the computer age, handtool craftsmanship could be at risk. It's important the that value of hand work gets passed down to the next generation

Scratching at History

Inspired by the history of furniture-making, *James Journigan Snr* shows how he makes scratchstocks

My interest in period furniture began with a visit to the Chrysler Museum in Norfolk, VA, USA, more than 30 years ago. It was only a 10-minute drive from my house, and one Sunday I was looking for something to do. It housed then many fine pieces of 18th Century furniture from what is widely known as the Kaufman Collection, which can now be viewed in the National Gallery in Washington DC. I just couldn't believe how intricate some of these pieces were, and marvelled at how they could be accomplished without the use of modern tools and technology. And the best part is that they are still, to this date, the pieces that we use to judge excellence. It set me on a quest to learn all I could about the tools and techniques used back in the 18th Century to produce such fine work.

I began reading everything I could get my hands on about the trades of that time, revealing similar problem-solving characteristics between them all. Workshops had large windows to take advantage of gaining as much daylight as possible. Back then, there was no bank of fluorescence to light the room after sunset to extend the day at the flip of a switch.

The computer age

Then I would visit living museums, like the Anthony Hay workshop in Williamsburg, VA. What a wealth of information there. This was before the computer age, no DVDs, no YouTube; the only way to get this quality of information was to get in a car. But it was well worth it. Watching a craftsman working in a reproduced, historically-accurate environment of the day helped put things in perspective.



A filed piece of metal secured between two pieces of wood or in an adjustable device shown above, can be used to create an endless amount of shapes needed to reproduce complicated mouldings

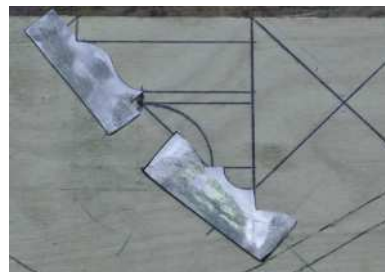
The mind-set and approach to accomplish a task was in most cases a complete 180° of how modern woodworkers accomplish the same task now. I try to place myself back in their time-frame to help me think like an 18th Century cabinetmaker when faced with an unfamiliar challenge. I ask myself what would they have done, what they had available to them, what were their limitations. Let's face it, they were in their trade to make money, so it had to be the most efficient means possible with

what time they had. They didn't have a Home Depot up the street, or a Woodcraft Store with every woodworking tool needed somewhere on a shelf. They had to use what was at their disposal for the most part. When they needed to hold an irregular-shaped piece of wood on a bench, the solution would be by springing a stick from a ceiling joist down to the table top. I sometimes think modern conditions limited our imagination when confronted with problem-solving.

In designing a piece of furniture today, a



Looking through a piece of masking tape placed over a drawn pattern makes transferring the profile onto the metal stock an easy task



Some mouldings take more than one cutter to achieve the desired finial shape required (above). Once the tape with the profile drawn on it is placed on the metal, it is a simple matter of filing down to the line to make the cutter (right)



craftsman looks at the tools and machines that are available on the shelf and designs the piece to suit them. A craftsman of the 18th Century came up with the design first, and then made the tools required, if need be, to execute the design.

The more I learnt, the more amazed I became, some of the methods used being pretty crude. It was like learning the secret to a magic trick. Once solved, the trick seems less impressive but one is still stunned to see it when expertly performed.

Take mouldings for example. There are many router and shaper bit profiles for modern craftsmen to produce mouldings, but most are based on a radius. Period mouldings used the cyma curve for shapes to be made, and there may only have been a few moulding planes from which to choose. But by simply making a scratchstock you have a limitless library of moulding profiles.

Reproducing mouldings

I take the same approach now when I have to reproduce a particular moulding. Let's take the gooseneck crown moulding I reproduce for a tall case clock for example. I start by drawing the design I wish to achieve on a piece of pattern stock. Next I place masking tape over the drawing because I can see through it to trace the design on to the tape. I then simply remove the tape and place it on a piece of metal card scraper and file down to the line to create the desired shapes.

Once the blades are sharpened and honed, they can be placed in a holding device, sometimes just two pieces of wood screwed together, which makes it easier to control while pulling or pushing it along the wood, depending on which way the wood's grain is going, until the desired shape is complete. A lot of shallow profile



To honour the craftsman's effort for a recent commission, a client group had his plane professionally engraved by another artisan

mouldings can be made just by using a scratchstock. If it is a deep profile, I can carve away much of the waste with a mallet and chisel first.

There's no noise and dust, and in this case I was able to match the mouldings of the 18th Century tall case clock quickly.

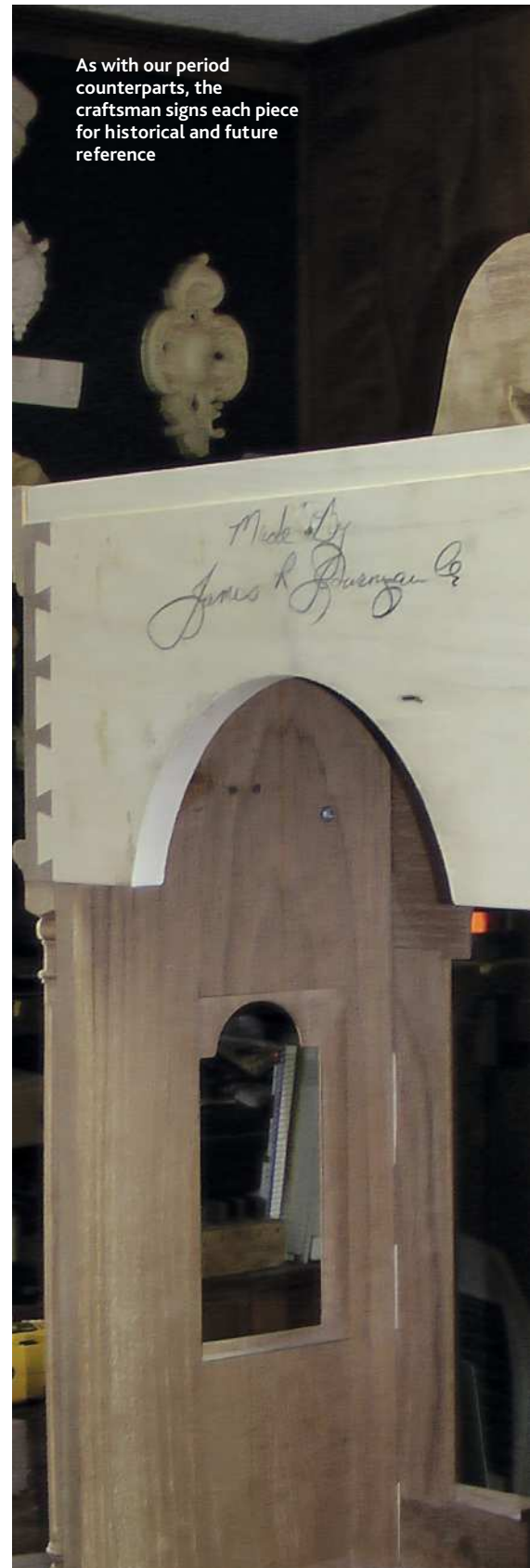
There were many uses for scratchstocks in furniture-making then. They would be used to make beads along the outside and inside curved surface as on a chair back, and to create fluting or reeding along the length of a bed post, or on furniture legs, round or square or on clock columns.

Thus was simplicity employed in the making of furniture during the 18th Century. There are many more examples. I could go on and on. I like to teach period woodworking techniques and the use of hand-tools because they can increase the options to those who have limited workshop space or limited funds for large machinery, and would like to create in a quiet and peaceful workshop. I have enjoyed this way of working for 30 years.

Visit thecolonialcraftsman.com and/or follow @the_colonial_craftsman on IG. He runs courses at Woodcraft in Norfolk, VA, and with Maine Coast Workshops.



These completed side crown moulding pieces for a couple of tall case clocks were reproduced using the hand filed scratch stock effort for a recent commission, a client group had his plane professionally engraved by another artisan



As with our period counterparts, the craftsman signs each piece for historical and future reference



A Workmanlike Way

Rex Krueger weighs the merits of a vintage tool chest and considers building a replica

My parents live on an 18th Century farm (which is old by American standards). When I visited in July, I went poking through their barn and I pulled out an old carpenter's chest. It was lost in a corner, crowded in with a pile of crates and rough benches. Painted a dull grey, the chest is hard to recognise as a piece of hand-made woodworking. It's plain and workmanlike; just pine boards, screws, and nails. But its basic construction hides an efficient design for tool storage. This chest is a roadmap for the modern maker, strapped for time and cash, who still needs a tidy locker to protect and organise their tools. If we understand this chest, we might make our own and soon see it tucked in a corner of the shop, lid sealed against dust, our planes and saws ready for the day's work.

The chest was built in the late 1930s or early 1940s. The slot-head screws were the only kind available until the late 1930s, and the hasp on the lid has that familiar Stanley logo introduced in 1935. This chest was built either during World War II, or just after, when the farm would have been emerging from wartime shortages into a period of great activity. In these years, the farm mostly raised sheep for wool and was busy enough to warrant a full-time herdsman, who lived in his own apartment, built into the lower-floor of the barn.

The herdsman himself might have knocked this chest together, but I think it was done by another hired hand, probably a full-time carpenter who mended fences, built feed-troughs, and hung the storm windows when the weather turned cold. The paint and construction of the chest match several other pieces found nearby, items like a classic five-board bench. The carpenter who made these pieces probably specialised in rough, outdoor work, but also had the skills to knock up simple furniture from leftover wood when a big job was finished.

The chest measures 41x16in (405x40cm) and stands just 15in (38cm) tall. I found it empty, but a chest of this length could have easily absorbed full-size handsaws and other large tools of the carpenter/joiner's trade. Screw holes

and tacks on the interior walls suggest fixtures for tool storage: probably a till for saws, spots to hang hammers, and floor space for a jack plane, a brace and bit and a roll of augers. There are no tracks for sliding tills or any of the other refinements we'd expect in a fine cabinetmaker's chest. These tool fixtures were long since torn out so the chest could be converted to general storage. Like other, more carefully-made tool chests, this one had value long after its working days were behind it.

With hammer in hand

This is carpenter's work, through and through. There is no joinery, with only screws and nails holding the planks together. The construction is brisk but thoughtful and demonstrates clear knowledge of materials and mechanical forces. I usually dismiss screws in woodworking because they seem sure to loosen, but these screws have held tight and the combination of screws and nails remains rock-solid, even after decades of damp conditions and the wild swings of New England weather.

In building the chest, the maker observed an interesting rule: any face-to-face joint was made with screws, but a face-to-edge



The carpenter's chest is a basic affair, but it has survived decades of neglect. The interior reveals reclaimed wood used throughout (above). Some of the pieces had been painted several times before becoming part of this project. The end-battens form a neat seal for the lid (below)





joint was always done with nails. Cheaper nails are used twice as often as more expensive screws, but the screws are placed where it counts, neatly countersunk and still holding tight. It's tempting to assume that the hardware was backed up by glue, but there's no evidence of adhesives. Even a small filler-strip across the front is nailed in place where the modern maker would surely have used glue. This chest was hardware only.

Without glue, the maker used board-and-batten construction, where two wide boards are set side-by-side and narrower boards are screwed across them to make up larger panels. This style has a long history and is often found on the doors of rural cabinets and cupboards. The board-and-batten style is quick but durable and plain hardware allows for cross-grain construction. The battens run perpendicular to the boards they join and the pieces will expand and contract in opposite directions as the humidity changes. Glue joints would fail when dry winter rolled over to moist spring, but screwed construction flexes with these changes and these cross-grain panels remain solid and flat.

The board-and-batten style looks rustic, but it hides clever details. Battens on the chest's narrow ends form a raised lip to cradle the lid. When the chest is closed, the components form an effective seal, blocking dust that would rust tools and reducing changes in humidity.

The chest's design also takes advantage of wood grain. The ends are rotated 90°, so the grain runs floor-to-ceiling. With this construction, the front and back are joined to side grain instead of the more fragile end-grain. This construction mirrors the classic six-board chest and you can bet the maker built a few of those in his day. The chest's top is triple-battened and only screws are used, so there's no chance of cupping and the lid remains flat. Battens across the chest's bottom hold it off the floor and allow much-needed air circulation in a spot that would collect damp. Unlike the lid, these floor battens are attached with nails alone, ensuring easy replacement if the battens ever rotted. Throughout the whole piece, the battens have been neatly chamfered with a plane, a detail that makes the chest more comfortable to handle and makes fragile edges far more durable. Everywhere you look, the speedy construction is tempered by knowledge and experience from the craftsman.

