

WORKING WOOD BY HAND

JULY/AUGUST 2021 QM07
@QUERCUSMAGAZINE

Quercus

Stone Set-Up

Tips for Tidier Sharpening

Better Benches

Simple Upgrades by
Ethan Sincox, Rex Krueger
& Barbara Roberts

Big in Japan

Toolboxes, Joints
& Kohtaro Mori



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Kohtaro Mori: "I finish furniture with kanna and without any sandpaper"

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Richard Wile organises his stones for more efficient sharpening, while Sean Hellman mends a bandsaw blade & John Lloyd hones an in-cannel gouge

Better Benches

Rex Krueger shows how to make a portable low bench (p14), Ethan Sincox welcomes a budget bench (p36), and Barbara Roberts makes upgrades she's been avoiding

Big in Japan

Discover the remarkable work of Kohtaro Mori (p28), how to make Japanese toolboxes with Derek Jones & Anny Dubois (p20), the restoration of medieval joints by Dylan Iwakuni, and beginners making chairs in Sapporo

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Quercus

We are perhaps testing our title by featuring Sean Hellman's advice on mending a broken bandsaw blade (p42) this issue. That so many readers are likely to share his anger that sharp teeth are often scrapped when a new blade snaps, indicates we are justified in Working Wood by Hand (Mostly). Don't expect us to be testing planer/thicknessers, tickling joints with a disc sander, or replacing tenons with Dominoes, but moments come when power pays. And don't despair. Richard Wile will show you how a tidier sharpening station pays dividends on an edge and John Lloyd takes on the tricky job of sharpening in-cannel gouges.

It has been an exciting time since QM06 early in May, especially as *Quercus* now has a company stead. You can meet Muttley our mascot, who's already taken me to visit Westonbirt Woodworks, traditional joiner Richard Arnold and the remarkable charity, Tools For Self Reliance, on p55. TFSR take donated tools and prepare them to be sent to training partners in Africa. If you ever want to learn how to restore an old relic that's the place, but in the meantime you need go no further than flip through the pages of *Quercus*.

Nick Gibbs, Editor

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The Democratic Yurtsman

Remembering a remarkable man, *Doug Stowe* recalls the time he met Bill Coperthwaite making a yurt

I first met Bill Coperthwaite when a parent at the Clear Spring School had arranged for him to come to the Ozarks to help his son and other students at the school to build a yurt. As I arrived at the site on a medicinal herbs farm in southern Missouri, he was busy corralling the group of high school students to build a plywood yurt of Bill's design. Bill had conducted similar workshops elsewhere in the world and across the US, and was clearly in charge. As he gave out instructions to the kids his own hands were busy quietly working close to his own chest. I asked: "What are you doing, Bill?" He showed me a very small crooked knife and a branch of cherry, recently cut from a nearby tree, that he'd split and was carefully crafting into a wooden spoon. I was only with Bill for the afternoon and evening and he was very busy with the kids and the yurt, but he left a deep impression and he invited me to visit if I ever found my way to Maine.

In 2012 I was teaching a two-week class at the Center for Furniture Craftsmanship and had the weekend off to drive three hours up the coast of Maine for a visit to Bill's home outside Machiasport. Getting to Bill's house required a lengthy walk through the woods as he kept his own vehicle off site. The trail to Bill's house meandered over a boardwalk through marshy areas, while the portions on dry land were kept weed-free by layers of sawdust carefully hauled and meticulously spread, making it easy for folks to find their way, but long enough to deter most 'visitors'.

Bill was cooking rhubarb on his cast iron cook stove, tending to the normal concerns of his everyday life, tending a fire to prepare food. The stove was direct from Bill's redemptive spirit, chopped down to a lower height and re-purposed to provide winter-time heat, as well as servicing daily life in a cold climate. It was a chilly, rainy day in late June when I arrived and the warmth of the stove was welcoming.

Aged 83, Bill Coperthwaite lived alone off the grid, in a four-

storey wooden yurt of his own design and making. Each layer was symbolic as well as practical, the ground floor being his workshop for making tools, chairs, spoons and bowls, not to sell, but for demonstrating, for teaching and to satisfy his own curiosity about how they can be made. Among the tools were wheelbarrows of his own design to live remotely, without tractors to do the heavy work of hauling timbers, sawdust and supplies. Other tools of his own invention included the 'democratic axe', which was a hand-forged blade attached to a more conventional hammer. Block knives were mounted to stumps ready for immediate use.

With the yurt constructed in tiers, like a wedding cake, upstairs was smaller, the second storey lending itself to a simple, austere life. Bill's bedroom was on the third level, the fourth being a look-out over the land, symbolic of one's spiritual life as well as a way to exhaust excess heat in the summer months. There were books on bookshelves to be grabbed and read, at hand climbing up or down stairs.

I marveled at the man and his circumstances, living alone in a rugged climate, in a poorly-insulated home of his own design, and without the conveniences we all take for granted.

Simple living experiment

When I visited Bill, parts of his experiment in simple living were growing ramshackle and in need of repair. There were a number of hand-made wooden yurts on the site as well as a boat shed where Bill kept wooden boats he had built and a more modern canoe for trips into town for supplies. Bill lived a rugged life that he described in his 2007 book, *A Handmade Life: In Search of Simplicity*. He left a strong mark on those of us who fell within his sphere of influence and you can learn more about him through a website created by friends, insearchofsimplicity.net

In my own case, the crafting of simple spoon knives with my students at the Clear Spring School is but a part of his effect. When we first met, I was crafting my own educational program at the Clear Spring School. I hoped that *The Wisdom of the Hands* might serve as an example for other schools, illustrating the importance of hands-on learning for all students. Bill became evidence for me that I was on exactly the right track.

In the 1960s, with a PhD in education from Harvard, and having observed that civilisation is going to hell in a hand basket, clean energy being one of the important issues to resolve, Bill scoured the Maine coast for a tidal basin to take advantage of high tides to supply hydropower. A mill pond at Machiasport captured his interest and he managed to acquire 500 acres of land, both sides of the tidal race with the right to use the twice-daily power of 16ft tides as millions of gallons rushed through.

But as Bill worked on the development of his property, he discovered that the power of his own body made the tidal pool unnecessary. He harvested by hand the white pine that had been allowed to grow for over a generation, built many yurts, and became an advocate for a more simple, more direct life. He travelled all over the world studying indigenous cultures and their tools and discovered a few things that we must remember and pass along. Bill Coperthwaite died in a car crash in November 2013, and now his tidal pool and home site are preserved for future generations in a land trust and as a teaching site.

Visit www.insearchofsimplicity.net to learn more about Bill.





Bill (below, resting) was aged 83 when he helped students build a yurt (above) in the Ozarks. Using his block knife (left). His 'wheelbarrow' for moving timber and materials by hand (bottom)



A Simple Life in Quotes

You can learn much about a person by what they quote, as is the case by Bill Coperthwaite in his book, *A Handmade Life: In Search of Simplicity*



To require little is better capital than to earn much. The need to earn much enslaves a man, while ability to do with little makes him free.

Fridtjof Nansen

The professionals guard their language jealously to make themselves indispensable.

Christopher Alexander

"Believe me my young friend," said Water Rat solemnly, "there is nothing, absolutely nothing, half so much worth doing as simply messing about in boats. Whether you get away or whether you don't, whether you arrive at your destination or whether you reach somewhere else or whether you never get anywhere at all, you're always busy and you never do anything in particular."

Kenneth Grahame

My teaching is a raft whereon men may reach for the far shore. The sad fact is that so many mistake the raft for the far shore.

Buddha

The scholar may be sure that he writes the tougher truth for the calluses on his palms.

Henry David Thoreau

I have spent a vast amount of my time designing furniture, wallpapers, carpets and curtains, but after all I am inclined to think that sort of thing is rubbish, and I would prefer for my part to live with the simplest white-washed walls and wooden tables and chairs.

William Morris

When love and skill work together, expect a masterpiece

John Ruskin

A Handmade Life: In Search of Simplicity by Wm. S. Coperthwaite, with photographs by Peter Forbes is published by Chelsea Green.

Harvest of a Lifetime

Journeyman chairmaker, *Tim Beierle*, is clearly barking up the right tree with his new-found obsession

While I am highly unqualified to speak about chairmaking, I can share my experience and journey in learning, highly influenced by learning the designs and methods of other makers through conversation, email, video and Instagram. I cannot write without first mentioning Jeff Lefkowitz who over the last few months has been a major influence in teaching me the techniques and methods he and others have developed to craft ladderbacks. I hope to one day be able to transfer the knowledge to my own designs.

When I began woodworking, I started by making a dovetailed box in 2018. I chopped the dovetails on a concrete garage floor with my Grandpa's dull set of chisels and a framing hammer. I've kept the box as a reminder of the improvements that can be made with a little patience, practice and time. Since then I have been drawn to chairs and chairmakers, both Windsors and ladderbacks. But they often felt out of reach for my skill level. The first few chairs I made followed the process laid out by Jennie Alexander in the *Make a Chair from a Tree* video, which taught me some basic principles of post and rung construction. I was caught by a side chair designed by Brian Boggs and taught by Jeff Lefkowitz and David Douyard. I admired the flowing lines of the rear posts and the tightly woven hickory bark seat.

I was thrilled to find that Jeff offers plans

for the side chair along with a manual and blog series that takes you through the steps in building the chair along with detailed instructions and explanations of the steps. There seemed to be a great deal of information on building Windsor chairs from makers like Curtis Buchanan and Peter Galbert, to name a couple, but aside from a few resources, detailed information on the process of designing and building ladderbacks was scarce.

It wasn't until a visit to Jeff's shop a few hours north in Virginia that my interest really began to grow. I began by bugging Jeff with questions, to which he freely and generously offered answers and suggestions each step along the way, and continues to do so.

One of the challenges in the Boggs chair is the woven hickory bark seat. After weaving a few sub-par seats, Jeff offered some constructive criticism, valuable tips, and suggested the video *Hickory Bark from Tree to Chair* by Brian Boggs. With the help of these resources I was able to make vast improvements in the quality of the weave. I still have much to learn about using the material but the enjoyment comes through the challenge of learning. While I have not harvested hickory bark I can only speak about the process after it is harvested.

Three lessons learned in weaving with hickory bark dealt with moisture, dressing to uniform thickness/width, and tapering.

The first step is soaking the bark to make it pliable and workable; it sort of takes on a leather-like feel. After a few hours soaking in cool water (I learnt not to use the bathtub as my wife made me scrub it clean), the water is drained and the bark is placed in a large bag or container to sit overnight. This allows the moisture in the bark to equalise while remaining damp and workable. If the bark is too wet when weaving it will shrink and leave gaps between the strands. I know this first-hand.

Moisture of the bark also plays a key role in thicknessing, which is the next step. Hand-harvested bark can vary quite a bit in thickness so a spokeshave is used to dress down to a more consistent thickness. I find this step the most time-consuming and difficult aspect of using hickory bark. A sharp spokeshave is key to engage the cut and prevent clogging with stringy fibrous strands. I've spent way too much time unclogging the mouth of the spokeshave rather than heading to the waterstones for sharpening. A skewed cut seems to help reduce clogging.

The final lesson learned was in tapering the warp (front to back) strands; a subtle detail that makes a big difference in the overall look of the seat. Before Jeff pointed out this detail I couldn't quite pinpoint why my seats were lacking the continuous refined appearance of his. Because the seat is a trapezoid, tapering the warp strands so they are wider in front and narrower in the back eliminates the need for floating strands on the side, which are added at the end to fill the gap left by weaving in square. Another subtle detail as a result of the tapered warp is a slight arch in the herringbone pattern seen when viewed from the side. I am by no means an expert or proficient in weaving with hickory bark just eager to learn and open for advice passed on by more skilled and knowledgeable makers and teachers.



Brian Boggs side and arm chairs made from air-dried black walnut and cherry

Follow Tim Beierle @windygapwoodwork.

Black walnut Boggs side chair
with hickory bark seat, made
from local air-dried walnut



The Pandemic Support

Faced with the new Covid-19 normal, spooncarver *Daniel Marcou* set about building himself a bench

When the Covid-19 pandemic began in early 2020, people everywhere experienced unexpected changes and constraints. For many, these new challenges felt strange, like working from home, wearing masks, not getting too close to people we used to hug, and yes, even wondering when toilet paper would be available again. For most of us, what was once normal, now felt distanced and limited. Throughout my anxieties and fears, the three constants that I used to cope with all of the uncertainty were my family, my friends, and my woodworking.

I've appreciated and attempted woodworking for three decades. Still, I feel awkward calling myself a woodworker because that implies that I have a level of knowledge and skill that I don't possess. Three years ago, I started carving wooden spoons, and I've grown comfortable calling myself a spooncarver. I think it's because a wooden spoon is humble yet functional, which summarises my philosophical goals with woodworking.

My first pandemic woodworking project was in April 2020. I decided to build a simple bookcase with lumber left over from the bed I made for my son before the pandemic began. I borrowed a Nobex mitre saw and a few clamps from friends. Spring arrived, so I put it together outside in my driveway. Neighbours passed by and asked me questions about it from a distance. I finished it, and it felt incredibly satisfying to work within the constraints I faced. It also made me realise how helpful it would be to have a workbench instead of using chairs or my spooncarving stump as a work surface. I decided that a workbench would be my next project.

Child's desk

My wife, eight-year-old son, and I walked every day in the morning and the evening during the Pandemic. We started to explore the alleys in our neighborhood to avoid the awkward dance of social distancing when we met up with other walkers on the sidewalks. We were also curious about what people were throwing out on trash day, especially after finding a handmade oak child's desk in excellent condition tossed out next to a garbage can. We cleaned it up, and our son used it during his distance learning. It became a treasure hunt, and I was always on the

lookout for lumber, happily dumpster diving for wood offcuts whenever I saw them.

One day in late summer, as we walked down an alley, I saw a lot of wood in the trash. I came back with my car and found a man cleaning out his garage. I asked him if I could have the wood. He said yes, and then went into his garage and brought out even more. There were 20 boards and every size of dimensional lumber that you could imagine. As I loaded the 4x4in cedar posts into the car, I started to see the base of a workbench forming in my imagination. I asked if he was getting rid of any hand-tools, and he said no, but then wondered if I might want some clamps. You can never have too many clamps, and I didn't have any, so I said: "Yes, of course!" He gave me three DeWalt 50in clamps, and little did I know the crucial role these clamps would play.