Time is on our side

When I build a piece of furniture, I always imagine it decades down the road and I wish I could see into the future and know how well my work holds up. I love seeing old pieces, especially ones that have been neglected a bit. The passage of years is unkind and any flaw will show. With this chest, I can see only a single mistake. The bottom is a single board and it's captured within the



The bottom (above) has swelled, forcing a seam to open in each end

four walls of the chest with no allowance for seasonal movement. After decades on a damp floor, the bottom has swelled and forced the ends apart. At the bottom, where there are no battens to reinforce them, the end boards are a fat 1/8in (3mm) apart and letting in plenty of air and dust. Even several months in my climate-controlled shop has done nothing to shrink the gap. The damage is permanent. Luckily, if we want to copy this chest, the flaw in the

bottom has an easy fix. Instead of a single, wide board, we would use two narrower ones with an unglued tongue-and-groove or even shiplap joint at the seam. With battens sturdily nailed across our two boards, the bottom could move with the seasons and still block dust without busting the ends apart.

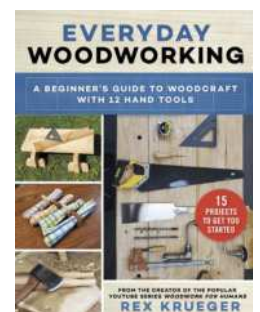
After years of neglect, it's also worth testing the strength of the whole piece. I loaded the chest up with metal planes, hammers, and chisels, lifted one end off the floor and twisted with all my strength. Much to my delight, the chest showed little racking and was much stiffer than I expected. What little movement there was could probably be eliminated by adding a long batten across the top of the front. This single piece would brace between the end-battens, absorbing racking and completing the dust-seal on three sides of the lid. It's an addition worth making.

My new, old chest

Make no mistake, this was a chest built by a country carpenter, not a fine cabinetmaker. This chest is neither as spacious nor as solid as a dovetailed case complete with skirts and a panelled lid. But even if it's unrefined, this chest is fast, strong, and cheap. It's tool storage for right now, when many of us need to protect and organise our tools but we can't afford weeks of time sunk into a 'proper' tool chest. A chest like this could surely hold our tools until we build that historically-correct dovetailed chest, but maybe it could do much more. Perhaps this is the only chest we need. Many of us use a small kit of tools to make simple furniture for our own homes. Maybe this chest suits those humble ambitions. Surely it will hold a handful of saws, a full set of bench planes a hammer, a mallet, and so on.

I think I'll take this very chest and re-fit it to hold the tools I use every day. I'll add a saw-till, hangers for my squares, and a rack to hold gauges. The chest is short, but I think I have the height for a single sliding till to keep my chisels, pencils, dividers and awl. I believe that I'll settle all my tools into this old beast and see how they sit. I'll work out of this chest for a few months to know if it suits me. If it does, I'll build a new one from clean white pine. It will be a simple build, done in a day with only a jack plane, a saw, a drill, and a hammer. And if I build it, I promise I'll write about it. Stay tuned.

Rex Krueger is author of Everyday Woodworking, and a furniture-maker and woodworker in Cleveland, Ohio. He teaches woodwork on YouTube and at rexkrueger.com.



Honed

Bandsaw Blades Reborn

Rather than disposing of dull blades, *Sean Hellman* resharpens them by hand filing

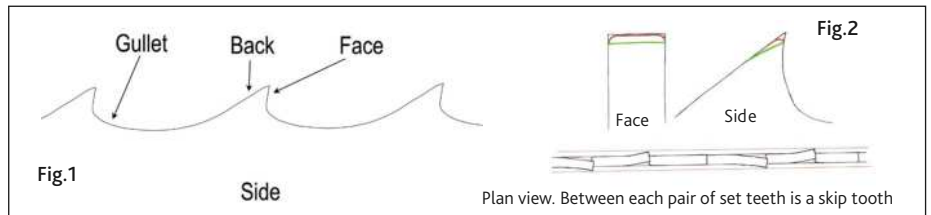
Whether a hobbyist or a professional woodworker, bandsaw blades are usually considered as disposable, and are thrown away when they no longer cut. This is a waste of money and resources, as most of the time the blade can be sharpened quickly and easily. Hopefully, if you own a bandsaw mill for converting logs into planks then you practise good economy and send them away to be sharpened. There is also the possibility of purchasing a bandsaw sharpening machine, which my research shows, currently retails for around a thousand pounds sterling. This machine, and any professional saw sharpening service, will sharpen the face and back of every tooth.

However, sharpening a bandsaw blade does not take long to carry out by hand, and once mastered, blades can be resharpened around five times or more.

Although any new bandsaw blades will have teeth that are sharpened on both the back and face (Fig.1), this is not as easily achieved when resharpening, without investment in the specific size and shape sharpening disc and a sharpening machine. Fortunately, however, the bandsaw blade is unique to edge tools in that it is possible to get away with sharpening only one of the bevels (back or face), and still maintain good cutting performance. This is because wear takes place only at the tip of the tooth, and mostly on the back. Grinding the back of the tooth to remove wear, will result in a new, sharp, square tip (Fig.2).

Rotary grinders can be used with cut-off wheels, grindstones or diamond wheels, but make sure that they are fine enough. A coarse grinding disc can make the tooth disappear in a flash. Personally, I find hand sharpening to be the most accurate, also giving the most possible sharpenings before the blade is no longer usable.

I have heard of people using cylindrical rotary burrs to sharpen the face of bandsaw teeth, but I find this more difficult and less accurate than sharpening the back of the teeth.



The red lines in Fig.2 show the set of the teeth in plan view. In the face and side views the red line defines a blunt blade, and the green lines show the filed shape of the teeth. Filing the tooth back (Pic.1, left)

Sharpening blades with large teeth will take less time than sharpening small teeth. Practise with large-toothed saws before attempting and possibly messing up a blade with four times as many teeth. It takes me about 15 minutes to sharpen a 6tpi, 1859mm long blade. The difference between its blunt and sharpened condition is well worth the time taken to sharpen. Obviously, if you are running a commercial workshop your time taken on sharpening could be more than the cost of a new one.

Sharpening blades yourself

To sharpen the teeth with a diamond file yourself, the blade needs to be held firmly, preferably in a saw vice (Pic.4). If you don't have one, use a couple of battens of wood clamped to a bench. I have a batten clamped to the front of my bench (Pic.2), with a T-shaped jaw holding the blade in place, whilst also supporting the 'loose' half of the blade (Fig.3). Support is essential for blades over 2m long.

Next, using a diamond file (this can be any needle file that has a flat surface) or a diamond card/plate, place the abrasive

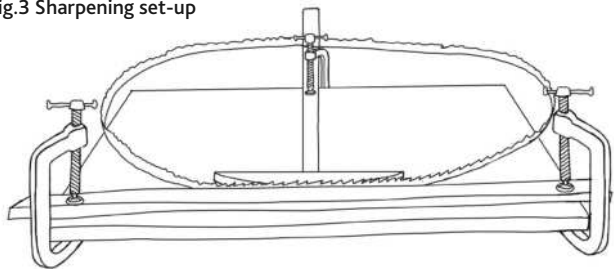
on the back of one of the teeth. Find the angle of the tooth and make a stroke with the abrasive. Use a finer file rather than a coarse one.

Check the scratch pattern on the tooth and make another stroke if necessary. For small teeth, only one short stroke will be necessary. For large teeth two or three longer strokes may be necessary.

Making and using a file guide helps with maintaining a consistent angle (Pic.5). This can be as simple as a small block of wood with a hole drilled into one edge and with the file pushed firmly into the hole. After finding the correct angle for the file, set the wooden guide block onto the end of the file so that its top surface is parallel to the bench.

The teeth on the blade have their teeth bent over to one side or the other. This is called the set and it stops the blade from sticking into the kerf or cut. When filing, the angle of the file should be adjusted for the angle of the tooth. With the teeth of the saw facing to the right, the unset tooth is filed with the file placed on the back of the tooth, at 90° to the side of the blade.

Fig.3 Sharpening set-up



The blade clamped to the front of a bench (Pic.2, above), with the diamond options for filing. The bright, abraded back of teeth (Pic.3, below)



A saw vice (Pic.4, above) holding a 6tpi blade. A file guide can be as simple as a block of wood (Pic.5, left), with a hole to hold the file. Once you have the right angle set the block so that its top surface is parallel with the bench



For the tooth bent away from you, when filing the back, lift the handle of the file upwards, slightly. If filing the face of the tooth, then also move the handle slightly, but to the right.

Filing angles

For the tooth bent towards you, the file handle must be lowered, slightly. Look at the scratch marks on the back of the tooth to determine if the file needs to be raised or lowered more or less, but again this is more appropriate on blades with 3 or 4tpi.

On 6tpi saw blades, I do not adjust the file and just file straight across the teeth with good results. On a 1tpi blade, I do tilt the file as this results in faster and better sharpening.

Move onto the next tooth and repeat. Try and use the same length of stroke and pressure on each tooth. After working the first few teeth, a regular rhythm can be achieved, and this helps to keep the same angle and amount of abrasion.

To achieve the best possible tooth sharpening, use a diamond half-round file. The flat side of this file is used on the top

of the tooth, and the convex side of the file is used in the gullet when sharpening the face of the tooth. It does not matter if the rounded side of the file does not exactly fit the curved hook of the face of the tooth. The idea is to abrade the top part of the tooth. I only do this on 1-3tpi tooth blades. Any blade with 6tpi teeth or more takes too much time, and any added performance is questionable.

The part of the blade that is most stressed when the saw is in use is the bottom of the gullet. This is the narrowest part of the blade, and is where cracks are likely to originate. Check carefully with a loupe (magnifying glass) to see if there are any fracture cracks starting and grind the gullet with a rotary burr, to remove the crack. Use the blade in the bandsaw and be joyful.

Sean Hellman is a woodworker and the author of Sharp, a bible of sharpening reviewed in QM08 & available for £25 + p&p from seanhellman.com.

New home for old blades



Bandsaw blades which no longer cut on the bandsaw still work very well in frame saws. Cut them to a suitable length, using a cutting disc on an angle grinder, and drill a hole in each end. These are then ready to be secured within your frame. The holes are easily drilled: but first, clamp the blade down before drilling, because as the drill exits the hole it can become caught, and snatch the blade out the hand. Centre-punch the accurate position of the hole first, and then drill the hole. Repeat for the second hole.

Gauged to Perfection

Feeling frugal, *John Lloyd* fettles an inexpensive cutting gauge for precise marking



Part of fettling a cheap marking gauge involves cleaning up the 'mortise' in the stem (left). A jigsaw blade is good as a replacement blade, needing a bit of work on a grinder and then sharpening of the bevels on a stone



Traditional wooden gauges come in a variety of types but they all have the same basic design. A wooden stick or 'stem' with a fence or 'stock' which slides along the stem and is locked in position with a screw, or sometimes a wedge. Some gauges have a couple of brass 'wear strips' set into the stock. That said, I have some second-hand gauges without brass strips that I have been using for more than 20 years and there's not a glimpse of wear yet. I was trained to use a 'marking gauge' for most setting out, just a very simple wooden gauge fitted with a single pin to mark out thickness or width of a component. But the pin marks a 'V' shaped line which is not, perhaps, ideal for precision work. A 'mortise gauge' has two pins next to each other, and a 'combination gauge', a marking and mortise gauge in one, has three pins, two on one side of the stem, one on the other. This is a nasty, spiteful

The cutting gauge, pencil gauge, marking gauge and mortise gauge



tool whose main feature is that it's adept at inflicting puncture wounds on the poor unsuspecting user.

Cutting with a gauge

A 'cutting gauge' is just like a marking gauge but is fitted with a knife in place of the pin. The knife is required for cutting clean crisp lines across the grain, perhaps for marking out dovetails or trimming veneers, where a pin would create a nasty ragged mess. It seems quite popular, these days, to 'tune' the pin on a marking gauge with a file, in effect

turning the pin into a knife, enabling the gauge to cut sharper lines. Unlike a cutting gauge, the modified pin can't be turned through 180° to reverse the bevel, so why not just use a cutting gauge for everything? And that's what I do! I can't remember the last time I used a marking gauge, I now just use a standard wooden cutting gauge or a metal 'wheel marking gauge'. If you decide that a cutting gauge is the way forward, but don't have the inclination, or the budget, to buy a gorgeous Clenton gauge, right at the

other end of the scale, there's a cheap, but initially rather nasty, wooden cutting gauge.

I have tended to use the Marples No.4 (available now from flinn-garlick-saws.co.uk), but in the past the blade has been skinny and tapering with a poorly-shaped end which seemed then to be made from rather low-quality steel. It didn't sit parallel to the stock and the wedge typically did not apply enough pressure to the blade near its business end. In short, it wouldn't work with any sort of accuracy or efficiency and will usually do a worse job than a marking gauge.

Fettling the gauge

But a little time spent tuning will make this gauge, and those you might buy second-hand, work like a dream. Firstly, remove the wedge and throw the nasty little blade in the bin. A new blade can be created from a metal-cutting jigsaw blade, which will be a nice, hard, steel. Grinders are a



Before and After. As once supplied by Marples (left) with the blade and wedge not seated properly. Using a wooden jig on a Tormek to grind the bevels on the new blade



quick, efficient way to fashion a new cutting-gauge blade. A file is hopeless because the blade's steel is so hard, but a diamond stone can work for shaping the bevels. Honing on bench stones finishes the blade.

With the new, improved, blade ready for action, the gauge itself needs a little attention. Slide the stock up to the inside face of the square mortise in the stem and lock it in position. The face of the stock can then be used to guide a narrow chisel and level this face of the mortise to the face of the stock, against which the blade will seat.

The next challenge is to get the opposite face of the mortise to the same angle as the brass wedge. Just use the width of the wedge sitting on the new blade as a guide. Mark the height of the wedge onto the 'stem' with a scalpel and trim the tapering mortise to the scribe line with a little more careful chisel work, occasionally trying the wedge

and blade in the mortise to check progress.

The mark of success is when the wedge applies pressure to the whole of the blade, and the blade sits snugly against the stock when the stock it is slid up, and locked, against the blade. Often these adjustments will result in a slightly larger mortise and the wedge extending rather too far through the mortise when locked against the blade. If this is the case, the end of the brass wedge can be trimmed with a hacksaw until flush with the stem, or alternatively a little strip of veneer glued into the mortise will narrow the mortise slightly.

Marking out correctly

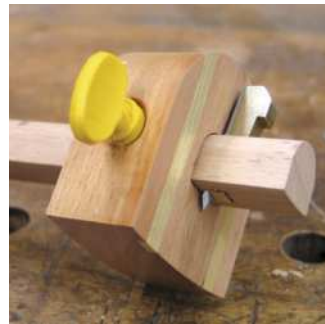
Of course using a nicely-tuned gauge, in itself, will not ensure correctly marked out components, it will just ensure that all the components are marked the same, no amount of tuning will compensate for not switching your brain



Leveling the mortise with a narrow chisel (above)



If necessary shorten the brass wedge (above) after fine tuning the mortise. The blade's bevels can be reversed (below), but should always face the waste of a cut



on, when setting any gauge. For a tool that is meant to be able to mark things with great precision, the wooden gauge, on the face of it, would seem to be rather crude, but it can in fact be set surprisingly accurately. The setting process just involves adjusting the stock to about the right setting and locking the thumb-screw, but not too tight; fine adjustments can then be made by tapping either end of the gauge on the top of the bench, a seemingly rather crude technique, but actually very effective; finally, tighten

the thumb-screw. When using a gauge I would suggest putting the workpiece in the vice, allowing both hands to be used to control the gauge; maintain pressure sideways on the stock to keep it snugly against the edge, and rest the stem on the surface of the workpiece so that the far edge of the stem and the pin/cutter are both in contact with the surface, keep the stem in contact with the work and maintain pressure on the cutter. Control the depth of cut by applying a gentle twisting action on the gauge, whilst pushing it away from you, to make the gauge line. The 'one hand for the gauge and the other for the workpiece' technique might look professional, but it can result in rather haphazard gauge lines!

Visit johnlloydfinefurniture.co.uk for details of the long & short courses John runs in Sussex, England, and follow @john_lloyd_fine_furniture on IG.

Falling in the Right Places

Needing an alternative to a cordless drill, *Ethan Sincox* restores a classic eggbeater

I grew up on a small farm, in a small town, about 50 miles outside of Saint Louis, Missouri. My parents still live on that farm. As much as they want to, they can't keep up with all the chores necessitated by farm life; so to help them out, I visit them quite often, between three and four weekends a month, to do the work they can no longer do. To make my life easier, I picked up an old metal toolbox through Facebook Marketplace and filled it with duplicate tools I felt might be useful on the farm. I fitted it with a vintage lock (to which I have the only keys) and brought it down to store in the garage on the farm.

For making holes, I went the easy route for a while and brought down my cordless impact driver. But it seemed like every time I wanted a drill, I'd left it at home. What I really needed was an old eggbeater style hand drill I could keep in my toolbox and pull out when I needed it. Since I've owned and restored a number of Millers Falls No.2 and No.5 drills over the years, I decided to look for a No.1. Because I had a specific model of drill in mind, the best way to find one was through eBay, so that is where I went.

I won't go through my eBay searching techniques, so let's just say I quickly had a Millers Falls No.1 on its way to my workshop. When it arrived, I looked it over and realised I'd picked up a very early version of the No.1. The early frame (Types 1-3) was built from 1878 to 1899. It was 10 1/2 in long and the casting has no place for a side handle. The later model was built from 1899 to 1942, had 10 different types, was over 12 in long, and the casting allowed for a side handle. Old Tool Heaven considered them different enough to list them separately, so I will do likewise. As such, the hand drill I picked up was the Millers Falls No.1 (newer frame) Type 1, built from 1899 to 1910. It came with the McCoy's springless chuck and the screw-type adjustable equalizer bearing.

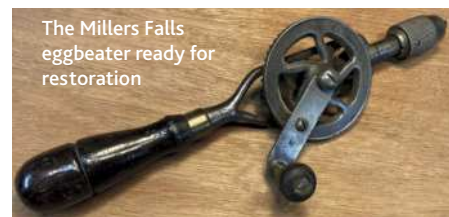
I noted this information as I disassembled the hand drill, preparing it for a full restoration. I took apart the springless chuck, which consisted of a set screw, the outer shell, the body, and the three springless jaws. It's really quite an elegant system and works very well; I suppose the only draw back is that it only takes bits up to 3/16 in diameter.

When the drill first arrived, I posted some photos of it to my Instagram



The author's Matthias Fenner birdcage awl is useful for more than making holes

account. An astute observer pointed out that the spindle was too high, which caused the spindle gear not to engage the main gear properly, which is why it did not spin as easily as it should have. He said likely the cause is a missing bearing that should rest on top of the spindle, inside the spindle cap. If that is missing, the shaft pushes too far into the spindle pocket. Sure enough, when I removed the spindle and spindle gear, nothing came out of the spindle cap. The IG observer indicated the bearing should consist of two 5/16 in diameter discs of steel that are 1/16 in thick sandwiching a number of 1/8 in ball bearings. After some measuring and layout, I decided to go with 3/32 in ball bearings. It allowed me to sandwich seven bearings



The Millers Falls eggbeater ready for restoration

between the discs instead of four or five and took up just a little less room in the pocket, which my measurements indicated I needed.

The crank arm and main gear came off easily enough, as did the adjustable equaliser bearing and the handle. Once the entire hand drill was fully disassembled, all of the small parts were dropped into a



The partially disassembled drill and the tools of the trade (above) and the main handle and crank handle after cleaning (below). The drive wheel after cleaning (bottom) and the parts of the chuck all polished up (below left). The cleaned and disassembled drill (above left)



pill bottle container of Evaporust and left to soak for 24 hours. I prepped the crank handle by wrapping the wooden knob as tightly as I could with electrical tape, stretching and pulling as I wrapped to get it as watertight as possible. I completely wrapped the knob twice before I cut the tape. Then the large parts were spread out in an old glass baking dish and likewise left to soak in Evaporust for 24 hours. Most of the parts were clean enough that I could have gotten away with just a few hours of soaking, but it never hurts to leave metal parts soaking in Evaporust for longer, so I like to be sure.

Once everything was done soaking, I pulled it from the Evaporust and set it out on paper towels in my 'Restoration Tray',



which is just a tray for wet boots when you come inside from inclement weather. Each piece was then rinsed under warm water and scrubbed with a green nylon pad to clean the pieces further and to remove any crud that stayed stuck. Then I placed all the pieces I could fit into my toaster oven tray and baked them for 30 minutes at 200° to dry them. Any pieces that did not

fit into the toaster oven got dried with a new, dry terrycloth towel.

The next steps could be as simple or as complicated as I liked. This is where I took my time and thoroughly cleaned each part as best I could. Screws and bare metal parts that were nickel plated got polished up to about 4000 grit using various sandpapers and polishing cloths. If I was going to re-paint parts, this is where I took the time to remove any old paint that survived the Evaporust bath and scrubbing with the green pad. I used wire wheels, wire brushes, awls, picks, coarse sandpaper, and anything else I could think of that might work. Once the surface was completely free of paint, I wiped it with acetone to remove any grease that

might have remained. Finally, I used blue painter's tape to protect any parts that should not have paint on them, like the teeth of the main gear, any threaded holes, or parts that were previously nickel plated.

I do not have a dedicated paint booth, but I had some old cardboard boxes lying around, so I made one of them into a makeshift booth for this project. I suspended the parts I was painting, the main gear and the body, with wooden dowels (ie. chopsticks) and moved to a well-ventilated area (outside). Newer types of the Millers Falls No.1 drills, from 1915 on, had the main gear painted red, but because of the age of this one, both the frame and the main gear were painted black. I used Rustoleum's high temperature low gloss black paint in a rattle can, my go-to for projects like this. To avoid drips,

I kept my spray nozzle at least 12in away and made multiple light passes. After the third coat dried for about eight hours, I prepped my toaster oven and carefully removed the masking tape from the gear and the frame. They went straight into the oven, without setting them down on any other surface because the paint is still soft enough to pick up impressions from anything they touch. They were baked at 200° (Fahrenheit) for 30 minutes, allowed to cool completely, baked at 250° for 30 minutes, allowed to cool completely, and then finally baked at 300° for 30 minutes. The result was a durable paint coverage that looked close to the original paint color without too much hassle.

While the painted parts baked, I began reassembly of the chuck. The three jaws of the chuck were set into place on the body and the outer shell was carefully set back into place and threaded until the set screw opening lined up with the set screw hole. Then the set screw was put back into place, locking the chuck back together. It was so easy, not having any springs to mess with! Why'd they ever do away with springless chucks?

After the body and drive gear were dry and cool, I completed assembly. With rather unusual luck, my hand-made bearing set for the spindle pocket, assembled with some ball bearing grease, fit perfectly and allowed the spindle to go in enough that the spindle gear was pinned properly into place with little trouble. Then the crank handle, chuck, and adjustable bearing was all added back to the frame. Finally, the main handle was threaded on and pinned into place. I locked a 1/8in drill bit into the chuck and made a few holes, just to make sure everything worked as expected. The restoration of my Millers Falls No.1 hand drill was done!

Only problem is... it looks and works so well, I'm pretty sure I won't be sticking

it in a locked toolbox at the farm, only to be used every now and again. "Sigh". Fortunately, I received three more Millers Falls drills in the mail the other day (a No.2 and a pair of No.5 hand drills). Maybe one of them will be boring enough I can send it to the farm?

Email thekiltedwoodworker@gmail.com or visit [@thekiltedwoodworker](https://www.instagram.com/thekiltedwoodworker) on Instagram.



The Millers Falls No.1 (newer frame) Type 1 hand drill fully restored and ready for another 120 years of service



The drive gear and body receive coats of black paint (above). Multiple lighter coats go on easier and look better than one heavy coat (below left). The author's custom 5/16in bearing assembly for the spindle pocket (below)



The toaster oven (left) backing a new Rustoleum black finish. The adjustable bearing of the No.1 hand drill (below). The McCoy's springless chuck, polished and fully re-assembled (below left)



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Second Chance

Lamenting the loss of old furniture wood, *Robin Gates* is all for recycling

Bonfire Night, that rowdy celebration of Guy Fawkes' failed attempt to blow up England's Houses of Parliament on November 5th 1605 is upon us once again. Summer's twittering swallows have given way to raucous fireworks splitting the night sky while bonfires roar against the coming winter. Wrapped like sheep in overcoats and woollies we gaze into the flames leaping from old fencing panels and fallen branches, pallets, doors and broken window frames dragged here for burning, topped off with an effigy of Fawkes stuffed with straw. It's a barbaric celebration yet oddly heart-warming to be one of that ring of bright faces standing with our backs to the darkness. Unless, that is, you are a woodworker and spot amidst the fiery heap the outline of an elegant table leg or crest rail of a chair. Watching old furniture burn is so very sad.

Thirty years ago I made the mistake of returning to the ashes of what had been recklessly consigned to the village bonfire, and I'm haunted by the memory of it now. Among the twisted nails, wire, screws and hinges I found one blackened claw-and-ball foot of – I dread to imagine what: a Queen Anne table, a Chippendale chair? If only I had snooped around that hastily assembled pile the day before it was torched.

I think of the work that's gone into old furniture and the life it's had, beginning with trees which grew over generations if not centuries, perhaps in some tropical forest. Logs floated down river were loaded onto ships and carried half way around the world, perhaps to the East End docks of London where they'd be auctioned on the quays. From there they'd make their way by horse and cart into the mutually-dependent maze of furniture-making trades clustered around Shoreditch, Hoxton and Bethnal Green. Everything was here in the 19th Century, from sawmills and timber merchants through carpenters, turners, cabinetmakers, chairmakers, upholsterers, carvers and gilders, to French polishers and the glue factories and foundries holding it all together. Then off it all went to the big showrooms, thence perhaps to the imposing City residence of some entrepreneur having made a killing on the canals or railways, or to the more modest abode of newly-weds starting out.

Furnace fodder

After that, who knows where a dining table, chair, desk or cupboard went or what it saw. Births, marriages, careers won or lost, inevitably a wake or two, and declining years spent in the quiet of the garden shed. The hands that made this so many years and miles away, the generations whose lives revolved around it have all turned to dust. What a tragedy it is if the surviving timbers are consumed by fire for a moment's heat or entertainment. And yet that's often the fate of old furniture wood every day of the week. Much of what's collected at recycling centres is shredded to make chipboard or buried at landfill sites, but as the UK ramps up its efforts to produce electricity using biomass – essentially wood pellets – it's increasingly likely that furniture thrown out today will become the furnace fodder of a power station tomorrow. The loss of those hard-won timbers invested with so much life by our ancestors feels like a heavy price for boiling the kettle or turning on a light.