Nicholson dreams

After I decided that I wanted to make a workbench, I started researching different designs. I read Chris Schwarz's books about workbenches and watched old episodes of *The Woodwright's Shop*. I also exchanged many emails and had socially-distanced conversations with my friend David, who has guided me through many previous woodworking projects. My head was full of ideas, and in my imagination, I envisioned a stunning Nicholson bench with beautiful joinery. When I looked at my pile of found lumber, I humbly let go of all that and started work with what was at hand, and in the end, it was the constraints of materials, skills, tools, and shop space that determined the final design of my bench.

After looking at all of the plans, I decided to do my own thing with some heavy influence from workbench designs by Drew Langsner and Asa Christiana. The goal was to make a small but sturdy and heavy bench with an adaptable flat top. Plus, keep the project easy and inexpensive. I decided to use bolted butt joints because I didn't have the skills or tools to do any other type of joinery.

I only used a handful of tools: a drill with bits, a mitre saw to ensure precise cuts for the butt joints, and the three DeWalt clamps. I scribbled out measurements on scrap paper and then selected wood that I thought should work the best. I made a few mistakes with cutting the posts



"Total cost for my workbench was about \$40, for the bolts, nuts and washers"

and adjusted the length of the bench to accommodate for the error. In the end, the most crucial tools were the clamps, which allowed me to hold the bench together, drill the holes for the bolts, and then assemble it by myself.

After constructing the frame, I looked at the wood left and pondered how to make a benchtop. The remaining boards had lots of knots, so I resigned myself to the fact that I would probably have to buy wood for the top, but the principle of that thought gnawed at me. I wanted to make the entire bench from found wood, so I kept putting off a trip to the lumber yard.

My friend David, who knew about my workbench project, called me early one morning and said that he had just found a maple butcher block table in a neighbour's trash. I hurried over to his house, and I saw him standing by it. While he waited for me to arrive, he had politely prevented two other people from taking it. The table top's measurements were 24x48in; precisely the size I needed for my workbench.

The total cost for my workbench was about \$40.00 for the bolts, nuts, and washers that I bought at my local hardware store. I started boasting a bit about my good fortune. I was proud of my resourcefulness, frugality and that



I save a lot of lumber from going to the landfill. And the cherry on the sundae was undoubtedly finding the butcher block top that was the perfect dimensions and free. Everything had been so perfect, and then, as I was enthusiastically securing the top to the frame to finish the project, my driver bit torqued a tiny fragment of metal from an old screw and flung it into my eye. Of course, I wasn't wearing safety glasses!

Dimmed pride

In a fraction of a moment, all of my pride dimmed into deep disappointment with myself. As the blood began to pool in my eye, I anxiously talked to a nurse on the phone, hoping that I wouldn't have to go to the hospital. Still, after so many months of deliberately socially distancing myself and staying home to be safe, I knew I would have to go to the busiest hospital in my city and have someone put their fingers near my eye. I was a fool! Yet a fortunate one because after examining my eye, the doctor later told me that it was just a scratch and didn't require surgery. Lesson learned! Wear your safety glasses, especially during a pandemic.

As a wooden spoon carver, I loved the idea that I could work with wood without many tools or a workshop. However,

after making the bookcase early in the pandemic and seeing it filled with my books, I realised how satisfying it was to make simple furniture for my home. To continue to make furniture, I needed a flat, sturdy space where I could assemble, chisel, plane, or saw in a safe, efficient, and reliable way.

Yes, I would love a beautiful Nicholson or Roubo workbench made with precise joinery from Southern yellow pine and complete with holdfasts and multiple vices. But that is not who I am as a woodworker. I'm far from fancy. I'm just a cobbler who finds satisfaction in fabricating simple, functional furniture from found lumber. My designs and skills were based mostly on guesswork. My workbench seems to be rock solid, but who knows how long it will last. It's a question I have often wondered about my own life during the past year. The lessons that I've personally learned living through the Covid-19 pandemic are to focus more on the present, be creative within the constraints that come my way, and be grateful for what you can find and use in your life journey.

Daniel Marcou enjoys carving bowls and spoons. You can learn more about him and his woodworking at danielmarcou.com.



Carving Your Connections

Pondering her early days carving spoons, *Rosie Mockford* is inspired to become a spooncarver

Rarely had I felt as satisfied as I did then, slowly moving the sharp little knife through the green wood, neatly matching up the cuts until it felt so smooth and inviting to the touch. Carving a spoon not only felt good, it created a usable object at a satisfyingly quick pace.

Three years later I was musing, contentedly sitting in the Herefordshire Brook House woodland, within which many greenwoodworkers had made together over the years. During a week of creation and connection, I learned clearly why I love spoon carving, enjoying a long evening of fireside chat and choonage (Good Music).

That I had kept carving spoons after my first is a result of the immediacy and intimacy it brings to one's connection to nature. It facilitates a relationship like nothing I've tried before.

I find green woodworking unique in its ability to connect us to the properties of other living beings (like trees and plants) through craft. And I say that as someone who has reared and sheared sheep, and processed the wool to make yarn to make things with. For me, the fact that the wood still has moisture – life – makes it an interaction between person and sylvia. Rather than human dominating or imposing their will onto nature, it is a mutual process of exploration. It helps strengthen an understanding of ourselves as a part of nature too. In turn it leads to a quest for simplicity and this sensitivity leads me to understanding woodland and nature more deeply as each season turns. This understanding is one I hope to share with you.

I started spoon carving because I wanted something lightweight and suitable to take hiking and wild camping. I do love to take my tools and spoons out with me and now when I go out walking I

notice my surroundings much more thanks to them. It something exquisite to imagine all the spoons that could be found within the branches which cross my path. And it is even better to sit in a woodland or by a river whittling away the time making spoons. I think this is something many spoon carvers can share.

Spooncarving provides so much opportunity to learn and develop. For those of us who love to geek out a bit, this is a surprisingly extensive craft to enjoy. A great place to start is with a Wood Tools spoon carving kit. I love the little booklet that comes with their tools, explaining their heritage and providing inspiration to the likes of me by having an image of a cool-looking JoJo, who I'm now lucky to work with on the Pathcarvers project which aims to bring the craft to wider sections of society.

I've been fortunate enough to learn from people I consider mentors and friends, and incredible spoon carvers. There is so much to learn: sharpening methods, techniques and equipment. Then there are the unique properties and characteristics of wood; the species, the spalting, the moisture content, the grain properties and density, and so much more. Then there's the sculptural and creative - even artistic - side of the spooncarving. There is a thrill in making usable, ergonomic objects which 'work' well with the body and the way a person will eat. It becomes all so much more fun when the spoon has a beautiful form or design. I am constantly in awe of the creativity to be found within the spoon carving community.

I have made so many connections within that community as well as unerring support and friendship. Soon after I started carving I signed up to spoonclub.co.uk and then attended my first local spoon club – local groups for people who have attended

courses and/or who know how to spoon carve to meet and connect. I found connection with like minded carvers and found mentors and inspiration I had never imagined. I have made dear friends carving spoons and working with green wood, when I believed I was just going to learn or make.

There is something profound and powerful in meeting people who seem innately passionate about similar things. I've learned bowl turning, made a pole lathe, made charcoal, travelled the country and even connected online with some fantastic humans around the globe thanks to our shared passions. I have found a language with which to connect with people I'd never have imagined understanding.

Recently at Brook House Woods I was interested that I was able to connect and share with people I might never have ordinarily met: sharing a love of music, nature and making. Some were there to make beautiful chairs, and on seeing me carving spoons prompting them to ask for some evening learning sessions. I love teaching and sharing my knowledge, helping people learn for themselves. What I love most though, is seeing other people experience the satisfaction I did when carving my first spoon and really understanding the pleasure that can be gained from working with wood.

Visit rosiejoymaker.co.uk or [@rosie.joy.maker](https://www.instagram.com/rosie.joy.maker).



"I love helping people to learn for themselves"



"There is something profound and powerful in meeting people who seem innately passionate about similar things"

A Heart-Stopping Bench

Accepting her workbench needs upgrading, *Barbara Roberts* perfects the stops and dogs

My workbench is the heart of my woodshop. Everything revolves around that. It was the first thing I got and everything else has come second. I love my workbench. I'm so happy I didn't skimp on it. The most important job of a bench is holding the wood, and it doesn't matter how good and sharp your tools are if the workpiece doesn't stand still. Everybody knows this, but still I didn't do much about work-holding until finally a month ago I began a workbench upgrade. Sometimes I like to sit down so that my arms can rest firmly on the bench and eyes can see the tiniest details. I could have made a small stool but there's something special about swing-away seats.

I usually cover my bench with Kraft paper when I'm making a mess. To make things more simple I made a Kraft paper roll holder using mild steel, a couple springs and a metal sheet. I can pull it out and secure it in place with a piece of wood and a holdfast and roll it tightly back in after I'm finished making a mess. The mechanism keeps the roll tight and allows me to tear off a piece if needed. Woodworkers have managed a few thousand years without paper rolls and hinged seats but I'm glad they are there.

I bet the first workbench was made when a woodworker got fed up with working on the ground trying to carve a piece of wood that always rocked and slipped away on every mallet blow. Maybe the first bench was a tree trunk split in half and then possibly a notch or a peg was added to hold the piece of wood in place. Who knows. I sure don't. The bottom line is that the most important task is to hold a piece in place at a convenient height.

A tail vise works well but it always takes time to put the bench dogs in the correct holes, then it gets frustrating when the board lengths vary. I saw the perfect planing stop in Christopher Schwarz' book *The Anarchist's Workbench*. Woodworkers have used the same design for 500 years. I forged the iron part using regular mild steel, filed the teeth and shaped it like in the book. I first made a hole in the bench. After that I planed a piece of wood shaving by shaving so that it was snug but not too tight. Of course I split the first piece when I drove the iron in the wood

but the second attempt went smoother. I also made an L-shaped planing stop that is used with a leg vise. It can be used with wider stock, I guess. To be fair I made it because I felt like cutting a few dovetails and curves.

Making the first hole in the bench was horrifying but the next holes were easier on my psyche. I ended up drilling 14 new dog holes and I'm going to make a few more. Now I can use holdfasts anywhere on the bench as well as the desk lamp. A desk lamp allows me to see faint scribe lines and to find imperfections in surfaces and much more so it's very important that it can be placed anywhere and at any angle.

Working on long pieces

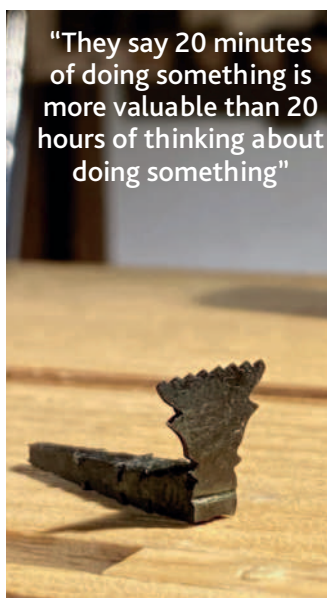
A doe's foot is just a piece of board with a notch cut into it. With the help of a holdfast it can hold a board firmly in place when the front of the board is leaning against a planing stop. I added a piece of leather on it to keep it from rotating.

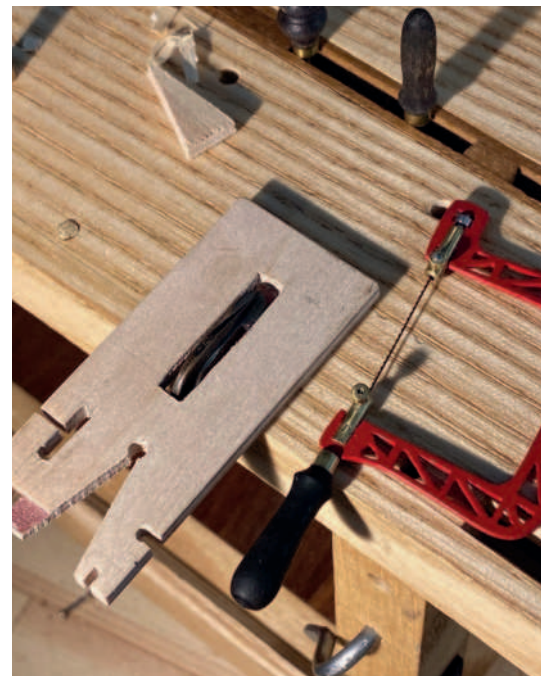
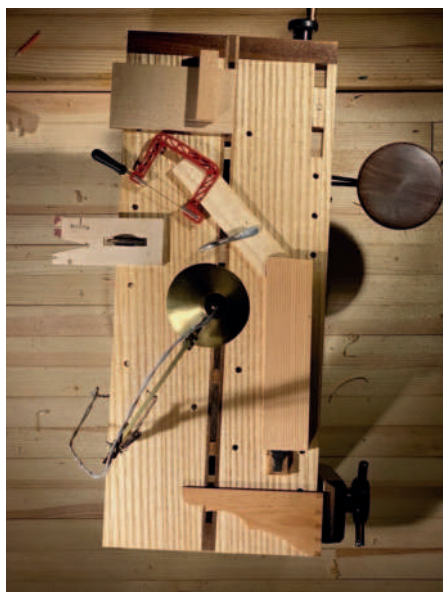
I had a bench hook but it didn't work well with longer boards so I made two smaller bench hooks that can be placed freely on the side of the bench. This way I can work on longer pieces more easily. It took me 15 minutes to make a pair but I had been thinking about them for at least a year. It's embarrassing really.

Last thing worth mentioning is the bench pin that is used with a fretsaw. I took a piece of birch ply and cut random slots in it like I had seen on the Internet. I use a regular C-clamp to hold it in place but a thinner C-clamp would be better because the surface of the bench pin should be flat.

They say that 20 minutes of doing something is worth more than 20 hours of thinking about doing something. It is true. I had been thinking about making these upgrades for ages but all it took was a few hours of work and pieces of scrap wood and steel to transform my workbench from mediocre to wonderful. There's still one more itch I need to scratch – a fancy workbench tool caddy.

Follow Barbara on Instagram @barbiewoodshop.