Thankfully not all and perhaps relatively little of the furniture that's thrown away is antique or even old. Some of it barely qualifies as wood, and I might say 'good riddance' to that



Ripping what's re-usable from an old table leg

plastic-coated flat-packed stuff that's discarded with every house move and change of fashion. But these days our chances of finding anything useful on the eve of Bonfire Night must be slim. TV's 'restorers' with their power sanders, resins and trendy distressed finishes have seen to that, condemning anything remotely serviceable to a fate worse than fire. And I wouldn't recommend fishing in the skips at a recycling centre, which will only court trouble. Skips on the street are a different matter, where unceremoniously dumped wood and furniture are fair game for anyone with imagination. Old pine floorboards and skirting, cedar matchboard – you don't know what you'll find where a building is being gutted. If I were more confident and nimble I'd be a committed skip-diver, getting in there to have a proper look. But no, the most convenient, safe and not least beneficent place to search for your decent furniture wood is the charity (thrift) store. For the hobbyist woodworker it's certainly a better source than the typical DIY store; if there's one thing more disheartening than old furniture on fire surely it's those aisles of exorbitantly priced kiln-dried 'whitewood' leaking rivers of sap across the floor!

Here at the charity store you'll find everything from bathroom cabinets to boardroom tables, often only deemed saleable



Lancashire pincers (above) are essential for pulling out old nails



Straightening out a rip-sawn edge with a 14in Emir raze jack plane (above), and final planing of reclaimed oak (right) with an Edward Preston coffin smoother



Delightfully workable beech (left) from an old chair leg, and a handful of marking tools: try-square, rule and gauge

because despite its many faults the money is going to a good cause. Some of it is DIY furniture, the sort of thing a well-meaning handyman likes to make and give to people who have no use for it. Kitsch cocktail cabinets, fiddly fall-front bureaus, monstrous TV stands and gloomy dark-stained cabinets covered in peeling veneers. If something good does turn up – a church pew, tilt-top table or Windsor chair not made in a factory – you can be sure the local antiques dealers will have bagged it before you're out of bed. So what we're left with is some good old timber, seasoned for decades and stable as you like, the only inconvenience being that it's tied up in some ugly old piece you've got to deconstruct in order to reach it.

Having noted such a piece which has been standing in the store for weeks, failing to attract a buyer despite the give-away price, the trick is to be there with your wallet just before it's put out with the rubbish. You can make an educated guess at when that'll be by checking the ticket. If it's November 1st (week 44) and week 13 (last Easter) is written on the ticket, that old wardrobe or dressing table is well past its scrap-by date. But do make sure the wooden beast will fit inside the car, otherwise you'll have to saw it up there and then, which makes a poor impression on anyone who happens to be donating something similar at the time.

Exotic species

Those properly qualified in the mysterious arts of restoring antique furniture must keep stocks of rare and antique woods which have been reclaimed from furniture, or how else do they restore a piece and not compromise its antiquity? Deconstructing furniture from a less environmentally-enlightened age often throws up exotic species which, today, would be best left gathering growth rings. It's illegal to trade in some of those species once common in cabinet-making which are now endangered species. Today's rainforest logging is an ongoing disaster, and surely consigning the products of yesterday's environmental destruction to the flames only adds insult to injury. This stuff deserves a second bite of the blade.

Even plywood is worth saving when you see what they charge for it in town. And there's many a blockboard wardrobe door that's made a good shelf or bookcase. Generally I find the most useful timber in factory-made boxy pieces. A sideboard comes to mind with its solid flat surfaces and four-square carcass, a tomb-like blot on anyone's living room, although I'm sure it served its purpose in its day. Out of that came oak and mahogany boards, a useful quantity of ash, delightfully workable beech and a whole jar of Robertson socket screws which I've been using sparingly ever since. These quality fastenings were invented by Canadian Peter Robertson in the 1900s, using a tapered socket in place of a slot. Robertson's slogan of 'Drives like lightning' was no hollow boast – the driver fits the socket with absolutely no tendency to wobble or slip. After decades of lying dormant in old wood these screws emerged with similar ease, their threads and sockets crisp and ready for re-use.

Besides the wood, there's often a treasure-trove of interesting ironmongery to recover, often of better quality than what's available on the High Street. Slotted screws, of course, but also hinges, stays, catches, drawer and door pulls which can all find new homes if carefully removed. A well-fitting screwdriver is essential if screw heads are not to be mangled.

Only the most basic hand tools are required for turning this discarded furniture into usable timber: pincers, screwdrivers, hammers, handsaws, try square, rule, pencil and plane – and none of it posh. Plunging in where tools were not intended you'll find the dark-stained surface camouflages screws countersunk and buried beneath wax or wooden plugs. Where someone has jury-rigged a loose joint expect a handful of assorted nails. Better to find this with your general purpose saw or scrub plane than risk your finest edges.

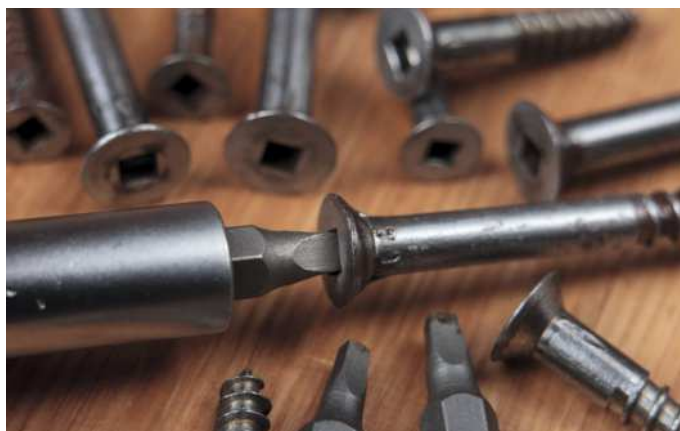


Highly workable, but now endangered ramin recovered (above) from a fly-tipped cocktail cabinet. An oak plank (right) resawn to a more useable thickness, and an oak table top ripped (below)



A lot may be discovered with a judicious knock of the mallet, perhaps growing more persuasive with a lump hammer, just to see what moves. I heave a sigh of relief when gaps reveal dowel joints – they saw apart so neatly and with little waste. But reducing a piece to its longest widest boards is only half the battle, because these are typically made up from narrow boards of alternately laid flat-sawn pieces and, once the supporting framework is gone, they're free to cup in opposite directions like waves in a choppy sea. Stripped of stain and varnish the adjacent boards may also display disconcerting clashes of grain and colour. So my next step is to rip the made-up boards into their component pieces. Where tongued-and-grooved joints have failed you can use their lines as guides for sawing, with no marking required.

The next stage is planing surfaces, stripping away old coatings to reveal the timber's honest face. My fear of what lay behind peeling veneers was put to rest quite recently when the underlying timber turned out to be quarter-sawn oak with subtle threads of silver grain shining like moonlit rivers, far preferable to the showy surface concealing it. Discoveries like this dispel any lingering sadness for the demise of the furniture itself, because now I see a future for its reborn timber. Pushing a scrub plane across both sides of a stack of deep-stained boards is hot dusty work, and more so if the wood is warped, bowed or twisted, but as the boards emerge straight, flat and ready for the timber rack it all seems worthwhile. Those saved pieces have a pedigree which store-bought timber takes years to acquire, and therein lies the X-factor of reclaimed timber. Yes, it comes in odd shapes and sizes, with dents and dings and holes left by old hardware, but that's also the beauty of it – the patina of experience, one life lived and another just beginning.



A treasure trove of Robertson socket screws & their tapered drivers

Dividing Field Fencing

Wycliffe Stutchbury is on the shortlist for the Wood Awards in the UK for his reclaimed oak screen



This room divider was created to further Wycliffe Stutchbury's exploration of textile techniques and characteristics using wood. The piece has a flowing appearance and is made up of thousands of small oak tiles glued to an open weave cotton twill, creating a curtain.

The curtain is hung on a hinged, three-panelled European oak framework with hemp rope and cleats. The form is dictated by the ways in which the construction hangs over the supporting uprights, rather like a sail being held by the mast. The height is adjustable.

The tiles were cut from discarded oak field fencing retrieved from the South Downs in Sussex, England. The variety of colours and textures is explained by the different ways the timber reacted to weathering, and this piece is an attempt to display the many wonderful ways that timber responds to the environment.

Visit wycliffestutchbury.co.uk or woodawards2021.com.



Bench Rules

David Keys calls for more use of reclaimed wood

According to the Wood Recyclers Association, 60% of waste wood in the UK is recycled. That's pretty good, and we are getting better. Back in 1992 it was less than 2%. It's a shame that we don't separate the good quality wood and recycle it in a more imaginative and creative way. Most of us have probably been at our local recycling centre and witnessed a beautiful old mahogany dresser being condemned to the chipper. That's why when I started woodworking, I decided to save as much scrap wood as possible, and to give it a new purpose.

I spend a lot of time sourcing and cleaning up waste wood. It comes in the form of broken furniture, driftwood, I even recently picked up a load of lovely thick pine boards that had originally been the ceiling of a factory built in the 1930s. It takes time to remove nails, and plane off old paint/varnish, but it's always worth the effort. Those pine boards from the factory have growth rings as tight as a vinyl record, nothing like our modern commercially grown pine.

I was asked recently by a friend to build a bench for a 50th wedding anniversary. For a lot of people, the first step is to draw a plan, then buy the wood. For me, the first thing will be to look through my stock of scrap wood to see what could be used, then plan. For the bench, I found a door from an old broken wardrobe. It was a good length, comfortably wide, and had a nice curved edge that could work as a back rest. I also found some long thin offcuts of ash. At that point I remembered seeing a spindle back bench, made by the legendary George Nakashima. When I thought about it, I had everything needed to make something similar. Although I think he used a slab of walnut, not a wardrobe door!

I started with the spindles. I decided to carve them by hand as I don't have a lathe. The thin offcuts were quite easy to cut to size. I then hopped on the shavehorse, and used a spokeshave to get them into an octagonal shape. I tapered each end down to around 12mm cross section, and used a plug cutter in a brace to guarantee a 10mm round tenon.

The seat and backrest were simple. I cut the curved lip off, planed the edges, and used a scraper to reveal the beautiful wood



under the finish. I glued in some pieces of scrap sapele on the underside of the seat to provide a bit more strength where the legs and spindles were going.

I used the thicker ash offcuts for the legs and stretchers, and mirrored the octagonal shape of the spindles. The stretchers were joined to the legs with through-wedged tenons.

This stage of a build is when the nerves start. I dread something going wrong, spoiling all of the time invested. I knew that drilling the holes for the spindles could pose a problem if they weren't accurate, so I used my Mancuna pillar drill to make a 10mm hole down through the centre of a block of wood, and cut the bottom at the required angle to give the back of the bench a bit of a lean. This would guide the drill bit into the holes at the same angle every time. The locations for the holes were marked out using dividers, and a straight edge kept my drill guide the same distance from the back and in line.

Then the dreaded glue up. The legs and stretchers were fairly straightforward. I checked the spindles to make sure they were spot on for a dry fit. With the slight lean of the spindles and the curve of the backrest, there would be no way of clamping everything, so every joint had to slide into place without any need for persuasion. This took a while. When I was happy, I started applying glue, and to my relief, 44 joints came together in one go without the need for a big hammer or swear words.

This is just one example of saving some beautiful old wood, and repurposing it into something new to be enjoyed for many years to come. When you think about it, wood is so easy to recycle. You don't need industrial furnaces, just a few hand-tools and some imagination.

*Follow David @d.keyssustainable
woodworking & visit woodrecyclers.org.*



Assembly called for 44 joints all in one go



David used his Mancuna pillar drill (above) for accurate drilling of the seat holes



The bench inspired by George Nakashima is made from recycled timber

Storming On

Once a travelling woodsman, *Alex Walshaw* has found his roots

Alex Walshaw left school aged 15, working then as a farm labourer in Lincolnshire. He tried studying horticulture, but instead moved to South Wales to work as a Conservation Volunteer near Cardiff. By 18 he was living on a protest camp in North Wales, fighting to save woodlands from a road being built across Anglesey. Hitching on the island one day he was picked up by the esteemed greenwoodworker, Huw Roberts, who was soon offering Alex a three-year apprenticeship on Anglesey.

When his 'bender' was blown away, Alex went down to Gloucestershire for a weekend course building a yurt with Hal Wynn Jones (yurtworks.co.uk), and stayed there for some months, as an apprentice of two Masters. Back in North Wales, he built his own yurt, lived in it till he became a journeyman, then packed his bags and went to work as a kitchen porter in Cambridge. "I needed a break from the outdoors," he says. Of course, he missed the woods, and then via a circuitous route ended up as a Forest Schools Practitioner in Birmingham, working part-time building and painting theatre sets. Eventually the circle was squared when he and his partner returned to Lincolnshire, near Market Rasen, and Alex became a full-time furniture-maker. He may not hitch-hike now, but his principles as a conservationist are retained, with all his pieces made from reclaimed, recycled or re-purposed timber. He scorches ash from fallen Dieback trees and Alex is paid in hazel for the coppicing he does on a local estate. And he rescues oak posts and rails that have been left by farmers, Alex says, to rot. "It's silly them being left on the ground, not even used for the stove." He has a better plan.

Follow Alex Walshaw on Instagram [@tree.space](https://www.instagram.com/tree.space) or visit alexwalshaw.com.



Alex has become a full-time furniture-maker, having taken a circuitous route since leaving school aged 15



Alex has a choice of materials to use for his bowls and benches, but it is all reclaimed or recycled or harvested from storm-fallen trees. Old field fencing, often oak in reasonable condition beneath the surface, makes an excellent resource for bench tops (above) and you can even see the mortises for rails left on his chopping boards (left). He also scorches ash from Dieback victims



By the Thinnest of Joists

Reaching a critical point of timber framing, *Dylan Iwakuni* is stunned when his section appears to fail

It won't fit. It's off by 30mm." What? Seriously? Measuring several sections, the carpenter continued: "The centre line is off. This means this whole row is off." This is bad. The master carpenter came over: "I'll check. Proceed with the west side first." We were in the process of reassembling the century-old Kominka (traditional Japanese folk house) at the new location, having spent the last nine months disassembling, repairing and adding new materials to the structure.

I had been in charge of the second-floor beams, from repairing the old materials, working on the curved beams, marking out and cutting the new materials for the extension area. Honestly, it was my first time being in charge of a task this big.

Though the individual joineries had been test-fitted, the first and only time the entire structure would be assembled was on site. It was a moment I had been looking forward to, yet at the same time, had been nervous about.

My head was in utter confusion and panic, unable to focus on the task at hand. A hiccup in the assembly not only looks bad in front of the client but puts a halt to the process, makes others wait and lowers the general mood. The material in question was where the newly-added beams intersect with the old, curved beams. I went over the markings I had done on that material. I recalled using the original centre line marked on the beam instead of laying out a new one.

The original line was still straight, and so I had relied on that line. Perhaps that was the mistake. "Right, this should work," said the master carpenter. We all gathered back. "The centre line was correct." What? A moment of shock, instantly washed away by a wave of relief. "The old posts are warped and are not standing straight. The lines are correct so it should be able to fit."

Raised again

The beam was raised once again, as each of us got into our positions; pushing the posts, slowly lowering the beam, rhythmically hammering it from the top. A little push on the posts and the beam landed into place without a problem.

"Right, now back on to the west side." I couldn't hold back a smile, awash with relief and accomplishment now my section was completed. Seeing the lines



As not every joinery could be tested beforehand, some parts required minor adjustments on the go



Curved beams, old and new materials, different heights, many things happening at once.



Guiding the rafter crane and bringing the material to the position. It's fascinating to think when this structure was originally built, all the materials had to be assembled entirely with manpower

and drawings I had been staring at for the past several months, turned into a standing structure. Another checklist was accomplished, adding to a further sense of confidence. With renewed energy, I joined the crew on the west side to continue assembling the remaining materials.

Being part of the assembly was a magnificent experience. The energy and passion put in by each member, each of us knowing what to do without being told, instinctively moving. It was a surprisingly quiet scene, but with constant movement going on.

Looking up at the assembled structure, the master carpenter remarked this was

the most challenging job he had ever taken on, and with this being his last before retirement he said: "I feel this job is a true test of all skills and knowledge I had gained over the years." Indeed, the job was more difficult and complex than any one of us had imagined. But then again, it was a job where no one could know what to expect. Observing each material and uncovering one at a time, the damages, twists and warps and figuring out the best way to repair, adjust and modify. It was like exploring a cave, only knowing what was in front of you with each step taken, not knowing how far the exit is.

On top of the numerous repairs, many



The first posts and beams standing (above). The long posts and the way the beams intersect did make for a technical assembly, requiring the posts to be slightly lifted and tilted to get all the beams in



The second-floor beams I was in charge of. Repairing the old materials, working on the curved beams, marking and cutting out the new materials. This part is an extended area of the original structure

of the materials had not been test-fitted together. Due to the large sizes and sheer number, various sections could only be assembled on site. As no one knew for sure if it would all fit together, we were all standing in awe as we hammered in the last beam.

The assembled structure was a familiar sight, the same atmosphere as nine months ago, when we started dismantling this structure. Now with it up, we move on to finishing off the roof, walls and interiors, hopefully, to be completed by next Spring, opening its doors to the public.

Follow the progress @dylanlwakuni.



Naturally, we all settled into our roles, those who enjoy being up taking the reins and hammering the materials. Others were in charge of tying the materials, supporting the posts, making minor adjustments amongst others



The signs of repair (left) are visible on the posts. Having stood for almost a century, it's inevitable to have damage from the natural elements. As much of the damage was on the surface, a little patch made it almost good as new. The completed assembly (above), with the materials all back into their original positions. Next is to work on the roof, walls and interior, hopefully ready next Spring

A Shot Across the Bench

There's a lasting shooting board you'll never have to remake writes *Scott Wynn*

A shooting board can square up a cut, remove saw marks leaving a nearly polished surface, adjust for length in thousands of an inch until the piece can float into place airtight, and even accommodate an out of square situation by its placement against the fence when worked. And, because the work is backed up by the stop you can plane endgrain without splitting out the exit side of the cut. I feel shooting boards are essential for fine work, but they are subject to hard use and prone to needing replacement. After making and using shooting boards for 40 years I have some comments and suggestions for you to consider before you build your next board.

Shooting boards, unlike bench hooks, have what I call a ramp on which the plane rides and this is integral to the function and construction of the board; a stop (fence) is then installed square (or another angle) to the ramp. The ramp is lower than the surface on which the work is placed: the small portion on the plane's sole between the plane's side and the side of the blade [pic.3.] rides along this difference in height keeping the plane from cutting away the side of the ramp.

Shooting boards can have either a parallel ramp or a sloping ramp. A parallel ramp's surface is parallel to the platform the work sets on, and is the most common. A sloping ramp runs downhill as the plane is pushed; more on this coming up.

The first point to consider in the design and construction of your shooting board that the stop will eventually fail, sooner or later, however it is fixed in place. Inevitably. Always. Efforts to screw and glue the stop in place will not survive: it will go out of square

sooner or later. And, the end of the stop that backs up the cut will get chewed up and will have to be renewed, otherwise it will provide little to no support to the piece being trimmed and will eventually let the workpiece chip out at the exit. This damage to the stop can happen in only a few hours of use of the board.

The stop ought to be as tall as the blade is wide, and as high as the thickest work you intend to cut on the shooting board. If your stop, for instance, is 3/4in high and you want to plane 1in-thick timber, you risk tearing out the far side of the cut where it is not backed up by the stop. For maximum versatility, the stop ought to be as tall as the blade is wide. You can always shim the work with boards of different thickness to use more of the blade's width, thus extending the time between sharpening.

If you have a sloping ramp on your shooting board, then the stop should be as high as the blade width at the point where the blade passes the stop. While a sloping ramp on a shooting board slightly extends the area of wear on the blade and gives a slightly more shearing cut, the disadvantage is its loss of capacity as the elevation of the work is much higher at the stop reducing the thickness of the work that can be planed.

A sloping ramp, however, is useful if you repeatedly plane thin stock as the narrow area of wear can create an actual notch in the blade pretty quickly, requiring much more sharpening than if wear were spread widely.

So how do you build a shooting board that has a stop that can be renewed without having to rebuild the whole thing? "Why not use a tapering sliding dovetail to fix the stop?" I once asked

myself. At first I thought this might be perceived as overkill by a woodworker with too much time on his hands, but it's worked out really well. I've been using the same two shooting boards for over 25 years now and they both have the same original stops.

The sliding dovetail used here is a one-sided tapered dovetail with the dovetail on the front side facing the work. Having the dovetail only on this side prevents the stop from rotating under the pressure of the cut. And because the sliding dovetail is cut only on one side, the uncut side remains as the reference when laying out the dado for the stop square to the ramp. The taper for the dovetail can then be laid out without affecting that squareness. The working face of the stop is parallel to the undovetailed back edge, so the working face of the stop will also be square to the ramp. If you have a two-sided dovetail you would have to do a lot of fiddling to get it square. Also, having the dovetail cut on the working side of the stop allows the face to be squared up without interfering with the fit. This is because the dovetail steps back clear of the working



Scott Wynn uses a sliding dovetail for the stop so that it can be adjusted and a new end worked to rectify frequent damage. The straight side of the sliding dovetail is at the rear of the stop (left, Pic.1)

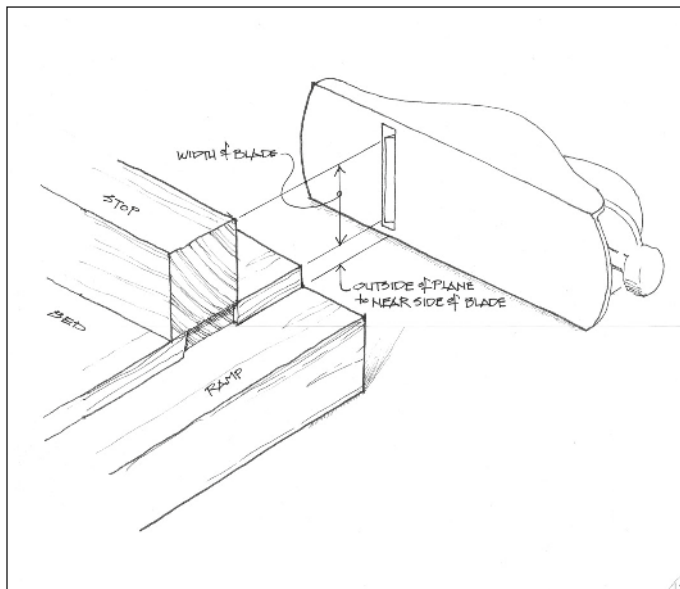


face allowing access to planing the working face. Refreshing the stop for square only requires tapping the stop out, taking a few progressive cuts on the working side to remove more wood where it needs to be removed, tapping back in and checking. Good to go.

The narrow end of the tapered sliding dovetail is toward the ramp: this allows the stop to be advanced over time to renew the end, by one of two methods. First, often the stop, though tight and holding, can still be further advanced by a few light taps of the hammer, just enough to renew the end. But if, over time and repeated tappings the wood has fully compressed, the stop can be driven out and a single light shaving taken off the back. This will make the stop narrower and it should advance further when tapped back in. If not, take another pass with the plane.

If you do not have a sloping ramp and your dovetail resides in the 1/4in portion of the ramp side that restrains the plane, you will also have to do a shallow relief cut of the dovetail portion of the end so it doesn't interfere with the run of the plane.

Refreshing the end then only requires a pass or two with your shooting plane (if you've also chamfered the back edge) to make the end crisp and square. And the dovetailed stop and the restraining batten on the bottom side help keep the shooting board flat.



Boards for daily work

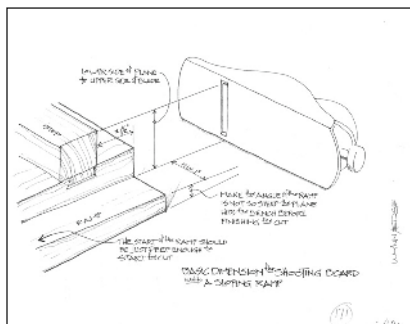
I use two shooting boards for daily work. I have chosen to use a sloping ramp, which does compromise the board's capacity, something which I only occasionally regret. Otherwise their only difference is their length. The shorter one has a working length of 12in. This size handles most of the work I need to do with it. I've made a longer one, with about a 21in working length that I use largely for drawer parts. This size allows me to shoot the edges of drawer parts and trim the ends to fit, and on the face opposite the ramp (the normal underside), I've cut the restraining stop to less than 3/8in in height. This is high enough to restrain the shooting



board from moving when using the ramp side, but when the shooting board is flipped over, I can use it as a stop against which I can plane the faces of the drawer parts. I keep a batten cut square to the same thickness as the bed of the shooting boards to support longer pieces when trimming ends.

One last note, one which I suppose may solicit more conversation than any of the previous notes, is that I usually use a Stanley No.60 1/2in block plane or the similar Veritas block plane (slightly wider blade) on the shooting board. (I actually have a Stanley No.9, but that's another story.) The No.60 is big enough for most of the work I do on it. It'll easily do a 3/4in thick board, and it fits the hand pretty well for the job. If I occasionally do bigger work, I'll get out a bigger plane. You don't need a special \$500 plane to do this, though I have to admit to sometimes coveting that tool. You also don't need a big heavy plane. In fact, when learning, I think a heavy plane obscures the cutting action of the blade, suggesting that you can make a heavier cut than you really should be making.