That Ingenious Bench

Inspired by benches from the ancient world, Rex Krueger builds a lightweight, portable model

Two years ago, I built my first Low Roman Workbench. I was inspired by Chris Schwarz's excellent book *Ingenious Mechanics: Early Workbenches & Workholding*. Chris explores several benches from the ancient world and gives instructions on how to build them, mostly from big slabs of hardwood. I wanted materials that were easier to find so I constructed my bench from Douglas fir 2x4s purchased at the local big box store.

My first low bench was a monster. Eight feet long and with a top made from 11 laminated boards, it might have been the sturdiest thing in my shop. I built many projects using this bench and it's very effective for sawing, making small boxes, and green woodworking. It's much less suited to cabinetmaking and joinery, like dovetails. You're also sitting, working, and storing your tools all on the same surface, which is predictably awkward. Many times, I was nearly stabbed in the rump by a forgotten chisel. For the furniture-maker trained in Western methods, the low bench is no substitute for a 'proper' stand-up bench, but it is a remarkable addition to a more familiar bench. Because of its compact size and efficient construction, the low bench works beautifully as a saw bench and low assembly table.

When the weather turns nice (as it's about to in Northern Ohio) I like to take some tools outside and work in the yard for a few weeks. A good low bench would vastly improve my outdoor work, but my original Roman bench is too big to get out of the basement and it's covered with tools anyway.

It's honestly easier just to build a new one and while I'm at it, I can redesign the bench to be slimmer, easier to build and cheaper. With the recent surge in lumber prices, many craftspeople need an affordable bench more than ever.

I've christened this bench the Lightweight Traveler in honour of a plastic pint-bottle of whiskey sold during my misspent youth. Just like that hooch, this bench is light on the wallet. You'll need a pair of construction-grade 2x8 boards at least 8ft (2.5m) long (or your local equivalent if you live outside of the US). You'll also need glue and a box of 2.5in (65mm) coated deck screws.

You won't need many tools. I built my Lightweight Traveler with a saw, an axe, a drill, a mallet, a framing square and a pocketknife. To make the work more manageable, I also used a pair of low Japanese sawhorses (you can see me build them on my YouTube channel), but you could also raise boards for cutting off the ground on a pair of plastic buckets.

Unequal lengths

The top of my bench is made from two lengths of board, one 42in (108cm) long and one 36in (90cm) long. These unequal lengths will give you a lot more clamping and workholding options when the bench is finished. We'll hold the two seat boards together with a pair of wide battens. Cut them as long as your seat is wide and attach them 6in (15cm) from either end of the bench. I



The Lightweight Traveler workbench (above) is effective for planing, especially with inexpensive Chinese wooden planes. These planes have a pair of handles and are meant to be pushed from directly behind the work. Rural Chinese carpenters use a similar bench. The bench, including the battens & legs can be made from two lengths of construction timber (below)



affixed my battens with screws and glue, although the glue was probably redundant. This thin, planked top would usually be too flimsy to support legs, but we'll stiffen the whole structure by staking the legs straight through the battens and the top. The combined thickness of those two pieces will support the leg tenons and driving the tenons through both pieces of wood will lock everything together. This is cross-grain construction and it should be vulnerable to seasonal wood movement, but the two-piece top will allow a little expansion and contraction. I built this bench last summer and it's withstood the wild humidity swings of Ohio seasons with no cracking.

The legs for this bench are just 1 1/2in (38mm) square sticks, 21in (54cm) long. You should have enough material to rip six identical legs from leftover stock. Choose the best four and cut

How to Make a Lightweight Traveler Workbench



Make your legs from sticks of leftover board. Drill into one end until the bit just scores the wood (below). Cut away everything outside that circle to create a round tenon (above)



Drill your holes using a 15° guide block (below left). Drill straight through the top and the battens. Once the holes are done, you can use scrap to add extra battens for added strength.



up the others to make additional battens that you can screw onto the bottom of the bench when we're done. Each leg should have the corners chamfered and you'll need to cut a round tenon at one end. I made my tenons 1 1/4in (32mm) in diameter to suit my largest drill bit and I sized them by finding the centre of each leg and then drilling down until the bit scored a neat circle in the end-grain. Then I sawed some stop cuts about 2in (50 mm) from each end and split away the waste around each circle. After you've knocked most of the excess material away, you'll need to pare your tenon right down to the line. I used my axe and pocketknife for this work, but a chisel would be better. Once each tenon is formed, you'll need to trim the leg below it into a smooth taper. As you sit on your bench, your weight will gradually drive these tapers up into the seat, tightening them as you work.

Centring the legs

My legs are installed with 45° of rake and 15° of splay. Draw a baseline 10in (25cm) from each end of the bench and use your framing square to lay out those 45° angles. You want your legs to be located roughly in the centre of each board. Drill your leg holes from the top while you're sitting on it. Start the drill straight, then rotate it so you're drilling along your 45° line and tilt the drill back toward you at 15°. You can use a bevel gauge to get this angle, or just cut it into a piece of scrap wood. Watch both angles as you drill all the way through. Don't worry about breakout on the bottom. This is a workbench after all.

Once your holes are drilled, you can test-fit each leg and have a look at the bench. If some of the legs are a bit crooked, try rotating them or swapping holes until things look straighter. It's handy to number each leg and pencil in matching numbers on the bench, then rip down the center of each tenon and cut some hardwood wedges. Coat each tenon in glue, insert it into the bench, and tap it home with a mallet, then flip the bench over, put glue on your wedges, and tap those into the legs until they stop moving. I suggest doing the legs two at a time so you're not rushing around with wet glue. Give the glue an hour to dry and then flush-cut your tenons and level your legs. I used the flat floor of my garage for reference and trimmed the legs until the top of my bench was just at my kneecap. I find this the perfect height.

The completed bench won't win any beauty contests, but you'll be pleasantly surprised at how sturdy it is. Straddle the bench and



Test your legs in their holes and rotate them until the bench looks even and sturdy. The mortise at one end of the bench is good for planing or cutting stops

you'll have a solid surface for planing or chopping mortises. Lay a board along the bench or across it and kneel on the stuff to hold it steady for sawing in any direction. With your body oriented over the work and your weight pressing down on it, you can use the big muscles of your shoulder and back to saw and you'll never need a clamp for any sawing operation. Your body weight holds everything effortlessly. You might also notice a square mortise at one end. Having a single square hole in the bench allows you to slide in a wooden dog, a planing stop, or any other little fixture.

Those two uneven boards at the end of the bench allow you to use a pair of inexpensive clamps as vices. A short bar clamp will let you clamp work to the longer board and the gap between those boards will allow you to drill through your work without drilling into your bench. Use your bar clamp to secure a handscrew clamp down to the bench and you'll have a handy vice for small parts or working on the ends of narrow boards. Just like any other low bench, this one isn't ideal for dovetailing or casework, but it handles many other tasks with minimum fuss.

The design I've presented here is also quite flexible. Build it



The completed bench handles much more than sawing. It's also a great platform for chopping, drilling and planing



My original Low Roman Bench had a heavier construction. It's too big to be convenient, but it's excellent for chopping experiences, much like a mortising stool. It's easy to carve leg tenons with a mallet and hatchet, (right). I clamp the stock upright to the leg of my chopping block

with whatever lumber you have to hand, and feel free to make the bench longer or wider (although I wouldn't make it much smaller in any dimension). When your work is done and you head in to dinner, lean the bench up against a wall under the eaves and you'll find it dry the next morning. If you work in a small shop, you can store the bench leaning up in a corner and just pull it down when you need it. And when a friend calls you to help out with a bit of carpentry or to demonstrate some work at a local fair, you've got a portable bench. It fits in lots of cars, but it's also light enough to just sling over your shoulder and carry.

If you're interested in building this bench, you can find more detailed instructions, as well as many other simple woodworking projects in my forthcoming book Everyday Woodwork: An Introduction to Woodcraft with 12 Hand Tools (Skyhorse). It's available wherever you get books and also at rexkrueger.com/books. Rex Krueger is a furniture builder, teacher, and writer living in Cleveland, Ohio. He makes instructional videos on YouTube (www.youtube.com/c/rexkrueger).



One end board being longer than the other means a workpiece can be held with clamps, and the mortise near one end of the bench is valuable for using jigs and stops



How to Make a Van Gogh

Asked by a reader how to copy QM01's small chair, we repeat *Masashi Kutsuwa's* Living Woods article

The Van Gogh chairmaking course in 2013 was planned as a part of the chair exhibition called '100 chairs by 100 craftspeople' in the northern city of Sapporo. We designed it as a four-day course; splitting the logs and shaving the parts in the first two days, then after three days of break, drilling, assembling and seat weaving to complete the chair. We put the break in the middle so that we could dry the rungs to avoid loose tenons in their joints.

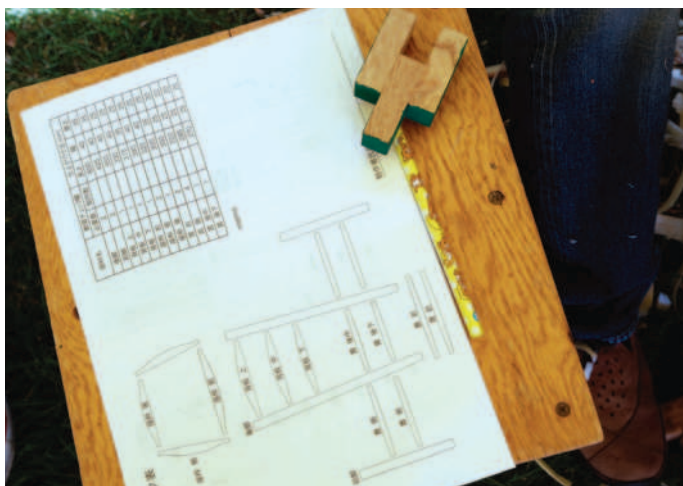
The second day was shaving cleft parts into roughly straight and rectangular shape with a drawknife. We shipped our shaving horses from Gifu, and also asked the local woodwork staff at Sapporo Art Park to make some more of them in advance of the course. Our shaving horse is my original design: it is folding and made from Japanese cypress. Light and compact so that we can take them to the courses at many places.

Not many people in Japan have seen a shaving horse before. Traditional Japanese woodworkers didn't use this kind of device because they would sit on the floor and hold the workpiece with their body. Japanese coopers used to use drawknives for shaping the outside of wooden buckets and casks, but they are disappearing. So it was a refreshing experience for every participant to sit on a horse and shave a piece of green wood with

a drawknife. Making a Van Gogh chair is so simple because after splitting the logs, the drawknife is the only edge tool you needed. No spokeshaves, chisels, or scrapers are involved. No awkward adjustment of the blade, either. To make tenons at each end of the rungs, we provided a simple marking gauge and they shaved them to size. Almost all the parts were ready after two days, and the volunteer staff did the remainder as homework during the three days of break.

We kept the shaved chair rungs in a warm place inside the glass workshop building to let them dry, to shrink the tenons before assembly. Meanwhile the shaved legs were put in a cool place to keep the moisture until they'd been drilled and assembled.

The first thing to do after the three days of break was drilling mortises. The tenons had already been shaved at 19mm long, and 16mm square at each end of the rungs, to fit a matching 19mm drilled mortise. We had a number of experiments in advance to find the optimum size of mortise and tenon. If the tenon is too wide, it works as a wedge and splits the leg. A square 16mm wide tenon into round, drilled 19mm mortise means that you will have 1.5mm gap at both sides of the hole. It looks loose but actually is tight enough because each corner of the tenon bites the mortise wall as it is driven in. The joint gets even tighter as the leg



A special little jig (below left) was made to prepare tenons exactly 16x19mm for a squeeze fit into a 19mm diameter mortise (below right). Participants worked in pairs for drilling the frames (right)





A square tenon into a round hole can be a tight fit, especially when the legs then shrink to hold the rung tenons even more tightly

shrinks. We don't apply any glue. I thought this method was rough when I first saw the original Van Gogh chair, but it does make some sense. Some woodworkers turn a round tenon and shave the sides of it so that it forces against the end-grain of the mortise. Mike Abbott makes the tenons oval by drying the round ones. Van Gogh's rectangular tenon does a similar job and is easy to make.

Participants drilled mortises for front and back rungs with a brace and 19mm auger bits. We clamped the legs at an angle so that they can be drilled perpendicularly. The participants worked in pairs, one checking the angle while the other rotated the brace.

Then the most exciting moment comes: banging rectangular tenons into round mortises. A famous Japanese potter Shoji

Hamada went to see the Spanish chairmaker 50 years ago and described the process: "A roughly shaved rung was driven into a hole and water sprayed out of the joint." We didn't have a spray of water thanks to pre-dried rungs, but the participants were still excited to achieve the unique joint.

Having assembled the front and back frames, there was yet more drilling for the side rungs, 30 holes per chair in total. By the end of the third day, all the chair frames had been assembled.

The final day was seat weaving. The original Van Gogh chair seat was woven with rush but we provided ready-twisted rush rope to make the weaving easier. The rope is originally used for supporting tree branches against the weight of snow in Japanese gardens (the technique is called Yukitsuri). We provided a sheet of tips on how to weave the seat, originally from the *Chair Seating* book by Mary Butcher, with some of our original alterations. Shinsuke Kato showed the weaving process step by step, and other members of Japan Green Woodwork Association helped participants. They each spent four hours weaving the seat and finally finished their chairs. Some of them recorded 'the date of birth' of the chair on a back leg with a woodburning pen. The four-day Van Gogh Chairmaking program finished successfully with a big smile on everyone's face.



A weaving manual sits on top of a roll of ready-twisted rush rope (left). The 'birth date' was burnt onto the back leg of some chairs (above). The weaving underway (below left), and Naomi Sakai beaming (like many others) with her finished chair



WEAVING PHOTOS: HIROO NAMIKI

Through Tenon Toolboxes

Having made 50 iterations, *Derek Jones* is well placed to show how to make Japanese-style storage

I have been present at the birth of around 50 Japanese style toolboxes now and I'm still nowhere near tired of them. Perhaps it's because they offer so many lessons in both design and joinery that they've held my attention for so long. For what appears to be a pretty straight forward box there are a lot of variables to be considered before you hit upon the right combination. Softwood, hardwood, painted or left bare they all have implications on the way you build it. For any successful project it pays to be clear at the beginning exactly what it is you are making and what it's intended use is. Sounds easy enough doesn't it? The trick however is maintaining a ready, aim, fire mindset through to completion. If you're prone to deviating from your initial idea hold on to this thought; this won't be the only Japanese style toolbox you'll ever make. Nobody stops at one. Nobody.

At this point you might want to take a look at the drawing. Get a feel for what's required and then forget all about it as the box you make will be your design. If you want to follow a traditional path the method used to fasten all the parts together is with nails - cut or forged nails to be precise. While I like this approach for its simplicity it's not nearly as straight forward as you might expect. The simple stuff never is. Pounding in nails, even with the correct pilot holes, can rattle previously connected parts loose if you're not careful. And because you're often driving nails into one component in two directions you run the risk of cleaving that component in two. Smaller boxes are more of a concern admittedly but it's something I try and avoid if possible. Attaching the battens on the top of the lid also poses a problem in this respect as the parts are generally made from thin stock requiring the nails to be clenched (folded over and driven back into the part). For a multitude of reasons this may be the right approach like when you need a toolbox right now and can't hang around for glue to dry. Or maybe when water soluble glues just don't cut it. A combination of nails and glue and some time in between is hard to beat.

For a lot of tradespeople building a tool box represents a rite of passage; it's a time when you can exercise your flair for design as opposed to following the wishes of others. Be mindful here though as you could unwittingly turn out to be the



customer from hell. Remember, you're not getting paid for this job and the snagging list can go on and on and on. And as I said, there will be other toolboxes. Unless authenticity is your goal a more robust, prettier and in some ways easier route is to combine an element of joinery not typically used on traditional examples. For inspiration you need look no further than what we'd all recognise as an Arts & Crafts approach to construction. The gap between the two styles is closer than you'd think as the movement has its roots firmly embedded in Japanese design. It's widely accepted that the founding fathers of Arts & Crafts are John Ruskin and William Morris and while they may have captured the moral high ground with their theories on the merits of honest work the foundations for this new aesthetic were being laid before they got on their soap boxes. In the two decades leading up to the movement Edward William Godwin,

a self-taught architect and designer, was challenging conventional opinions about the relationship between form and function. Godwin began his career working in the Victorian Gothic style and had had some success designing prominent municipal buildings in Northampton and prestigious domestic properties on the then outskirts of London like Chiswick. Oscar Wilde was among his clients, describing him as "one of the most artistic spirits of this century". By the 1850's Japan had become a firm trading partner with the West and within a decade prints, ceramics and textiles became fashionable in the homes of the more progressive and artistic members of society. Influenced by the interiors depicted in Japanese prints Godwin began to explore the general principles of simplicity and elegance in Japanese art by combining them with the needs of the Victorian home. The result is quite startling when you consider what was on offer at the time.

His signature piece, a sideboard made from ebonised deal or mahogany, is in essence a precursor to a lot of Arts & Crafts furniture. Godwin was undoubtedly ahead of the curve in as much as he sought to focus on a pure form of utility by eschewing unnecessary displays of decoration in his designs. A century before it was the remit for that other famous band of abstainers, the Shakers.

There are two ways in which to regard exposed joinery, showing off your woodworking skills by introducing decorative features or accepting them as the inevitable outcome of all that honest work. Providing the intent is based around a sound construction methodology they generally compliment each other very well. Along with dovetails, wedged mortises are a way of combining striking visual impact with maximum structural integrity. The method I favour for building these tool boxes incorporates wedged tenons and dados; a combination that results in by far the strongest solution. For regular mortise and tenon joints I prefer to create a mortise first, finding it easier to size a tenon to a good fit than the other way round. In this scenario however, it matters very little which way round you approach things providing you can be precise with your layout. My routine starts with both sets of components dimensioned exactly across their width - ends and sides. From

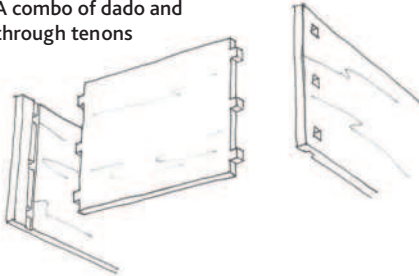




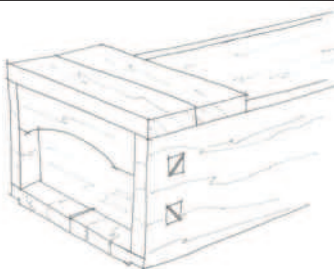
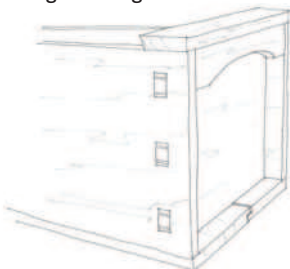
"I have been present at the birth of
at least 50 Japanese toolboxes"

a common edge I start laying down the position of the mating parts of the joint making one mark at a time on each component – the mortises on the sides and the tenons on the ends. When I've completed a full round I adjust the gauge to the next measurement and go round again. If the boards are too wide for my gauge I work from opposite edges. If you want to avoid over marking with a knife or gauge you can lay down some pencil lines before hand. I've found it best to cut my through mortises from the show side of the board as it usually ends up with crisper edges. I don't attempt to break through to

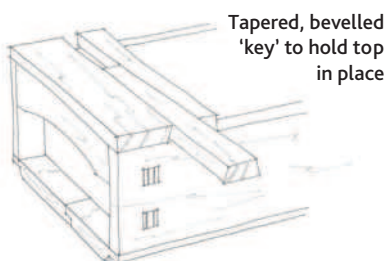
A combo of dado and through tenons



Double-wedged through tenons



Through tenons with angled wedges



Tapered, bevelled 'key' to hold top in place

the other side until I've cut the dado as I like to use the dado walls to position my chisel for paring out the remaining waste. Unless the proportion of the tenons dictate it I should mention that at this point I haven't decided which way round I'm going to wedge them – top to bottom or left to right. If the fit across the thickness of the tenon board is better than the height, it means I can wedge left to right to close the gap. Driving wedges in vertically will allow me to close a gap in the other direction. If there are gaps all round or I've just had a bad joinery day I can set the wedges to run diagonally and look mighty slick in the process.

Much of what I've said here is contrary to what we know about through mortise and tenon joinery in that it appears to encourage splitting components along the grain, so let's look in detail at why this happens and what measures we can take to avoid it. First of all splitting happens for one reason – the wedge is driven in too far into the tenon splaying it outwards thus causing the surrounding material to split along the direction of the grain typically towards the end of the board. The key phrase here is 'too far' because it's quite possible to create a strong joint without pounding the wedge in until it won't go any further and here's why: wood is at its most flexible when it is wet. The moisture contained in the log is locked within the cells which effectively supports the fibres as they are placed in various states of stress, namely compression. In this state the material can withstand repeated cycles of moderate compression and expansion without causing the cells to rupture. It behaves like a rubber band. However as we like to build with seasoned timber where most of the moisture has been removed the cells are now vulnerable to rupturing when excessive forces of compression are introduced. They have effectively lost some of their elasticity.

In a joint where wedges are being used to create compression we have to be careful not to put the material under so much pressure that it destroys the cell structure and cancels out the compression in the joint. If a truly mechanical fixing is what you are after straight walled tenons and wedges aren't the answer. Instead you'll need to splay the walls of the mortise to allow the tenon to fan out and fill the void when the wedge is driven in. To conclude I should mention that the species of timber, the run of the grain and how seasoned the material is all need considering before you embark on any form of joinery. They're all factors in deciding which approach is best. And 'best' should only apply to what's in front of you on your bench right now and not the next project and definitely not everyone else's.

The Smaller Style of Toolbox

Anny Dubois made another toolbox when our one for miniature tools was stolen



According to Anny this toolbox was more difficult to produce than the one she sent us for the Veritas miniature tools. "I make things only once, and I couldn't remember how I made mine. It seems that when something is done, the file is thrown out of my brain."

For anyone who needs permanent instructions you can buy plans for a Mini Japanese Toolbox as a printed and digital pdf for just \$2.00 from www.bikecitywoodworks.com. "This keepsake box," the manual begins, "is based on the design of the traditional toolbox, but scaled down to around 25% of the original size." Anny uses a square for gluing up a toolbox, but does not cut dados.



Turnbuttons

Robin Gates uses scraps to make simple fasteners

When life gives you scraps, make buttons! You might know them as door buttons, door turns or turnbuttons but the essence of these neat and simple fasteners is a small elongated piece of wood attached by a screw at its centre leaving it free to revolve. Mounted on the frame of a cupboard door, for example, it holds the door shut and then, turned through 90° it permits the door to swing open. It's so useful in the caravan, shed or small boat but also at home if, like us, you have wonky old wooden floors on which the furniture leans about like a bunch of drunken sailors. Old school joiners will also recognise this little device from the lid of the joiners' toolbox where it serves to prevent the handsaw falling out.

Individually, door buttons are awkwardly small items to make by hand, so I've devised a method for knocking them out in batches. I've used a few simple handtools – the try-square, marking gauge, hand drill, gouge, gents saw and bench hook – but you could get away with using just a knife and a gimlet for a more rustic look.

The 'mother piece' in this instance is a scrap of salvaged mahogany about 41/2x2x1/2in which I reckoned good for making eight buttons, but the dimensions and number made in a batch are fairly arbitrary; you make what you need from what you've got. Note that for maximum strength the grain should run the length of the button, so short offcuts from plank ends which might otherwise be burned are ideal material.

First divide the piece lengthways into three, using the marking gauge, then square across the width on both faces marking out your individual buttons. These are about 1/2in wide. With the marking gauge, also scribe the final thickness of the ends of the buttons along each edge; these finish at a shade over 1/8in. Next, drill a clearance hole for the screw at the centre of each button, and use the end holes to attach the piece to a larger backing board. The backing board provides for clamping the work while leaving room to manoeuvre with the chisel or gouge, meanwhile allowing the work to be rotated to allow comfortable working from either side.

You could carve the angled surfaces of the wings of the button flat with a chisel used bevel down or, as here, use a shallow gouge to impart a little texture that looks attractive in raking light. In any case, beware of enjoying the carving too much or you'll



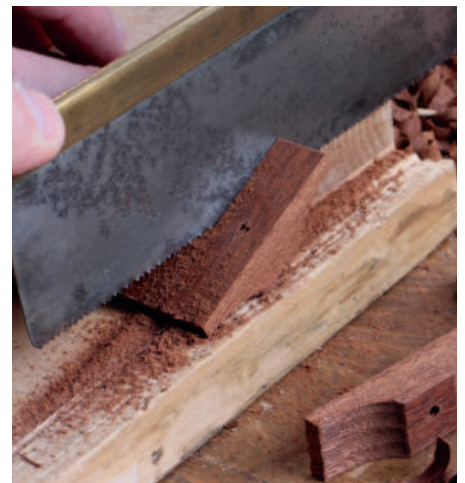
A panel saw secured by a button in the lid of a joiner's toolbox (above). A button (below) ready for fitting with the corners and edges rounded



overshoot the scribed thickness. Now unscrew the piece from the backing board, secure it firmly by hand pressure against the bench hook, and saw the buttons free one by one. All that remains is to lightly round the sharp corners and edges, finish as befits the surroundings, then fasten where required with a round head or countersunk screw as preferred. Tighten until friction is just sufficient to permit turning under moderate pressure. Enjoy!



The 'mother piece' marked and drilled for eight door buttons (left). Carving textured wings (above) while the work is attached to the backing board. Sawing the buttons free (right) one by one on the bench hook



One Down & One Across

Grabbed by old techniques, *Robin Gates* channels the grain with wooden grooving and dado planes

One of the delights of amateur woodworking is the freedom to take as long as you like over what you're making, meanwhile rediscovering old techniques and exploring the development of hand-tools through their daily use. Two old joinery planes to have grabbed my attention recently are concerned with cutting channels: one working down the grain, the grooving plane, and one working across it, the dado plane.

Until recently I'd invariably cut a dado by saw and chisel, when housing the ends of a shelf in a bookcase, first sawing the sides of the housing and then paring out the waste with a bevel-edged chisel. This simplest of techniques is slow but eminently controllable, quiet and satisfying, easily yielding a good fit. An electric router would blast through the job in a fraction of the time, but making much noise and dust in the process. Although unsuited to cutting a stopped housing, the dado plane offers a third and highly satisfactory way of achieving the same end.

To the Victorian joiner of modest means, progressing from the slowly reciprocating tenon saw and sliding chisel to shoving a dado plane across the board, witnessing the vertical sides, crisp edges and flat floor of a housing developing in its wake must have been as mind-blowing as, say, stepping up to the penny farthing from simply walking. Some old catalogues list such a plane as a 'dado grooving plane' or 'trenching plane', but dado plane seems to have stuck for cutting a groove across the grain.

Just like a prayer book

At first glance this plane appears barely more remarkable than the four-square block of beech used to make it, standing straight upon its heel as a prayer book. But look a little closer and the cleverness, not to mention artistry of its design unfold like the workings of a steam locomotive – to which, in profile at least, it does bear passing resemblance. Observe that so-curvy snail-shaped escapement that's also tapered so as to eject shavings from the side without clogging. The blade pitched at 50° (York pitch) is also skewed by about 18° towards the escapement, tending towards a cleaner cut than when hitting the wood fibres perpendicular. Consequently the mortise is also skewed and the wooden wedge is a parallelogram in cross-section. Even so, this tool resembles the ordinary rebate plane thus far. But standing bolt upright nearer the toe, and bearing two tiny spurs we have a peculiar second iron – the chimney, if you will, of the steam loco. Its job is to sever the surface fibres on either side of the channel, paving the way for the main iron to cut between clean edges, meanwhile sending out the cross-grain shavings which crumble like flaky chocolate.

To set the plane going on its intended course you need to clamp or pin a batten across the board for the stock to bear against. The first pass is made in reverse, using the spurs to make their twin incisions in the surface fibres. The forward planing begins at the end of the dado, working back a little with each pass until the full width of the board is taken into account. Both hands are used, one above the toe applying down force at the beginning of the cut while the other at the heel propels the plane and ensures the blade remains cutting to the full extent of its journey. Once sunk in the wood by 1/8in or so you can safely dispense with the batten as the plane is essentially 'self-jigging', guiding itself, but now you must consider depth. The default maximum depth of cut built into this plane is 1/2in, determined by the rebated sole, and some



The dado plane is initially guided by a batten (above) and a 1936 advert for the adjustable grooving plane (right)



dado planes with fixed purpose require nothing more, but in this case we also have a screw-adjusted depth stop. The brass button raises and lowers a steel foot

which bears on the surface of the wood.