Because of its weight the tendency is to get a running start to overcome its momentum. It's a light cut that's needed (though when first starting to trim an end you may be misled by the end's irregularity). It usually takes me at least the first end to get the blade set properly. Don't take a running start, crashing the plane into the work, or worse, chopping away at it. Put the plane to where the blade engages the work then push steadily and feel the shaving come off. If the blade is engaged and you can't push it, it's because the cut's too deep. Back the blade out a trifle and try again. But, and this is an important but, your blade has to be sharp to do this. Did I say sharp? I'm sorry, I meant to say SHARP, and I mean really SHARP!. Sharpen your blade before starting this work! Unless your blade is sharp, this process won't work, no



process with a work, no matter how expensive a plane you use. Work with a sharp blade and the shavings, finish, and speed will give you satisfaction you may not have experienced with a plane before.

Visit Scott Wynn at
scottwynnatelier.com
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The Edge

TOOLS & WORKSHOPS



A Guide to Spindle Drilling

Designing jigs for simpler, faster chairmaking took Kyle Barton quite by chance he tells *Quercus*

The common techniques for drilling spindle mortises in chair arms and bows have generally required a steady hand and good hand-eye co-ordination. So says Kyle Barton, and according to the Texan chairmaker, his new Drilling Guide makes boring those mortises simpler, faster, and more accurate. “The funny thing is,” he tells *Quercus*, “I was never really interested in chairs,” adding that he was into woodworking science as a teenager. “I never had access to tools or a workshop until I bought my first house in 2001.”

Kyle outfitted his workshop and started woodworking as a hobby from 2006 onwards. His chairmaking path opened more recently by good fortune. “I just happened to attend a lecture by Peter Galbert on Windsor chairs, and quickly realised I needed to take a class with him, and it’s been nothing but chairmaking since then.” Designing his Drilling Guide was just as unlikely as becoming a chairmaker in the first place. “I just kind of fell into it. I was looking to simplify the process of drilling mortises



Using the Spindle Drilling Guide to drill the spindle mortise in the bow of a balloon back Windsor chair

into legs for stretchers for a chair I was making.”

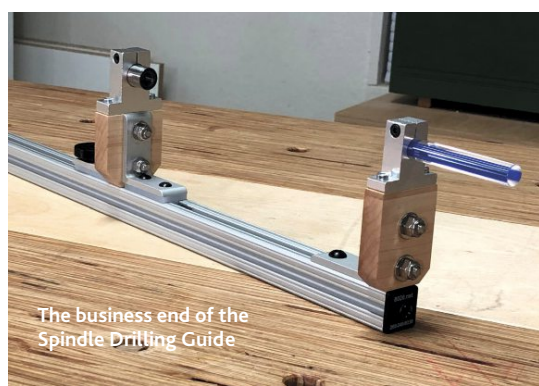
The bones of the Drilling Guide, Kyle explained to us, are an aluminum rail, and two ‘Carriages’, one fixed and the other movable. The fixed carriage holds a 12mm

acrylic rod. This rod will easily fit into common 1/2in spindle mortises in chair seats. The movable carriage holds a drill bit bushing and can slide up and down the length of the aluminum extrusion. It also includes a brake that will fix

the carriage anywhere along the length of the extrusion. The drill bit bushing is aligned with the 12mm rod which results in dead accurate spindle mortises. Drill bushings are available in 1/2in, 7/16in, 3/8in, 11/32in, and 5/16in sizes.

The ‘offset’ design, he says, allows you to drill spindle mortises centred on stock up to 6in wide, and from 5in to 30in above the seat. “Most importantly, the design allows you to drill blind spindle mortises from underneath as you might need to do for crest rails or other non-chairmaking operations, such as casework, stairs, etc...” Since posting about his first chairmaking jig on Instagram a couple of years ago, Kyle says “several people have reached out to me about buying one. Since then I have been designing and making tools and jigs, and I also sell custom-ground drilling bits. In fact we will be releasing some new types in the near future for general woodworking as well as chairmaking.”

For details visit kbartontools.com, @barton.kyle on IG, or ‘Kyle Barton’ on YouTube.



The business end of the Spindle Drilling Guide



Side view showing the fixed and moveable carriages of the Spindle Drilling Guide

Plane Speaking in Canada

In our latest Q&A with toolmakers we interview *Ryan Thompson* of RT Toolworks

Ryan Thompson makes beautiful wooden planes in Ontario, Canada. The materials are selected for the best quality and longevity of the plane, the wood chosen for straight grain, and as quartersawn as possible to resist wood movement due to humidity changes. His favourite is hard maple for being tough and stable, and wearing well over time. He says 98% of the process is done by hand-tools, 95% by just chisels and gouges, and he takes great pride in his work. He is always learning or inventing new ways to perfect and speed up the process, but will likely not veer away from hand work. "I very much enjoy making hand tools and find it only too fitting that they are made with attentive hands themselves."

What is your philosophy of being a toolmaker?

RT Create something. Anything at all. We crave creativity. The ability to express ourselves through making is ingrained in us, and we are better for it. I've been a carpenter for nearly half my life, but a maker since curiosity took hold of me. Making is joyful, frustrating, gratifying, enraging. Making is every emotion we have poured into a thing because it is us, but it is ultimately a fulfilling experience. Failure is as much a part of the experience as success and both should be considered a learning experience.

How did you train as a woodworker?

My apprenticeship as a carpenter started in 2004 in Ontario, Canada, with a basic carpentry class. My instructor Dan Barrett (an accomplished planemaker, although I didn't know that at the time) was very strict and didn't accept any bull from his students. Strict, but fair, and clearly he knew what he was doing. It felt like I was in bootcamp getting ready to be deployed, and enjoyed every moment.

Did you learn much about tools?

We spent most of a day sharpening one chisel, and when we thought it was good we were told to go back and do it again, but properly this time. Various types of joinery were practised with hand-tools as well as machines. Geometry was especially interesting and was expected to be executed with precision.

How much of your training was theory and practice?

Residential construction was taught through textbooks and tests. There was a lot to do, and we had homework everyday. Dan expected our full attention while he was teaching and some fellow students thought he was too tough on us, but I came to realise it was not some kind of punishment, he truly just wanted us to succeed. All this was meant to prepare us for the construction site where lateness is not tolerated, and you are expected to be your best regardless of how late you were up last night. I don't



know that I would still be a carpenter today if it weren't for Dan's words of encouragement.

How do workshop and site work contrast?

Working on a construction site is... different. It takes a while to become accustomed to all the potential dangers in your surroundings. All work can be done safely (within reason) but your eyes become attuned to scanning as you walk through so you don't hit your face off that 2x4 protruding out of that scaffold, or get run over by that truck that can't see you as he backs up. I tend now to see 'non-construction' people as civilians. You can immediately tell who has experience on the job by how they walk, talk, what they wear, but mostly it's the expression on their face, a certain lack of fear combined with awareness of danger (or maybe simply a look of 'I'm sick of this place').

Was it what you expected?

When I was in school we were told there is a 95% drop-out rate from starting an apprenticeship to becoming a journeyperson (roughly four years). Construction is a tough environment and it's not for everyone, but for those who persevere it will change you and the way you look at the world. You develop confidence in yourself and your abilities, an attitude that you can learn to do just about anything.

I worked doing residential home improvements for my first



Carving the cove in a recessed Cupid's Bow (above). The English and Dutch styles are inspired by David Snicker's work. A York pitch double iron coffin smoother with hand-carved Fleur-de-lis (left)



year. They were random jobs like "Stain this deck" and "Lay this laminate flooring", before work then started to run dry. My boss knew a guy, so he gave me his number. That led to a two-year stint of installing commercial door hardware, which was really interesting. My foreman at the time used to work for a millwork company (doors, wood panels, trimwork, cabinets) and when work ran dry again he took me with him back to his old employer.

Was he able to help?

He is a great friend and mentor now and a massive influence on my thought process for work. "Adapt and overcome," was his catch-phrase and it reverberates in my head everytime I encounter an issue. You need to be able to think outside the box and leave your comfort zone to solve problems as a carpenter.

How did things develop?

In Winter 2007 I started with my current employer installing finish millwork. I get to do high end finishes with wood panels that tie into door frames or cabinets, or curved wall and ceiling panels. Whatever crazy design an architect dreams up, we make reality.

Have you continued your learning process?

I finished my apprenticeship with the Red Seal test. This is Canada's national qualification of carpentry and means that you are recognised across the country as a qualified carpenter, and

can be challenged by an apprentice in their fourth year before they have the required hours to become a journeyman. Within a couple years I became a foreman with carpenters to lead, some of whom had as much experience on the job as my age (now there's an interesting experience). Everything was happening so fast, so many new skills were learned, so many new and interesting jobs. Surely this must be what the elite carpenters of old must have gone through! I've completed countless jobs since then and there is one thing that rings more true than all others: We have lost our way as carpenters.

How do you compare hand-tools and power-tools?

I'm an advocate of changing with the times, learning to work with unfamiliar material, new techniques, and more knowledge is good. Not at the expense of losing older skills and knowledge, which is the downfall of the current industry. As a finish carpenter you should be able to build that door, build that cabinet that you just installed. You should be able to saw to a line by hand and chisel out hardware rebates. I'm not saying don't use power-tools, I'm saying that 100% of all apprentices I've trained over 13 years have looked at me like I'm bonkers when I tell them to use their chisel or a handsaw because the power-tool would not work for what they were doing. We have become so specialised that we are basically glorified installers, not carpenters. All aspects of carpentry have become this way. You're no longer a carpenter,

you're a floor installer, or a roofer, a formworker, scaffolder, a millwork installer, trim guy, door guy, handrail guy, framer, etc... Granted, that's a lot of info to learn but the point is you're told that you can only do one thing, only good enough to do that one thing. You can be more, I promise you. Step out of your comfort zone and try. You only fail if you don't learn from your mistakes.

How do you look ahead?

I refuse to believe that this is the future, that this is progress. I will also not perpetuate this process by giving in. I realised my own shortcomings and did what I could to improve my lack of hand-tool skills over the last decade. Books, practice, Internet searches, practice, failure, practice. I want more than anything for my apprentices to succeed as well so I encourage them to push their limits, to try things that may be above their current skill level. If they excel that's great, if they screw up then they also have an opportunity to learn how to fix that.

What led you to start making planes yourself?

In 2018 in my pursuit of personal growth I decided to use some beautiful curly maple for a project, and the trouble was I could not plane it without deep tearout. I read that a 55° pitch works wonders on grain like this (and it certainly does). So enter the planemaking. I had never built a plane before and decided on the Krenov type. It took about 30 hours to make, but mostly that was because I'm a perfectionist as they're not complicated. It worked fairly well, and took buttery shavings from the maple. As usual, I thought I could do better though. I took this plane to Dan to get his thoughts. He said some kind words (more than it deserved) and then steered me in the direction of traditional planemaking, a more complicated and technical form but superior in many ways.

What happened next?

I spent about four months researching and studying the traditional form in every spare minute I had before I got the nerve to dive in. Every plane since then has been a new learning experience whether it's single iron, double iron, jointer, jack planes, coffin smoothers, compass planes, there's much to learn and perfect. Seeing as there are only so many bench planes I could justify keeping, and I was confident in the quality of them, I decided to offer them up to others so that they could experience a well-made wooden plane. In early 2020 RT Toolworks was born.

Has making planes been stimulating?

I make planes because it is my way of expressing creativity. I enjoy making something that in turn will be part of more making, more expression of someone's self. It's important to me that my planes be a joy to use for their part and will enrich that experience. Countless hours of thought and trial of ergonomics were and are endured (enjoyed?) before each plane is begun. The goal is not to make the best plane, but to make the best extension of oneself. The best tools are not just well made, there is feeling attached to them, something that is difficult to explain to anyone else. These tools feel like trust, the way you trust your hand not to crush something fragile, or the belief you could crush a rock if you were in the mood. They inspire confidence. Confidence is the best ally in creation and the tools we use should allow that to flow. They should fit our hands well, and do what is expected of them. A tool should be intuitive when picked up, subtly telling our hand how it could or should be held. Simple. Effective. Trustworthy.

It is surely not just about the beauty of a plane?

While a tool should be simple and intuitive in use, it is not usually so in its creation. We are all different, and therefore each plane I make is slightly different. Handles are sized to suit the user. Style and blade pitch can vary depending on the user's needs. Materials



Wedge scrollwork in progress (above)



are methodically chosen for stability, strength, beauty and longevity. I make traditionally-constructed solid body planes as (in my opinion) there isn't anything to improve on in this method. The single-piece body, carefully selected for grain orientation, allows the moisture in the wood to pass freely through the body unobstructed by glue lines. This translates to the wood reaching equilibrium with its environment evenly and creates no meaningful warping in a shop setting.

Is there much to be said for wooden planes?

A wooden-bodied plane has some advantages over their metal cousins. The most obvious difference is they're much lighter which makes longer planing sessions easier. The wood itself also absorbs vibration which when coupled with a thicker iron makes for a very smooth cut. The wooden sole has two main benefits. Wood on wood allows the plane to glide freely across the surface as if both were waxed. The wooden sole also burnishes the surface following the cut leaving your fresh surface glassy in appearance. Maintenance is also easier as there are fewer components and the blade is the only place to worry about our mortal enemy: rust. The sole has to be tuned up on occasion, but lapping a wooden sole is a joke in comparison to metal. I find blade adjusters unnecessary and opt for hammer setting. Setting by hammer takes a few tries to get used to, but is actually easier than it sounds and very quick when you get the hang of it.