This 3/4in dado plane has had at least five owners since new, the earliest being stamped in old decorative style with zig-zag borders and letters in relief, but it has survived the generations in fine fettle. There are four owners' names stamped on the toe and one on the heel. For me it not only looks but sounds like a little steam train, shunting back and forth with the rhythmic huffing of the shavings being parted.

Although not so versatile as the saw and chisel, being of fixed width, the journeyman joiner of the last century would likely have two or more dado planes of different widths (they were offered in 1/8in steps up to 1in) in his chest, according to his needs, enabling the quick and tidy work on which his livelihood depended. But few seem interested in these old planes today, even less in making new ones, although they're highly practical for making the housing joints of simple furniture. Still, that worked in my favour because this was a dream of an eBay purchase, with no other bidders and costing barely more than postage. The long-disused tool required little more than loosening up and honing. It was to be a different story with the grooving plane.

The grooving plane

I've collected a lot of old *Woodworker* magazines, and I'd been wanting an adjustable wooden grooving plane since finding one advertised by Frank Romany of Camden Town, London in a 1936 issue. The plane was supplied with three Sheffield irons at 1/8in, 3/16in and 1/4in and cost four shillings and sixpence complete which, taking account of inflation, projects to a theoretical £17



Cutting a drawer bottom groove with a newly restored grooving plane (above). Twin spurs preceding the iron score the surface fibres (left) of a dado, and the arrangement of spurs, iron and depth stop on the dado plane (below)



today. But if you should want a new one the man to see is plane maker Phil Edwards (@phillyplanes) who lists this tool as a 'small plow', and by the way the real world price is £325.

Wanting the plane wasn't quite the same thing as needing one, because I already had a Greenslade wooden plough capable of grooving all widths from 1/8in–9/16in, and also the dainty nickel-plated Record 043 plough, to my mind the cutest grooving plane in the known universe. Greenslade were big plane makers in Bristol, established in 1828. Still, the bulky Greenslade (dating from the 1920s-ish), with its articulated fence can be tiresome to set up, while the shiny all-metal Record looks decidedly out of place among the old woodies. Rejecting inner voices to the contrary, I decided I'd be getting this other sort of plane as soon as one showed up, and that'd be an end on it. Perhaps it would have been if I'd bought more wisely.

I'd read good things about the wooden planes of A. Mathieson & Son of Glasgow, and it was perhaps through paying more attention to the maker than the tool itself which propelled me to bid on eBay for a Mathieson grooving plane which not only had the wrong wedge (skewed and too skinny, from a rebate plane) but was entirely deficient in irons.

For some months the plane languished at the back of the shed until, sick of the sight of the thing, I lobbed it in with other stuff for the charity shop. But the chap on the receiving end fished the sorry item from the box and called me back.

"No one will buy this. Bits of it are missing."

"I thought perhaps as a door stop, or paperweight?"

Apparently not. It seemed this plane and I were never to be parted. Once again I went through my plough plane irons in search of one to fit but that was clearly futile. The plough's hefty irons are similarly tapered and slotted to fit against a steel skate, but even the smallest is made from the common 9/16in stock, and that's far too wide to fit the mortise of the grooving plane. Its proper irons are 1/4in at their widest point and, worse luck, rarely found in isolation.

Restoring wooden planes

Making the best of the situation, I recast my mistake as an opportunity to further probe the mysteries of restoring wooden



A contemporary wedge was used as the profile pattern for a replacement

planes by making the missing wedge. Taking as my pattern for the profile the wedge of a contemporary plane, I marked around it on a piece of conveniently straight-grained beech, salvaged from a kitchen utensils box, and cut it out with tenon and coping saws. There followed some vertical paring using an in-cannel gouge around the cutaway and a firmer chisel around the top, before levelling the straights with a block plane. The tricky bit was always going to be reducing the wedge to thickness. Improvisation with various stops and cobbled-together jaws to hold the awkward shape failed at every first push of the plane, but then I carved a dedicated wedge-shaped cradle into which the wedge could only wedge itself more securely under pressure and it worked a treat – how obvious was that! Shaving by shaving I tuned the wedge to a good fit.

The last detail of shaping was to carve the curiously skewed hollow at the end of the wedge. I've not found an explanation for this feature, but perhaps it helps deflect shavings, lends its support to maximum extent while not projecting beyond the thickness of the skate, or maybe is only decorative. It was a simple job with a firmer chisel used bevel down, but on reflection it could have gone badly if the wedge had slipped; next time I'll employ a clamp.

Finally, the glaring whiteness of the new beech was subdued to match the colour of the stock. Experimenting with what was to hand I tried linseed oil, iron acetate (rusty steel brewed in white vinegar, often used to darken oak), and well brewed tea, but the best result was achieved using three coats of strong black coffee followed by a wipe of linseed oil to improve durability.

Up to this point the exercise in wedge making had been only that, the plane itself destined to remain lifeless for want of its vital irons. Then Francis O'Sullivan (@proinsias_o_suilleabhain) the woodturner, joiner and, as luck would have it, iron man of West Cork posed a most welcome question to my post on Instagram:

"What width Robin? I have a few that might suit if you need one." The irons suited perfectly, requiring only a touch of the grindstone to find their edge after years languishing "at the bottom of a box of rusty odds and ends" and covering all original widths: 1/8in, 3/16in and 1/4in. Thanks Francis!

Whether with adjustable fence, or to a simpler design with fixed fence, this tool is also known as a 'drawer bottom plane', used for the repetitive task of grooving drawer sides to a standard width, depth and distance from the edge to accept the bottom when building drawers. So I thought this original purpose should be reflected in the plane's first outing, and set about grooving one board to accept the chamfered edge of another. I'm happy to report the restored plane worked like a charm, and will find regular use in building future drawers and boxes.





Supporting the wedge in its cradle while planing to thickness (above). The tip of the wedge is carved with a curiously skewed hollow (right). The iron of a wooden plough (on the right, below) is too wide for the grooving plane



The replacement wedge stained with strong coffee to match the colour of the stock (above). The set of eight plough irons belonging to the Greenslade plane (below left). Grooving planes (below) with adjustable fence (left) and fixed fence (right)



Kohtaro Mori

The chairmaker from central Japan who lets his planes bring out the innate beauty of wood



Kohtaro Mori lives in Yoshino, within the Nara Prefecture of central Japan. Mount Yoshino is the country's most famous viewpoint for cherry blossom. According to japan-guide.com: "It is said that the first trees were planted along its slopes more than 1300 years ago, and today the mountain is covered by approximately 30,000 cherry trees of many different varieties, especially of the Yamazakura variety."

It is the beautiful stools he makes, and the kanna (Japanese planes, which are pulled not pushed) he uses that are so impressive. "I have been fond of woodworking since I was a child, and my hobby is sailing. I started working at a wooden yacht workshop about 15 years ago," Kohtaro replied when asked how long he'd been a woodworker, having realised he liked making things after university. "That was my first woodworking job. Five years later the owner decided to close the workshop. Then I started learning how to make furniture. I went to a

furniture school for a year then went to Tokunaga Furniture School (tokunaga-furniture.com) for training. After studying there for three and a half years, I moved to Yoshino and started a workshop. Yoshino is a region with a history of afforestation, and I make furniture from Yoshino cedar.

The feature of the furniture I make is that I finish it with kanna without using sandpaper. This is because finishing with kanna is the best way to bring out the innate characteristics and beauty of the wood, avoiding the fine scratches and loss of shape caused by the use of abrasive. It may be similar to sashimi [Japanese fish or meat sliced with a knife] which is cut with a well-sharpened knife and is mellow and delicious. Kanna enable us to talk with wood. You can feel the warmth and kindness of wood when you touch 'kanna-made' furniture."

Follow Kohtaro Mori on Instagram @mokkou.mori.



Trees were planted on the slopes of
Mount Yoshino more than 1300 years ago



"I have been fond of
woodworking since I
was a child"



"I finish furniture with
kanna and without
any sandpaper"



"It is like slicing meat with a
finely-sharpened knife"



"Kanna enable us to
talk with the wood"

"I started working
in a wooden yacht
workshop 15 years ago"



Making a Stand

To get a grip on hand-tool storage, *Christopher Walker* makes a stand for spokeshaves

A massing a collection of hand-tools begets a method to organise them. Though a monolithic tool cabinet to store every tool is ideal, these take time to plan and construct so many woodworkers, like myself, look to a tool wall with a French cleat system for hanging shop-constructed tool supports. I took on the task of organising my expanding collection in my small shop by attaching a plywood backing to a shop cabinet. With evenly-spaced French cleats running down the plywood, I could start to conjure up supports using offcuts and neglected materials. During this process, I came to three Stanley tools without a home: No.63 and No.64 spokeshaves and a No.66 beading tool. All three are similarly styled with hand grips flanking the left and right of a centre cutting device. The similar design between the three lends well to two simple upright pieces attached to a French cleat from the back with half-circles to retain the hand grips.

The beading tool was supplied with numerous pre-cut beading stock blades, a few unshaped blades, plus some accessories to aid in certain linear and non-linear beading operations. My goal in building the support for this tool was to store the blades and accessories together, rather than separately, which would spell disaster for accountability when it came time to put the tool to use.

The design is simply two sides and a bottom (a half-carcase), plus a basic mitred drawer. The tools sit in half-circles shaped into the sides to cradle their individual handles. The drawer sits underneath the tools to contain the blades and accessories for the beading tool. For

materials, I used what I had on hand. The half-carcase is leftover home-centre-purchased white pine and the drawer is camphor laurel offcuts.

Though simple in design, the hand-cut joinery used is deliberate. Natural forces are to be accounted for, even when tackling the simplest of pieces for our shop. I took advantage of the gravity-defying wedge shape of the dovetail by making the tails in the side components. They may look a bit like a bad overbite, but these dovetails will hold securely for years. Once cut, refined, and glued together, my half-carcase accepted the French cleat adaptor to the back with two woodscrews.

To shape the half-circle tool rests, I used a chisel to cut a V-shaped slot into the sides, leaving space between each slot to allow distance between the tools. A fine rasp worked the slot from a V to a rough half-circle. Finally, I came through with some sandpaper wrapped around a piece of dowel to smooth things out. It may not be pretty but it is functional and the tools will not slide off the edge of the tool support.

The thrill of this project was in the construction of the mitred drawer to hold the accessories. The tiny workspace I call my shop is unable to hold a mitre or tablesaw with a bevel adjustment feature. Even the humble mitre joint must be cut and refined by hand. With a sharp chisel, a 45° guide block, and proper workholding, the task is a breeze.

Many ways to cut a mitre

Take note: there are many ways to cut a mitre joint by hand. There are easier ways than I describe here that involve a special mitred bevel shooting board. At the time

of this project, I had not yet built one, so I used what I had on hand.

To begin, I sized the box components out using the completed half-carcase as reference. I cut close to size, and then used my shooting board to square the cuts and shoot the final lengths. I then set a marking gauge to the thickness of the components. On each component, I scored a line on the inside face of each side. I prefer scoring a line rather than using a pencil line. The 45° guide provides a slope for the chisel through the waste and the best way to line up the guide is by using a wide plane blade inserted into the scored line. I can then butt the guide against the back of the plane blade and use a clamp or holdfast to secure it. A pencil mark does not provide the same positive stop.

With the guide in place, I hog out most of the waste coming cross-grain with skew cuts. A skew cut is less likely to splinch on the opposite end of the components. Once I know I have about 2-3mm left to remove, I switch to using my chisel against the guide block. With thin passes, I remove the final amount of waste to achieve a perfectly mitred box corner. The bottom is held in with a rebate that I cut with a combination of chisel work and my Japanese shoulder plane (sakuri kanna).

Rather than planing the drawer to fit, I used 120 grit sandpaper to thin both sides out gradually until it slid back and forth comfortably in the half-carcase. To make a pull, I used the same grit sandpaper wrapped around a circular object and unceremoniously sanded a dip into the middle of the drawer. Finally, I moved the accessories and blades to their new home and hung the tool holder in place for it to begin its life of tool organisation. No finish was applied as I did not find it necessary in this shop piece.

Although an extemporaneous project, I believe it came together nicely. It finally gave a home to three wonderful tools and allowed me to recover some work surface on another tabletop. Cutting mitred bevels by hand was a first for me and while the process took some time, it was intuitive. I will invest some time in the future to build a shooting board specifically for this task. With the tool holder hung, I will see how the layout works for me and continue building more holders as needed.

Follow Christopher @imnotanexpertatthis.



Christopher prefers scoring a line to using a pencil to mark up the mitres (above). Heavy cuts from the side with a skewed angle (right) making for quick work and no splinching





Paring down the final material at an angle is the satisfying cherry on top of a mitred joint (above). The sides called for a rebate (left) at the top to allow the beading tool to fully seat. A rebate block plane made quick work of the task

Welcome Frankenbench

Wanting to replace his old bench, *Ethan Sincox* stretches the limits of his car and his workshop



Ethan (aka The Kilted Woodworker) at his new Plate 11 bench (left), with his QM04 lamp holder to his left, replacing his old bench which acted as something of a shelf for filing cabinets (right). The new bench was an early one by Mark Hicks, with sliding dovetails as well as through tenons on two legs (below)



As I pulled up at his shop on a hot and humid Missouri summer day, Mark Hicks, the owner of Plate 11 Workbenches, asked the simple question: “Do you really think this is gonna work?” Earlier in the year, at the 2017 Hand Works event in Amana, Iowa, he and I had discussed the sale/purchase of one of his surplus workbenches. It was actually his first bench, where he experimented with legs that attached to the top with a through mortise and sliding dovetail versus legs that attached with just a through mortise, so this bench had two of each. Being the first, that also meant the leg vice used Lie-Nielsen hardware, which is no longer available for individual sale. These days, Mark uses Benchcrafted vice hardware. Because it was a practice bench, used old hardware, and was beat to crap, he agreed to sell it for a good price. But I had to get it home from his shop. I had a plan for that. Mark wasn’t so sure it would work.

And so, when I pulled up at his shop in my 2009 Toyota Venza crossover, he voiced his concerns. “It’ll work,” I replied, with not quite an air of confidence.

You haven’t doubted me, have you kind reader? It did work. Of course it worked! I was even able to close the hatch and drive home in air-conditioned comfort, with my new workbench as my co-pilot. Literally, I mean. The front of it was right next to me, on

the fully-reclined passenger seat. I locked it in place with all of the ratchet straps I had with me and headed out, leaving Mark as bewildered as when I had arrived. Three hours of cautious driving later, a woodworker friend helped me unload what I would quickly come to realise is the most important tool in my shop.

Bold claim

I suppose that might seem like a bold claim to some, but maybe not to anyone who has read *The Anarchist’s Workbench* (or the preceding *Anarchist’s Tool Chest*) or who has followed Chris Schwarz’s blog for the last couple of years. Whether you’re thinking about building a new bench, wanting to update your existing bench, or just love good writing, you’ll find what you need in that book.

As you can see, my shop is pretty small (about 12ftx14ft), so the new 7x2ft workbench takes centre stage. Since I don’t have a table saw, planer, or jointer in the shop, I’m quite alright with that. The old ‘workbench’ was an Amazon purchase from many years ago, a commercial bench made by Jet that really wasn’t much better than a dining room table. It shifted to a position against a wall where it provides an excellent surface for all of my vintage small parts cabinets and often-used reference books.



Driving home from the Plate 11 workshop in his Toyota Venza, Ethan had his new bench as a co-pilot (above). He upgraded the leg vice with a Benchcrafted model (below), with the chop made from a slab of crotch walnut



Ethan accidentally left the new workbench's planing stop at Plate 11, but it was easy to replace with a mahogany block (above). As well as a new Benchcrafted leg vise, The Kilted Woodworker added a stool to one side inspired by an antique cast iron swing-out seat (below) discovered on ebay ramblings and only needing a wooden seat



Even as it was, in its full Frankenbench glory, I still realised some of the benefits of having a proper workbench. Weighing 200lbs more than my first one, I no longer had to chase it around the shop during planing sessions. This was also my first bench with a full leg vice, which made work holding that much easier and more secure. I accidentally left the planing stop at Mark's shop, but it only took me 20 minutes to fit a new block of mahogany into the planing-stop mortise. Then I had a second new work holding method available to me!

Replacing the leg vice hardware

Even though it already had a leg vice, I really wanted to upgrade it to a precision Benchcrafted (Benchcrafted.com) screw and, while I was at it, replace the chunk of maple Mark had roughly shaped for the leg vice chop. Since the existing chop did already incorporate the Benchcrafted Crisscross, a device used to ensure the chop stays parallel to the leg, I had to custom-order, just the vice screw. While I waited for the hardware, I started working on the vise chop, a 10x32in slab of 10/4 (2 1/2in thick) crotch walnut from a log my brother and I harvested off the family farm. Once the hardware arrived, I got right to work on it. The instructions included with the hardware are thorough! Within a few hours, I had

the chop installed. A few months later, I found a section of slab from that same part of the tree and replaced the original sliding deadman, as well.

The opposite side of the Plate 11-ish bench has been updated for comfort! During one of my ebay ramblings, I stumbled upon an antique cast iron swing-out seat. It was generally rust-free and in good condition except that it was missing the wooden seat. Of course I went back to that crotch walnut and cut off another piece! After an hour or so of work, my new seat was done and mounted to the cast iron.

Over the last few years I've made a few less obvious additions to my workbench. They might not be big additions, but they've all been very useful. As it turns out, my most useful addition was my shop light/small tool holder I wrote about earlier this year in QM04. I've also added a few hooks and pegs to hold mallets and bench brushes. I especially like the hook that holds my 16oz mallet because I carved it myself using a 'Y' section of branch I pruned from a plum tree on the farm.

The most nerve-wracking update to my bench was perhaps one of the simplest I could make. Several years ago, I managed to snag a beautiful antique bench holdfast (similar to the Record 145) from Patrick Leach, a tool dealer and friend I've mentioned



The most useful addition to the new bench was the light/small tool holder featured in QM04 (left). A 16oz mallet hangs from a hook made from a Y fork (above) from a pruned plum tree.



Ethan snagged his antique bench holdfast (above) from Patrick Leach a few years ago, so he can hold down a workpiece without the need for a noisy whack. But his favourite upgrade has been a brass disc (right) engraved by Jenny Bower



before. I wanted it because I sometimes work late or early hours in the shop and, when I do, I try to keep the noise down so I don't wake neighbours or my son. I figured with such a holdfast, I could easily secure work to my bench without the resounding whack from a mallet my traditional holdfasts require.

But let me be honest here... it's also a beautiful piece of kit and you might know by now that I'm drawn to such things like a moth to the flame. An exhaustive search of the Internet produced a total of TWO similar holdfasts (one nearly identical). Both were possessed by Chris Vesper (vespertools.com.au), who had found his locally (Australia) at a car boot sale.

Holdfast problem

The only problem with the holdfast was that it required a 1in hole and all of the holes in my bench up to that point were $\frac{3}{4}$ in in diameter (and made by Mark). I wanted to be sure I made the hole proper-like, so I splurged and bought a 1in Wood Owl Ultra Smooth Tri Cut auger bit. It made short work of the job and it couldn't have been any easier, even in 3in-thick hard maple. Upon using the holdfast a few times, I realised I could crush wood fibres at the bottom of the hold quite easily if I really cranked down on it. After lots of thought and a few Google searches, I found

a woodworking store (Highland Woodworking, out of Atlanta, Georgia – highlandwoodworking.com) that carried extra mounting flanges, like the Record 145 uses. They were sized for the bench holdfast they carry and that required a 1in hole, as well.

Thus far, all of the upgrades have made my wonderful bench even better than it already was! They have, in their own ways, made my shop time more enjoyable. So much so that I wouldn't hesitate to recommend any of them to another woodworker. The only upgrade I made to my Plate 11-ish bench that did nothing to make the bench more useful also happens to be my favourite upgrade. After getting permission from Mark to modify his idea slightly, I sent a request to my friend, Jenny Bower (jbowerengraving.com), who you might remember from the cover of QM04. I asked Jen if she would make me an engraved brass disc to properly formalise my Plate 11-ish bench. It was worth every penny.

You can follow Ethan's woodworking adventures via Instagram @ [thekiltedwoodworker](https://www.instagram.com/thekiltedwoodworker). For more pictures of large objects he has transported in his Toyota Venza, you can check out the hashtag [shiticanputinmyvenza](https://www.instagram.com/shiticanputinmyvenza), also on Instagram.

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SHARPENING • RESTORING Honed

Setting up for Better Edges

Asked if a woodworker needs a dedicated sharpening set-up, *Richard Wile* offers valuable advice

I am frequently asked if a woodworker needs to have a dedicated sharpening workstation to sharpen properly. The simple answer is that no, you do not, lots of quality sharpening and edge preparation occurs on the side of a bench, on a log or wherever the job site is. The trick though is to actually sharpen; many of us put off this vital task as long as possible, in the end making more work for ourselves. To me a sharpening workflow needs to be efficient and repeatable. Efficient to minimise the time it takes to replace a sharp edge, and repeatable so that we are sharpening exactly the same edge, at the same angle every time. Reducing the effort and time it takes to sharpen will go a long way toward making it less of a chore. Obviously, a honing guide helps with the repeatability aspect and I advocate using one for those of us who do not have the skill or ability to freehand sharpen; myself among them.

The ideal set-up for the most efficient workflow is to have a dedicated sharpening set-up that is ready to go at all times. Then it is a matter of moving to that area and quickly honing the edge and getting back to work. This allows me to keep my stones, guides, and lubricants all in one place so I do not spend any time setting up or looking for things. I just mount the blade in the guide, hone the micro-bevel and return to work. If I don't wait too long to sharpen it's a few passes on the honing or polishing stone to restore the edge, lap the burr off and back to work with a sharp tool. If the edge needs more than a quick hone, everything is there to prepare any edge. If you are using waterstones that need to be soaked, you will need this to be near your water source or bring water to the stones in a pond or tray.

Many will locate or store their sharpening kit near a sink or other water source for convenience. Though most stones should not be stored long-term in water. Many woodworkers use diamonds or ceramic stones that just require a



Richard Wile is a life-time woodworker and luthier living in Nova Scotia, Canada. He focuses on research, writing & teaching, often with an emphasis on sharpening

quick spray, where water is not readily available. Oilstones do not need a water source nearby and will not freeze or rust tools in an unheated shed. In small workspaces, there is increased concern of oil contaminating the wood in your project; just one of the many reasons that water stones and diamonds have become as popular as they are.

Not everyone has the space or even a shop to accommodate a dedicated sharpening station, but that does not mean you cannot be just as organised. Create a portable sharpening station to bring your sharpening kit to the work when needed and then it can be stored away when finished. Use a board large enough to hold your main stone set-up, whether it's two or three stones, and your grinding stone if you use one. Don't forget to keep the stone lapping set-up handy to keep your stones flat. For me that's my 400 grit

diamond grinding plate. A simple flat board with some non-slip matting is the minimum necessary to hold a few stones, a guide and lubricant. Find a place to slide this out of the way under the bench, in a drawer or wherever there is space. Then it will be quickly at hand when it's time to sharpen an edge. Many woodworkers will even build a sharpening support board that fits over their sink, providing ready access to water and making cleaning up a breeze.

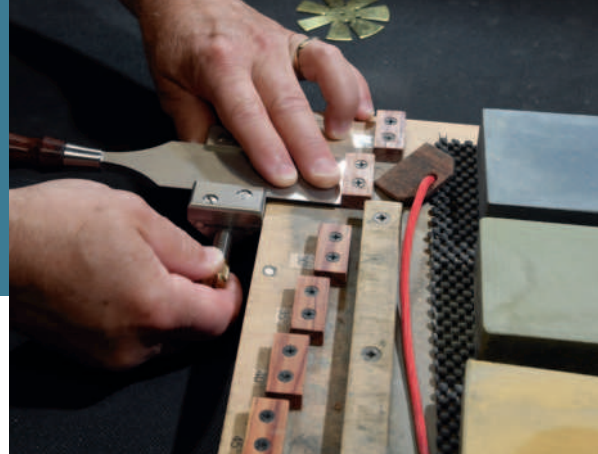
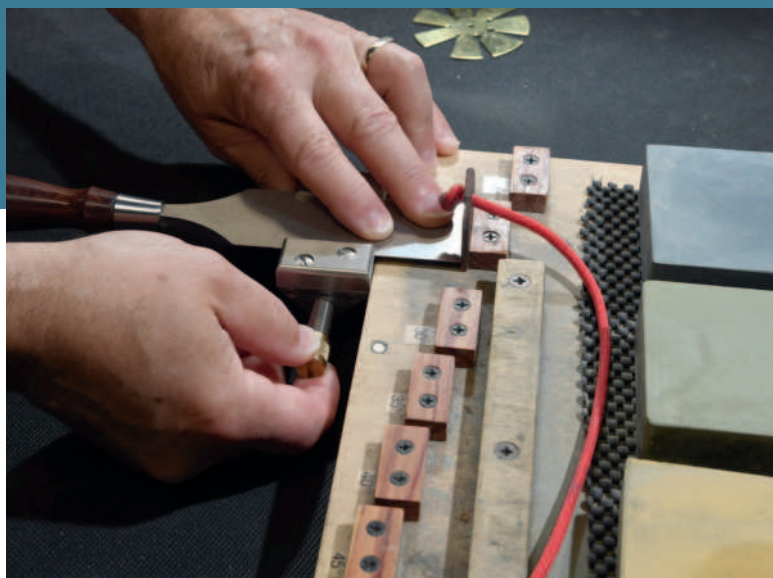
The more convenient the set-up, the more likely you will be to sharpen when needed and not put it off longer than you should. If it means simply picking up the board holding your stones ready to use, you are more likely to do it; having stones, water and guides stored away makes an easy excuse to put off an overdue honing.

Efficiency and repeatability are the keys to a good sharpening workflow, looking at your sharpening process to improve these aspects will make it easier for you to achieve that perfect edge.

Jig protrusion

Woodworkers I meet will often ask if a protrusion jig for their honing guide will speed up sharpening? Much of the criticism of the use of a side clamping honing guide comes from the extra steps necessary to set the blade in the guide and get the protrusion exactly right every time. All this is time spent not sharpening the edge, adding to the time it takes to sharpen. In over three decades of sharpening, I have not developed the skill to get the blade exactly the way I want freehand so a guide is a necessity and so it is important to make its use as efficient as possible.

Using a protrusion jig that is suited to your specific needs can make the blade setting process very quick and efficient. A simple protrusion jig with a single angle can be set-up for the primary bevel on one end and the micro-bevel setting on the other end. This set-up holds the



This set of stops for each of the common angles is attached to the sharpening board so it is always handy to securely set the blade to the required angle for honing. Attaching a small shim of 3-4mm with a string provides handy access for shortening the protrusion to give a micro-bevel of 2°-4° for final honing or polishing of the edge. Having a dedicated sharpening station can go a long way towards reducing the time you need to sharpen your tools



When there is not enough room for a dedicated sharpening station, your sharpening kit can be organized on a portable board and stored close to the bench or even a water source. Keeping stones, guides, lubricant and other accessories in one location makes sharpening an organised affair



blade exactly in place while the guide is referenced against the edge and tightened up. A process that takes seconds and the blade is registered in exactly the correct orientation. The edge is then taken directly to the stones and quickly honed. I have demonstrated this process to take less than a minute from start to finish. This kind of workflow efficiency will ensure that when an edge needs to be sharpened, it will not be too disruptive to the actual woodworking at hand.

Many find that setting a blade in the honing guide is a fiddly step taking too much time. Either of the types of jigs shown here will hold the blade securely and safely in place while the guide is brought to the jig and tightened on the blade. This reduces the amount of time spent holding everything in place, and virtually eliminates the risk of a cut.

Most guide manufacturers publish the

exact amount of protrusion for the blade to achieve the required angle. These measurements can be used to fix wooden stops on a handheld board or directly to your sharpening set-up for an even easier set-up. A thin strip of wood (3-4mm) serves as a shim to shorten the protrusion slightly to alter the angle by a few degrees to create the micro-bevel. Should you choose to make a few different types of jigs for various applications, be sure to match the protrusions exactly so your angles stay the same regardless of the jig you pick up.