And each of your planes is unique?

While I believe a traditional wood plane is optimal in its



European pear is used frequently now



construction and appearance, I prefer to put my own spin on the aesthetics. I'm influenced by classical instruments, nature, futuristic vehicles, and many more obscure interests. My style continues to evolve over time but always seemingly steered in a direction that makes machine work impractical, if not damn near impossible. Being flexible on design allows new doors to open, new paths to explore that may take dramatic turns or simply small tweaks to improve an already great idea. It also helps to have good friends that will give you the truth instead of telling you what you want to hear.

What are the advantages of a traditional wood-bodied planes?

Weight. Wooden planes are lighter than their metal counterparts, usually around one-quarter to one-third of the weight. This translates into less energy expended while cutting, allowing you to work for a longer period of time more enjoyably. Some prefer a heavy plane but with a sharp blade it is unnecessary and a hindrance. Ergonomics. I pay special attention to how the plane is held and how it feels in the hand. All my planes are hand made and meant to be used extensively, therefore they are shaped to feel like an extension of yourself. Power distribution from your body to the plane is efficient when the tool fits your hand properly. This applies to both handled and un-handled planes.

Does that affect the way planes work?

A wood-bodied plane absorbs vibration while cutting. We have all experienced 'chatter' in the use of handplanes. This comes from improperly-fitted parts of the plane creating vibration. The more

parts, the more places for vibration to form. My planes have only three components: body, blade and wedge. All are painstakingly fitted precisely together and vibration is virtually eliminated resulting in the smoothest cut possible.

The blade depth is adjusted by striking the back of the iron to increase the cut, or the strike button to reduce cut or remove the iron and wedge. To someone not used to this process it can seem a bit intimidating or even crude, but I promise it's easier and faster than you think.

I only use the highest-quality steel in my planes. The blade is the heart of the plane and the most critical component. If you have a vintage iron that you would prefer to use please send me an email and we can discuss whether it would be suitable to a particular plane.

Does the wedge matter?

There are many reasons planes were made in a traditional manner. One major factor is how the blade is held. Traditional abutments are a difficult process to perfect. Much time is spent to be sure the wedge is perfectly fitted to both the iron and the abutments. When done right the hold on the blade is very strong and the setting of the blade will not move in use. My planes are tested during construction, after its complete, and again right before its sent to you. I do not take chances

Ryan Thompson can be reached through his website rttoolworks.com or through Instagram @ryan.t.thompson where he frequently posts process pictures of planes he is working on.

Taking the Lake Erie Way

Three authors reveal their fitting of Lake Erie hardware, starting with *Drew Wallace's* bench vise

Lake Erie Toolworks are based in Erie, PA, USA and were founded in 2008 by Nick Dombrowski and his father Jeff and his wife Rachel. The intention had been to build benches, but they were soon producing high-quality wooden vise kits. "The vises were a lot smaller to build than workbenches," Nick says, "and since the original Lake Erie Toolworks was located in my parents' basement, the vises were much easier to carry up and down the steps." Nick took extensive coursework with Ernie Conover to learn hand-tool joinery, and has also completed a Master's degree in mechanical engineering.

Although the business does carry some metal vises from Milwaukee Tool & Equipment, their own maple vises are made to be strong, with the wooden thread more efficient than metal ones. "Our standard wooden vises move exactly 1in (25mm) for every two turn of the handle. Most metal vises (with some exceptions) take four to six turns to move 1in." All the vises can be retro-fitted to existing benches, and Lake Erie have customers who would like to share their experiences.

For a Smaller Bench

My vise was built to accompany my smaller workbench designed as a planemaker's or toolmaker's bench, *explains Drew Wallace of New Orleans, Louisiana*. The vise found its inspiration from the antique La Forge Royale carver's vise. My design is nearly all wood construction with the exception of a few machine screws for the garter and the assembly for the hand wheel.

I had the advantage of using exceptional material that had been air-dried for many years. The heavy stock is hickory from a medium sized slab that was discounted because of bug holes. By cutting it into smaller billets, I was able to dodge nearly all flaws and yield beautiful stock for this vise. The other wood specie used is ipe which machines surprisingly well with sharp tools, but best of all, complements the hickory. The jaws are lined with suede and the finish is conversion varnish. The knobs on the handle are *lignum vitae*, as is the hub of the hand wheel. Threads are tapped directly into the *lignum* hand wheel, which was a pleasure to execute with the natural oils of the wood lubricating the whole process.

Dimensions are 6in wide, 10in tall, and the vise screw is 24in long. The height



Terry Asselstine's workbench with leg and wagon vise

elevates workpieces above the bench top to a very comfortable height. The big wood screw means that the vise moves quick, grabs hard with little to no racking, and parts can rest on the threads without getting grease on them.

The nut from the standard [Lake Erie] kit is captured inside the moving jaw assembly and I had to take extra care to accommodate wood movement between the different types of wood and different grain directions. Parts were dimensioned to their final sizes over the course of weeks to ensure stability post glue-up. If I were building it again, I would use a T-shaped track for the moving jaw assembly. The dovetail is nice looking and maybe the simplest in design (which is always a goal). Though, to execute a smooth functioning vise with little slop in the components, the tolerances in the dovetail track were around ± 0.001 in. This means that it is a little stiff at 100% humidity and a little loose at 30%.

The vise gets daily use in my shop and has become more than a novelty, playing a vital role in several difficult joinery tasks, and of course, carving.

Workbench Leg Vise

I was attracted, at first sight, *writes Bill Leonhardt of East Patchogue, NY, USA*, to the 21st Century Workbench built by Robert Lang and featured in a *Popular Woodworking* magazine in 2008. I finally



got an opportunity to build this bench in the beginning of 2020 and, fortunately, procured all the materials just before the Covid pandemic hit. It took me four to five months to complete and the final dimensions are 75in long (not counting end vise) x 30in wide x 34.5in high. The top is 3in thick and the final weight is about 312lbs. The bench material is ash, and a nice feature is the fact that the top is in two halves and each half is narrow enough to fit through a normal 13in planer.

One of the reasons I am attracted to this bench is the fact that the base uses both upper and lower stretchers, which means it does not use the top for support or to stiffen it. That is important to me, because my use of the top is an evolving philosophy. With an 'independent' base, I can reconfigure the top in the future if I choose to and still maintain the stiffness and rigidity the base offers.

I deviated somewhat from the original bench design to accommodate my space



Drew Wallace's bench vise (above) and Bill Leonhardt's leg vise (right)



limitations better and to incorporate a leg vise in place of the original twin screw. I also changed the method of connecting the long stretchers to the legs so that the bench could be broken down and transported more easily. I opted for a leg vise with wood screw in place of the double screw vise and I used a quick release vise I had on hand for the end vise.

In building the leg vise, I used a precision shaft and linear bearing in place of the traditional multi-hole plate at the bottom of a typical leg vise which eliminates the need to shift the spacing pin for different material thicknesses. I chose a Lake Erie wood screw because it has a much coarser thread (than a metal screw) which means less turns for the vise travel. The combination of the precision shaft and wood screw makes for an exceptionally smooth operating vise.

In applying finish to the bench, I wanted to protect the wood, but, at the same time, I wanted not to have a slippery surface for working. In the end, I chose to use two wiped-on coats of the following mixture: 1/3 mineral spirits + 1/3 polyurethane + 1/3 boiled linseed oil. I am pleased with

the way this turned out as I got the desired surface. Note that the tool trays can be reversed to make one continuous top or removed to make clamping on one of the top halves easier. Additionally, I can saw wood that is held in the end vise 'right-handed'. Never had this been possible before since a typical face vise is at the left end of the bench. At this point, I am very happy with the current configuration and I anticipate no changes. I do however, like the fact that I can easily reconfigure the top in the future if I change my mind.

Shaker Leg Vise

My Shaker workbench is based on an historic piece, writes *Terry Asselstine, of Victoria, British Columbia*. This bench was built on the design by Ron Brese. It is 25in deep, 84in long and just under 36in high. This monolith is around 400lbs. The carcass is 3/4in Baltic plywood and poplar. The top, leg vise and deadman are western maple. The top is 3in thick with the facing overhang 4in. I used aniline dye on the vise screws. There are only a couple of changes from Ron Brese's plan. The extra overhang was needed to accommodate

the wagon vise. This change led to the deadman rail needing to come out the same distance. I raised the rail so my feet can easily shuffle under it. The increase in overhang led to the stationary portion of the leg vise also moving out. A good part of the leg vise nut is captured within this thicker piece. The top of the bench locates itself at the front corner where the overhang and wagon vise form a natural 90°. I put a 1/2in brass rod in the top of the stationary part of the leg vise and the underside of the top. This was done to maintain registration between the top and the leg vise with wood movement. From there back the top floats.

There was no question about the screws being anything but wood. Through time they have proven themselves. There is the perception that metal would be better. But looking at the design parameters, the expected demands, sugar maple is beyond adequate. And wood is what we do. I'm aware that wood is not indestructible and pay attention to the moment. Just the place I want to be. These are very well made screws that will outlive me.

The hardware for both the leg and tail/wagon vise are very well made and function beautifully. There is such an affinity with the fact these are wood. Why would I want anything else? Steel is wonderful in its indestructible nature and perception of lasting forever. But wood is from a living source that's time is fleeting. It's soft, it's warm it needs your awareness to endure. It has its limits but they are well beyond the use it has been crafted to fulfill. Why would I not give the vise the same attention I give my chisels? The vise doesn't demand anything more than other fine tools ask. It's so kind to the eye and hand. Thank you for a very fine product.

Visit the Lake Erie Toolworks website lakeerietoolworks.com or follow them on Instagram @lakeerietoolworks.



Bill Leonhardt's split-top Roubo workbench



Terry Asselstine's leg vise

Choosing a Block Plane

Arguing in favour of the block plane, *Derek Jones* points out that you can do well with a few blades

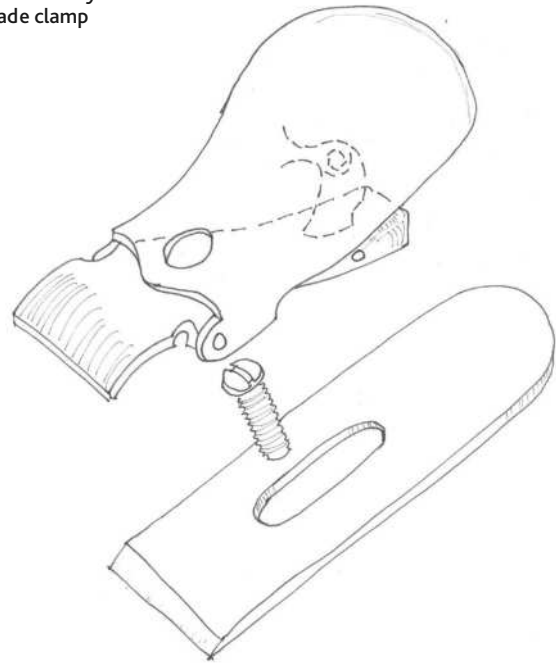
In every walk of life it seems some bright spark has come up with a catchy phrase to condense all you need to know about a given subject into one pithy sentence. Take the three Rs for example: reading, writing and arithmetic. I've recently been delivering the core principles of responsible design to the next generation of product designers using the 6 Rs: reduce, recycle, reuse, refuse, rethink and repair, and although it appears a bit windy at first, it's a great checklist to come back to throughout the process. When I sat down to condense all I know about owning and using a block plane I started to think along the same lines. Then I counted the number of block planes in my tool chest (one) and realised there are probably two types of owner; the one that buys tools to use and the one that buys tools to collect. The advice that follows is intended for the user.

Sounds obvious I know but the first thing you should consider when making any tool-related acquisition is the nature of the projects you build. Are they mostly small items that you can build on your bench as opposed to those that come together on the floor? Do you build in a workshop environment or on site? Get the answers to these questions nailed down first and you're well on the way to completing the heavy lifting in the decision-making process. Next, take a look in the mirror, have a look at your hands for a moment and make a connection between your physique and the scale of the projects you intend to work on. There's a relationship to be found between the two here and in another article perhaps I'll elaborate more on that subject. Under no circumstances, now or in the future, even consider checking the contents of someone else's toolchest. In fact make this your opening tool acquisition mantra: Thou shalt not covet the contents of thy neighbour's toolchest. You'll likely confuse it with research and it's not.

Like the people that use them, block planes come in varying shapes and sizes. The sole dimensions for a majority of block planes are typically around 6¼in x 1¾in (165mm x 44mm). Makes and models extend in both directions to accommodate a variety of features such as high and low bed angles, blade adjusters and different mechanisms to secure the blade. These include cam lock, screw wheel or lever style clamps. The distinguishing feature you should be most interested in is the bed angle or 'pitch' of the blade; ie. the angle at which the blade is presented to the workpiece and therefore the wood fibres it's cutting. It is widely accepted that a low-angle plane will tackle end-grain more efficiently than a high angle-plane (these are generally referred to as having a regular pitch, btw). But because there's no such thing as a free lunch, this advantage comes at a cost. You might encounter tear-out when using it in the direction of the grain. If I had to underline the key word in the last sentence it would be 'might'. It's rare to the point of hardly worrying about when you can usually plane from the other direction or at least skew the plane to avoid it happening altogether. But as I like to cover all bases there are ways to combat this and I'll come back to them later. For now though, just think of a high-pitched block plane as a smaller version of a standard bench plane and you're on the right track. It will do all the things your bench plane will do but in a confined space. The only thing you haven't got, which would make planing end-grain easier, is the mass of a larger plane.