Taking the time to create a set-up to quickly set the protrusion of the blade in the guide will pay back many times as it improves the efficiency and repeatability of your sharpening workflow, making the choice to sharpen when necessary, an easy one to make.

Follow Richard @rdwile on Instagram.



A small jig for a specific angle, with the primary angle on one side and the micro-bevel on the other is handy for the shop or in the field

Repair Your Own Blades

Fed up paying for new bandsaw blades when a good one breaks, *Sean Hellman* brazes his own



Start by grinding the end of the blade at 90°, in this case against a small jig (left). You can do this on a disc sander. Keep the teeth of the blade upwards as you grind the angle (above). Don't worry too much about the exact angle on the ends (right)



Unfortunately, it happens all too often: a bandsaw blade breaks while it is still sharp. This is more likely with narrow blades of $\frac{1}{4}$ – $\frac{1}{2}$ in. It is rare that anything wider than $\frac{3}{4}$ in breaks while I am using it. Every time a blade breaks on my small bandsaw, that would be another £10 to £15 for a new blade, but I have saved money by repairing them and have also prevented waste of this valuable resource. Abutting the two broken ends and brazing them together is quick and easy to do, once your materials and jigs are set up, and it is a task worth undertaking.

Some models of bandsaw have a welder built into them. This, or a stand-alone unit will make it quick and cost-effective to repair a bandsaw blade, or even to make your own bands from bought reels of blade.

When a band breaks, the first step is to decide whether the blade is worth brazing together. If it has broken due to being snagged on the wood that was being cut, then the blade might be kinked and bent in such a way that it cannot be made straight again. If the blade is unkinked, use a disc or belt sander to prepare the ends.

Make sure the sander table is set at

90° to the abrasive (Pic.1). Ensure that the ends of the blades are presented at 90°, and then grind each end square. Grind the minimum amount away, as you do not want to make the blades too short. I use a Robert Sorby ProEdge with a workshop-made 90° guide.

It is possible to braze the ends together as they are, but this weld will not be as strong as one that covers a greater surface area; so, taper the ends on the flat sides of the band, and grind a chisel-grind at 20° or so.

Don't get hung up on the angle, approximately 20° is fine. I have seen people make all sorts of fancy jigs for this purpose, but I like the KISS principle: Keep It Simple, Stupid! So I clamp a small, square piece of wood onto the table at 20° to the abrasive, with one corner of the wood just touching the abrasive.

With the teeth of the saw uppermost (Pic.2), insert the end of the blade between the wooden guide and the abrasive, making sure that the spine makes full contact against the table. It can be difficult to hold this firmly, due to the length of the blades.

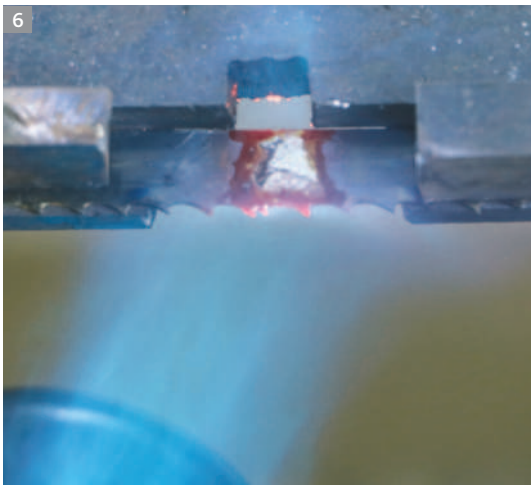
Grind the end to a sharpish edge (Pic.3).

Check the grind, turn the blade around and grind the other end.

After grinding the join, do not touch the join as oils from the fingers can hinder the flow of the solder. The blade is now ready to braze the ends together.

To carry out the brazing, you will need: a gas torch of some kind, silver solder and a compatible flux, belt or disc sander and/or a small rotary tool with a sanding drum or grinding burr, and a jig to hold the blades in place when brazing. I use 455 solder, which is a low temperature solder with a melting point of 630°C to 660°C. I use flux with a melting point between 550°C and 800°C. You will need to make a jig to hold the blade in position (Pic.4). The jig needs a) to hold both ends of the back of the blade (the spine) in alignment at the join, and b) to hold the sides of the blade flat, so that the tapered joins at each end are held as close together as possible.

To make the jig: I use a piece of Ground Flat Stock (GFS), which I clamp to my grinder table. This holds and aligns the spine of the blade in place. A length of Angle Section (aluminium or steel) can be used instead, but make sure that the internal right angle is square and true.



You will need to make a simple jig to hold the jig in position (above) to the table of your grinder. A length of Ground Flat Stock is clamped to the table. Notice how a notch has been cut on the edge of the grinder table so you have access to the blade. Dip each end (above right) into flux, or paint on flux paste. The blade needs to be brought up to temperature quickly (left). Afterwards a burr or drum sander in a rotary tool (right) clean and level up the joint



Any suitable flat and straight heat-proof material can be used for the jig. I have cut a notch in the middle of the edge of my grinder table, to rest the GFS when brazing. This enables access to the join in the blade, from above and from the underneath, when brazing.

Clamp the length of GFS to the table (Pic.5). To braze the abutted ends of the blades it is best to practise this on sections of unusable blades before brazing a good one. Wet each end of the blade and dip into flux. The flux will stick to the ends. If using a paste flux paint this onto the bevelled ends of the blade.

Place the blade onto the jig with the spine of the blade aligned against the GFS. Make sure that the ends are overlapping and are as close as possible to each other. Clamp to the table. I use a narrow piece of metal under the clamp and on the blade so that the teeth of the blade are not bent, changing the set on the blade.

It is important that the join is clean. Heat the join with a blowtorch.

The size and power output of the torch (Pic.6) used is important. The blade must be brought up to temperature, quickly. Touch the silver solder onto the join. On a

flat surface, the solder will flow toward the hottest part of the blade. It should be the heat from the blade that melts the solder, not the heat from the torch, so that the solder melts and runs into the join leaving a little mound of molten solder on top of the blade.

Alternatively cut off a 4-9mm length of solder and place it on the flux above the join before heating the blade. This flow of solder can happen in a blink of an eye. Observe closely, and then let the blade cool, but do not cool it with water as this can make the joint too brittle.

Troubleshooting

- Not applying enough heat, is a problem.
- Another is that the jig may be acting as a heat-sink so that the blade does not get up to temperature to melt the solder; in this case, use a bigger torch or flame. Sometimes the solder will not run, and if this happens, cool the blade, regrind the ends and then start over.
- I have found that not using enough flux can also be a problem; the solder just balls up, stubbornly refusing to flow. Practising this task beforehand is time well spent.
- If you overheat the flux or heat it for

too long, the solder will not run into the join. Overheating will cause it to lose its effectiveness.

Now, the join will need cleaning and levelling (Pic.7). I initially carry this out with a belt grinder and then complete with a burr or drum sander attached to a rotary tool. There must be no bumps nor hollows on either side of the blade, or at the spine.

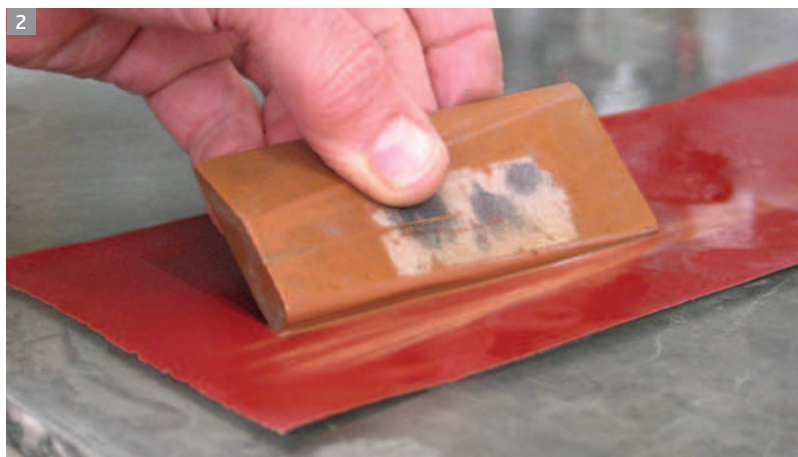
The teeth at the join may well look odd: for example, two teeth close to each other. This is not a problem. I enjoy brazing. I have noticed that if the blade breaks again (and I use my blades heavily) it always breaks in a different place - proving that my brazing is well done.

In the next issue of *Quercus*, I will be describing how to sharpen bandsaw blades, using tools that you might already have in your workshop.

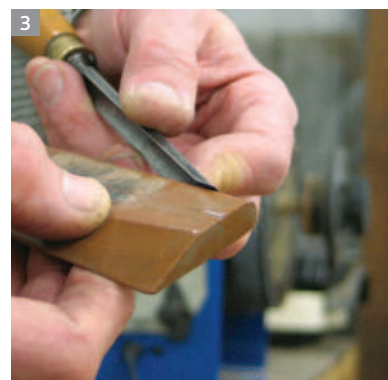
Sean Hellman is a woodworker, and author. His most recent book, Sharp, is a comprehensive guide to sharpening all edge tools, available from www.seanhellman.com. At £25 plus p+p, in the UK and abroad.

Sharper In-Cannel Gouges

With carvers in mind, *John Lloyd* explains how to sharpen gouges with the bevel on the inside



Carvers' gouges normally have the bevel on the outside (right in Pic.1, left), while patternmakers' gouges have the bevel on the inside, and are used like curved paring chisels. It is easy to shape a waterstone slipstone (above) on wet & dry paper to match your in-cannel gouges because they are relatively soft. The edges are often tapered to offer a range of radii for different sizes of gouge. Holding the gouge still (right) and moving the slipstone is the way to go. It is relatively easy to hold the chisel at an angle and rotate it if necessary. Slipstones are soft, so you may prefer to hone away from the edge if it is digging into the stone too often



As with all areas of woodwork, if you're using an edge tool, which is most of the time really, you need to know how to sharpen it to 'razor sharp' if you're going to have any chance of it cutting anything accurately and crisply. If you find sharpening flat things, like bevel-edge chisels and plane blades a bit of a challenge, things aren't likely to get easier when you're dealing with gouges. So we need a cunning plan. The cunning bit comes later in the process, but first of all we need to be able to hone the edge until we get that vital "I've actually managed to get it sharp" indicator, a 'burr'.

As always it is the burr that tells us that we have actually been working on the cutting edge because the steel has become so fine that it is curling off the edge creating that burr, which can be felt by running a finger, or actually, more often, a thumb across the edge. Honing a bevel-edged chisel or an ordinary carving chisel usually just requires a flat benchstone, perhaps aided and abetted by a grinder of

some sort, but sharpening a gouge that has the bevel on the inside of the curve requires a curvaceous sharpening stone, ideally with a radius that is a little smaller than the curve of the chisel.

Using slipstones

The stones used for this are called 'slipstones' and the ones that I use are rather clever little waterstones that have a 'V' shape of varying width along one long edge and a curve of varying radius on the other.

The useful thing about using waterstones is that, apart from their usual properties, it is easy to modify the stone's shape to something close to the shape of the gouge. Just use a piece of approx. 240 grit Wet & Dry paper on a piece of glass, wet the glass first to make the paper stick and give the abrasive a quick squirt of water too, it is then very easy to use the paper to modify the shape of the slipstone by rubbing the stone back and forth along the Wet & Dry whilst also rocking it from

side to side, to achieve the required curve, which should be a little smaller than the curve of the gouge.

Hold the slipstone against the bevel, adjusting its angle until it's making contact with the cutting edge, now hold the gouge still and move the slipstone up and down the bevel whilst at the same time rotating the gouge a little from side to side so that the whole of the cutting edge is honed. Having dealt with the bevel, the 'back' of the blade also needs some attention, which I find is easiest to do with the flat face of the same slip stone; just rub the stone up and down the back face of the gouge whilst rotating the gouge, ensuring that the full width of the gouge is worked on.

Using a Tormek

At this stage a Tormek can be brought into play if you have one, or rather, if you have one that's fitted with the small leather honing wheel with a radius edge. This wheel is dressed with oil and honing paste



Use a strop for a razor edge, either on a profiled wheel with a Tormek (above left, Pic.4), or by forming your own honing station (above, Pic.5), as John discovered when working on a National Trust property. Use honing paste (Pic.6, Pic.7 & Pic.8) to produce the ideal razor edge (Pic.9)

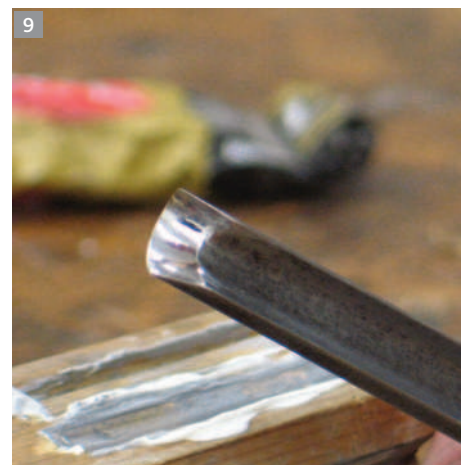


or chrome cleaner and will polish the honed edge to a mirror finish and produce a lovely sharp edge. But if you don't have a Tormek you can have a bash at the cunning plan that I mentioned earlier which also requires some chrome cleaner, but you can replace the Tormek with a piece of pine!

This is a trick that I came across on the ends of some softwood battens that were forming temporary shelving for a carver who had been recreating some missing ornate architraves at a National Trust property where I was working at. I just noticed that the ends of the battens had shapes carved into them, but oddly, the shapes were covered in a grey/white, crusty substance. After a little bit of 'Sherlock Holmesing' it became clear that the carved shapes were in pairs that were the matching curves of the inside and outside of a carving gouge, and the white crusty substance looked suspiciously like chrome cleaner, so it seemed that what I had found was a custom made carving-gouge sharpening station.