A feature all block planes have in common is that the blade is presented with the bevel facing up and as such they don't

The lever-style blade clamp



require a chip breaker. The physics behind this is that the blade is clamped firmly against the bed much closer to the cutting edge of the blade than would be possible with the bevel facing down. All planes work better when you've eliminated the possibility of vibration (or chatter as it's often referred to) and given that this is the block plane's main advantage it is crucial that the clamping force available to you is sufficient and reliable. And here's where we'll consider the pros and cons of each style of clamp.

The cam lock

Pros Quick and easy access to the blade for maintenance.

Cons Prone to wear over time and not reliable long-term. Beware on pre-owned planes as the mechanism can be worn. The pressure is either on or off, sometimes making fine blade adjustments harder than they need to be.

Lever clamp

Pros Quick and easy access to the blade for maintenance.

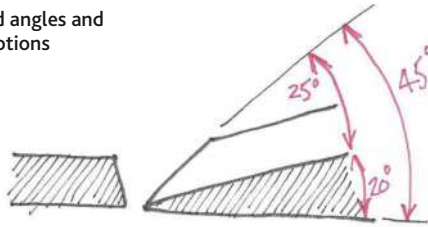
Cons Prone to wear over time if used with an excessive amount of pressure. Beware on pre-owned planes as the mechanism can be worn. The pressure is either on or off, sometimes making fine blade adjustments harder than they need to be

Screw/wheel clamp

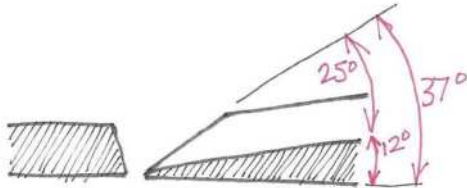
Pros Less likely to fail over time. Pressure can be reduced slightly to facilitate adjustment of the blade or increased as required.

Cons Can be loosened accidentally during use on models where the wheel extends beyond the lever cap itself. Can be awkward

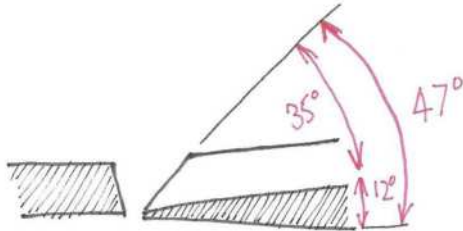
Typical bed angles and grinding options



A standard block plane with 20° bed & blade ground at 25° equates to the same effective pitch as a regular bench plane. Use it in the same way

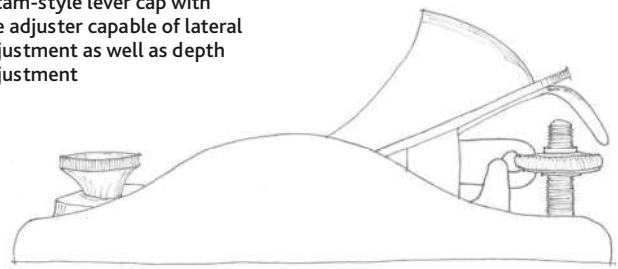


A low-angle block plane with a 12° bed and blade ground at 25° equates to 37° effective pitch and suitable for all your end-grain work

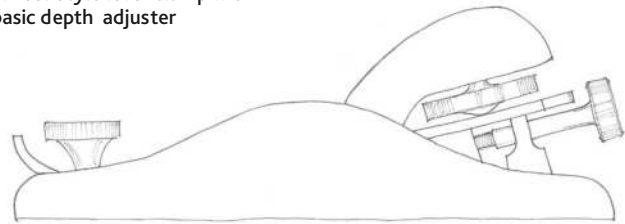


A low-angle block plane with a 12° bed and a blade ground at 35° equates to 47°, so slightly more capable when you encounter awkward grain. A blade ground at 38° or more might be more effective but it will take a lot more effort to push it

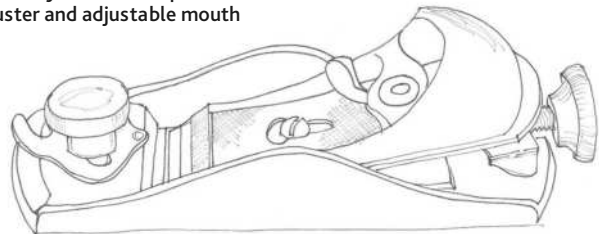
A cam-style lever cap with the adjuster capable of lateral adjustment as well as depth adjustment



Wheel-style lever clamp with basic depth adjuster



A cam-style lever clamp with in/out adjuster and adjustable mouth



to access for large fingers on some models where the wheel is contained inside the lever cap. Overtightening of the clamp can distort the plane body and knock the sole out of flat. It's possible to shear the head off the lever cap screw if overtightened.

Tear-out and cons

There are work-arounds for all the above 'cons' of course and millions of woodworkers are happy working with minor inconveniences so don't rule out one design over another without experimenting first. One of the ways woodworkers attempt to avoid tear-out is by closing the gap between the sharp edge of the blade and the front of the mouth where it protrudes from the body. This is where the shavings are forced during planing. Pundits the world over have attempted to make sense of this process, often alluding to scientific data, to arrive at an incontrovertible formula for this. Fortunately, for the makers of planes, there isn't one but as it adds to the general discussion their findings are worth noting. There is something we (mostly) all agree on though, the smaller the gap the better. Which coincidentally brings me onto another feature of the block plane; the adjustable mouth.

There's one job in particular that's suited to the block plane and that is softening or chamfering edges. Retract the blade to take a fine shaving and close the mouth up to a whisper and you can take hair-like shavings off an edge. Open the mouth and advance the blade forward for a heavier cut and you'll be able to reduce an arris to a 5mm chamfer in a couple of passes. It might not look pretty at first, but you can always adjust the settings and go back to a fine cut for one or two passes and achieve a silky smooth

finish. For those of us that like to try our timber before we buy it, we can take a block plane to the timberyard and test the area of a board in a couple of places without doing too much damage. Probably best to ask first though.

So far we've only considered the hard features that distinguish one block plane from another, but there's a lot you can do to tame, tune or expand the repertoire of any block plane. It starts with the blade. When a blade is oriented upwards in a plane body it lends itself to being ground at angles that suit the nature of the work. And as long as you don't obsess about the numbers too much you can make a low-angle block plane perform like a high-angle one, all you need is an extra blade (or two). And in the interests of complete transparency, I admit to owning three. One ground at 25° for end-grain work that hardly ever gets changed; one ground at 35° for working with the grain if the 25° isn't playing nicely; and another at 25° ground with a slight camber for occasional smoothing, although I can't recall ever using it.

Each has a secondary bevel of a couple of degrees or more. A task not generally associated with block planes because they're not thundering great jointers, is finishing off the edges of boards that are to be edge-jointed. The main reason I grind my block plane blades with a straight edge is so that I can take a quick swipe on the edge of boards to eliminate any discrepancies in the glue line. In theory a jointer should leave you with perfect edges but a block plane set to the finest cut possible and razor sharp will often prove otherwise. Incidentally in reference to my comment earlier about optimising physicality with tool size, my jointer of choice is a No.6 and not the usual No.7.

Upwardly Mobile

Rifling through our post box, inbox and following, *Nick Gibbs* enjoys feedback, questions & thanks

As is conventional we turn to our inbox (which used to be a post box) first to learn good news from Jamie Seaton who writes: "I really like a magazine that doesn't assume we have the space & deep pockets for a tablesaw, thickness planer, router table and Domino jointer. I would love to know more about the mitre saw I have inherited. It's the largest back saw I have seen. The jig is all metal with oil damped pillars and a clearly graded crescent adjuster for setting the angle." The box is a Langdon by Millers Falls, says @thesawwright. "The saw is likely Disston made, but might have a Langdon/MF mark."

ILLUSTRATION BY OWI GATES



We found this knee shave made by Kiyoshi @hinode218 on IG. Looks like a great way support spoon carving. It is International Men's Day on 19th November. Visit ukmsa.org.uk (left) for details on the Men's Shed Design & Build Challenge



We are reassured to hear from Martin Chapman that the PocketMags digital version of QM is clear to read. "Navigation is easy: swipe to the left or right to go forwards & backwards, or to load a list of thumbnails, and you get notification from PM." Phew.

Meanwhile Steven Columbus from Michigan was intrigued by Jenny Bower (QM04, @jbowerengraving, who has offered to personalise the LN trophy for Young Woodworker of the Year): "I was curious because Jenny & her daughter were on the cover. I am trying to get into woodworking and am looking for a magazine with a sprinkle of shop tips that's got no advertising." Perhaps our new Mak at the Back (opposite) will offer some of those tips you want. Thank you Jenny for giving us a plug for QM08 recently: "*Quercus* is published with no advertising. No easy task in today's world."

Our regular contributor, Rex Krueger was doubtless chuffed by the followers who saw him on the cover of QM08. "That's awesome, Rex," writes @patsheadotcom. "That is an artist's rendition of you, and fantastic one at that." The artist @leejohnphillips will be just as chuffed. There's a bit of reflected glory for ourselves. "What an honour and well deserved," writes @pinehavenwoodworking.

Another to receive some appreciation was Giorgio Nicodemo (@the_attic_woodwork) for his labours and

inspiration for woodworking in such a small space in Verona. "Less space, right tools, more skills," wrote @lofoio. "I loved the article," added @cedar_23. woodshop. "I learned the same way. My father wasn't terribly handy, but his father made tools." Then blogger @start_woodworking's said "How cool is this!!! Nice job."

Barbara Jones (@barbiwoodshop, below) has to confess that Norman Billingham was right to observe the protruding screws on the Moxon vice shown in QM07. "I have got poked several

times by the Moxon vice rods," Barbara confesses. "I'm scared that if I drop something and squat to pick it up, I will pierce my skull on the way up."

Of course we do our own bit of following. Next issue we are planning to feature Paul Sellers. On Instagram @commonwoodworking Paul recently asked followers how they use their workspace, prompting a question from @pjtm50 about router planes. "Are those new router planes hanging on the shelf?" To which Paul replied: "No, these are not new ones, but there are some new ones on their way." Watch out in QM10 when we hope Paul will reveal more.

If you visit @wicks_woodworks you will find a delightful video that John Wicks has made, working with a young woodworker. "Throwing it back to the exact moment my shop helper became the new King of our garage workshop." Perhaps one day junior will enter the *Quercus* Young Woodworker of the Year.



Tricks for Better Cramping

Recognising the inadequacy of cramps for some jobs, *Charles Mak* is inventive during assemblies

Woodworkers are familiar with the saying “You can never have enough cramps.” That, however, tells only part of the story about cramping challenges, because often cramps alone may not be enough to deal with some oddball glue-ups. Cramping is about applying the right pressure at the right point. When cramps by themselves cannot do that, cauls can often be the solution. Some cauls can be purchased, such as the Gyrojaw (above), but in many cases, you will need to make your own. Little known to many, cauls are not just for glue-ups, but can also be useful in other tasks. While cauls are usually fabricated to handle a specific job, I do not throw them away after their use. Often, I can reuse them in similar glue-ups, or modify them to suit a new angle or shape. After all, cauls are just like cramps – you can never have too many of them!



01 HANDSCREW CAULS



02 ANGLED CAULS



2 Regular cramps apply pressure at 90° to a joint or surface. When a joint is not right-angled, I use cauls [donkey's ears] at a complementary angle to align the cramping force. For a speech bubble wall shelf project that I built, I employed such cauls to assemble the cases

1 The non-marring jaws of handscrews and the ability to adjust them to various closing angles make handscrew cramps ideal cauls in certain situations. One example is the use of a pair of handscrews with a regular long clamp, say, to close up a split on a round table (right). A single handscrew (above) can also be used to direct the necessary cramping force such as gluing a loose leg to the pedestal in a tripod table

01 HANDSCREW CAULS



03 WEDGE CAULS



3 A protective ‘caul’ may also be used to deal with a dry-run that is finicky to disassemble. In the wall shelf example, I took apart the dry-assembled dovetail joints safely, with no risk of marring a surface or damaging a tight joint, by using a pair of wedge cauls

SQUARING CAULS 04



4 In the final example of using jigs, I present the squaring ones, which are battens cut to match the length of the key components of the build to be squared. After gluing up the loose joints in a vintage coffee table, I helped square up the table by adding a pair of temporary stretchers to the bottom of the legs. The battens ensure the legs on both sides are cramped parallel to one other. The notches (right) keep it from shifting under pressure

04 SQUARING CAULS



Scott Wynn shooting end grain
in his San Francisco workshop