When I got back to my workshop I had to give it a whirl and found this ridiculously simple idea to be ridiculously effective and I've used it ever since. It's a technique that was designed to be used for carving gouges but it also works really well on an in-cannel gouge, just carve the shape of the inside and outside face of the gouge into the end of a piece of pine and add a squirt of chrome cleaner to make the pine into a shaped burnisher that exactly matches the curves of the gouge. Just make sure that you find the point where the bevel or the back is sitting flat on the softwood, the chrome cleaner squeezing out from under the gouge can give you a clue here, and make sure you don't lift the gouge as you pull it back along the softwood, because this will just round over the cutting edge and make the next honing session unnecessarily long winded.

Catch up with John Lloyd by visiting johnlloydfinefurniture.co.uk or by following [@john_lloyd_fine_furniture](https://www.instagram.com/john_lloyd_fine_furniture) on Instagram.



Joining Up The Temples

Continuing his work restoring a traditional Japanese house, *Dylan Iwakuni* shows how joints are recut

After withstanding the elements for close to a century, damage and wear are inevitable. Having disassembled a traditional Japanese house, we are currently in the process of repairing and reworking the materials. Once the necessary repair and modifications are done, the structure will be reassembled and stand as a 'Chair Library' in Yamanashi, Japan as discussed in QM05.

Observing the darkened wood, the signs of age and wear were clear. With a desire to continue using as much of the original parts as possible, necessary repairs had been done.

Over the years, many of the parts have twisted and warped. If left as the pieces are now, we would likely face a difficult time reassembling them later.

However, if the pieces are adjusted too much, it will leave excessive gaps. Adjusting it has been a delicate balance, taking off enough wood for joints to fit but no more than necessary.

The first step has been to check how much the pieces have twisted. With a spirit level in hand, both ends were checked and the part positioned to be roughly in the centre. Being careful with the amount to remove, both ends were shaved as necessary. With the 'Sashi Kamoi', the outside of the beam is inserted into a shallow cut-out into the post, requiring both the outside surface and tenon to be adjusted.

Some unlucky parts had their tenons



damaged, which would prevent the joinery from functioning. As the material itself was fine, only the damaged tenon had to be repaired. For a particular one that had split, a dovetail key was inserted, locking the split wood and fixing the small mortise for the pin. The mortise was trimmed to size after the dovetail key was inserted, allowing the pin to pull once again and function properly. A piece of hardwood was used for the dovetail key and firmly glued into place.

Another tenon had completely cracked, making it necessary to remake it entirely.

A new piece of wood was cut in the original size and shape of the tenon, but longer. The original cracked tenon was cut off, the outline of the new tenon marked and chiselled to receive the new piece. Once the fit was firm and straight, the new tenon was glued into place and a round pin added for extra security.

For pieces that had completely cracked leaving them unusable, like some of the small posts, a replica was made. This task turned out to be more tedious than I had initially expected. Many of the tenon shoulders were angled and shaped to fit curved beams. Furthermore, some guesswork was required to get the original shape, due to the cracks and movement of the wood. Taking careful notes of the dimensions and orientations of the parts, exact new copies were made.

Damaged areas are not the prettiest. One post was structurally still usable but the surface was damaged. A new thin layer of wood was patched, covering the damaged area. As it is best to remove as little of the original part as possible, the new piece was cut following the shape of the damaged area. The patch piece is made first, then the shape outlined onto the material and cut accordingly. The patch is made slightly thicker, leaving enough material to be shaved down flush after it is fixed into place. One such patch was rather complicated, covering three sides with numerous angles and steps. It took some



Tidying Workspace

We can always use a little organisation. My workspace had become slightly messy, tending to put my tools wherever there's space, and saws especially take up space. So, seeing the other carpenters use a saw stand like this, I decided to make one. Once lunchtime came around, I found a scrap piece of wood and cut out several lines with the circular saw. Within a few minutes, I had myself a saw stand and more importantly, a neater workspace. This stand slides in between the stacked lumbers, making it compact and easy to move around. Furthermore, storing the saws vertically is the best for the saws. Organised tools lead to an organised and motivated mindset, which in turn leads to good work.

We used a few simple tools for the task, being careful not to take off more wood than necessary. I used a kiwa kanna (shoulder plane)



fine-tuning but I couldn't be any happier with the result and as a bonus, the grains matched up rather nicely.

Certain sections of the beams had utterly rotted. With a big tree overhanging a part of the roof, the fallen leaves had probably clogged the rain gutter, leading to overflowing water and damaged wood. As it was only a section of the beam with damage, the damaged section was replaced rather than the entire beam.

Replacing just a part means the new material has to be connected, the joinery for this task being the 'Kanawa Tsugi'. Marking the lines on the old material was a little troublesome. Not having a reliable flat surface means all the necessary lines have to be marked from a straight reference line on the material. Not knowing if the markings are accurate until the

joinery is cut and assembled is always nerve-wracking. After the difficult task of marking the old material, marking up the other half, milled and squared, was a walk in the park. The original carpenters had only roughly milled lumber to work with. Reflecting on this simple fact gave me an even further appreciation of the skills and expertise of the carpenters before us.

It is remarkable to think my work will remain on parts from a century ago, continuing another chapter of their long story. Looking at the bigger picture, this process of repairing where necessary (photo, right) is what has allowed traditional Japanese wooden architecture, particularly the Shrines and Temples, to stand for centuries.

Follow Dylan on Instagram @dylaniwakuni.



Many of the pieces, such as this beam (above left), had warped with time. As it would be difficult to fit the materials in this state, some adjustments had to be made. Both ends are checked with a spirit level to look for twists. Shaded in red (above) are the areas which need to be adjusted. In this case, taking 1.5mm off the tenon and 3mm off the outside of the material. The beam adjusted (above right), compensating for the twists and warps



This unlucky tenon (above) had completely cracked, requiring the entire tenon to be replaced. A new piece of wood (below) to replace the tenon was made. In order to reduce the depth chiselled out from the original material, a step was made



This tenon had split, preventing the mortise for the pin from functioning. To hold the tenon together and to allow the pin to pull once again, a dovetail key was inserted





8

The new tenon firmly in place (above). After it was glued in, a round pin was added for extra measure. Making mirror images of the broken materials (above right). The dimensions and shapes were measured and made exactly the same



9



14

The joinery cut out on the old beam (above). The old materials were slightly difficult to work with, due to the irregular shape and the materials being hard and very dry. The repaired beam (below) will be shaped later to match the original



10



11

Patching up a damaged surface of the wood (left). The new piece of wood is cut roughly following the outline of the damage. With the outline of the patch copied, the material is cut (above). Care is taken to remove as little of the original material as possible



12

The patch inserted and shaved down flush with the material. Once the freshly inserted material is weathered with time, it'll hopefully be difficult to tell it was patched



13



15

"The turner takes a cut using a long-handled hook tool as the blank turns towards them"



"Once the outside has been turned the bowl is fitted back on the lathe to hollow the inside"



"Forging gives me the freedom to make the exact sizes required for bowls and end-grain cups"

The Medieval Craftsman

Recalling his fascination with the pole lathe, *Gary Baker* reveals how he now turns bowls by hand

My first experience of working on a pole lathe goes back to the Big Green Gathering at Warminster in south-west England in 1998. A Welsh pole lathe turner had set up in the craft field and I got to try my hand for the first time. I was fascinated by this traditional way of turning wood. I loved the simplicity of the technology and finding a smooth rhythm of work. However, life on a narrowboat meant that setting up my own pole lathe was complicated for the next few years.

In 2005, a move to France gave me the opportunity I'd been waiting for. I got a job working at Guédelon Castle in northern Burgundy, a 13th Century-style castle being built from scratch using medieval tools and techniques. The project is an example of experimental archaeology on a massive scale. Working in partnership with a team of archaeologists, the castle-building team is trying to understand better the work of medieval master-builders. My original role on site was at the tile makers', but clay just wasn't a material with which I felt at ease. At that time, the site didn't have a pole lathe and I suggested introducing a new craft. The pole lathe undoubtedly goes way back into human history, but the first illustration of a bowl turner at work can be found on a 13th Century stained-glass window in Chartres Cathedral, so it was fitting for a 13th Century construction site to have a pole lathe turner at hand. The bowls were needed for the castle kitchen, for use in the workshops and on site where the stonemasons use them to pour water onto the fresh masonry to keep it damp and prevent the non-hydraulic lime mortar from drying out too rapidly.

The site's carpenters made the first lathe. More used to building massive timber framed roofs, the finished lathe that they delivered was a solid piece of kit!

On a pole lathe a flexible branch is anchored to the ground and then angled above the lathe bed with a simple X-frame. The pole is attached to a pedal below the lathe by a rope. To turn a bowl, a blank is first axed out of half a log. A mandrel, with metal spikes protruding from one end, is then hammered into the centre of the blank. The mandrel and attached blank are now placed between the two metal points in the lathe's upright poppets. The cord is twisted around the mandrel allowing the blank to be turned when the pedal is pushed down. The pole then lifts the pedal up again, turning the blank in the opposite direction. The turner takes a cut using a long-handled hook tool as the blank turns towards them and then lifts the hook from the surface of the wood as the blank spins away.

Once the outside of the bowl has been shaped, the blank is fitted back on the lathe so the turner is in a position to hollow the inside of the bowl. The hook tools leave distinctive tool marks on the finished piece. The bowl is turned green and then left to gently dry. The subtle drying process is crucial; as the wood dries it gently warps into an oval shape, characteristic of a bowl turned from greenwood. The site's blacksmith forged the first hook tools for me, but I've since learnt basic forging techniques in order to



"A subtle drying process is crucial as the bowl gently warps into an oval shape"

forge my own. This gives me a lot of freedom to make the exact sizes required for turning bowls or end-grain cups.

Working model of a mill

It's been fascinating to work with the project's scientific advisors, including archaeologist and xylologue Pierre Mille. Pierre works for INRAP, the French National Institute for Preventive Archaeology. INRAP intervenes at sites earmarked for development in order to identify and study archaeological remains at risk of destruction. One such site in Jura along a high-speed rail link revealed the remains of a 12th Century water mill. INRAP and the team at Guédelon collaborated to build a working model of the hydraulic mill and initially my services on the lathe were required to turn the teeth for the mill's lantern pinion. I turned the cylinders forming the back of the teeth on the pole lathe using gouges. Ultimately the archaeologists determined that use of the lathe was anachronistic in this case and we made the following batch of teeth for the cog wheel using a drawknife.

The lathe has also served a purpose when new pulleys were required for the castle well. On a 13th Century construction site, wooden pulleys would also have been used on all the lifting machinery; however, safety considerations rightly dictate that all pulleys used at Guédelon must be modern and safety compliant.

Of all the pieces I've made for the site, my favourite has to be the pestle and mortar ordered by the pigment-maker. In it she crushes ochre found on site into the fine pigments used to paint the walls of the castle. I turned the pestle in beech and years later it has a beautiful patina, smooth and polished through daily use. At the castle I make objects that relate to the 13th Century, but for my own greenwoodworking business I use the lathe to make locking lid boxes, handled whisky cups, chair parts and stool legs.

Visit garybakerboisvert.com or follow @garybakerboisvert.

Shaping Pipes by Hand

In Part Two of making pipes by hand, *Steve Schuler* moves on to the art of shaping the outside

Drilling the inside of a pipe is a matter of craft; a technical skill. But making a pipe that looks good on the outside requires art, requires attention to lines, proportions, and textures, as well as a little whimsy.

Everybody knows what a pipe looks like, until they try to make one. Pipes come in many shapes, and you would do well to find a shape you like and try to copy it. You are not likely to come up with a pleasing shape that has not already been thought of.

The outside dimensions of the pipe are subject to only a few limitations, namely the size and thickness of the wood, and the location and angles of the holes. If you are using a wood other than briar, the walls of the chamber should be fairly thick, at least 1/4in (6mm). Briar pipes can be made somewhat thinner. Otherwise, you are free to make the pipe look however you please.

Beautiful pipes nearly all have a few things in common. First, the lowest part of the bowl is always just below or behind the bowl's centre-line. The pipe has no 'chin'. Also, the diameter of the shank is proportionate to the overall diameter of the bowl, usually one-half or one-third the diameter. The length of the shank is typically equal to the height of the bowl (from the top of the shank to the rim), or a little longer. On shorter pipes, the length of the stem is equal to the length of the rest of the pipe, that is, the stem/shank junction is in the very middle of the pipe. While there

are exceptions to all these rules, the vast majority of fine pipes follow them pretty closely.

Print out a picture of a pipe you admire, and go to work with your dividers. You will soon see that the pipe is designed (consciously or unconsciously) around a set of ratios in which each part is proportionate to the other parts, and to the dimensions of the pipe as a whole.

Although most pipes are shaped on lathes and are therefore round, there is no necessary reason that your pipe has to be either round or perfectly symmetrical. Some pipes' bowls and/or shanks are oval in cross-section, and others feature freehand curves. You are under no obligation to attempt to replicate lathe work with hand-tools. Because I am working with rasps and files, I have opted to make one of my pipes faceted, while making the others round.

Once you have drawn out your pipe on the block of wood, remove everything you can with a saw, but be sure to saw wide of your layout lines. Make a second drawing, or take a picture, so you remember what your pipe is supposed to look like after you have removed your layout lines.

Insert the stem into your pipe and make sure that it's not twisted. From here on out, you will shape the whole pipe as a single object. Otherwise, it is all too easy to make the shank



Steve uses five main tools (above left) for shaping a pipe: a large and small half-round rasp, a large and small half-round file, and a round file. Shaping the pipe (left) is just like shaping the stem's tenon. Steve begins by taking off the four corners to make an octagon. Then he takes off the remaining 16 corners to bring the shape close to round (above)



Last issue Steve (right) reached drilling the block and fitting the stem (above). Use a saw to cut away as much of the extra wood as possible

crooked. Try hard not to touch the stem with a rasp, however. Rasps leave deep marks that are hard to sand out.

Hold the pipe in a handscrew held upright in a bench vice. Working just as you did on the tenon, use a good rasp (or a small saw) to remove the four corners, leaving the pipe looking like two intersecting octagons with a chunk of unshaped wood at the bowl/shank junction.

Filing excess wood

Use a half-round rasp and then a rat-tail file to remove the excess wood between the two octagons. A good-looking pipe will have a well-defined junction between shank and bowl, neither too sharp nor too sloped. Err on the side of sharpness.

Now switch to a coarse file and remove the eight corners of each octagon. Then use the file to bring the pipe down to a genuinely round shape. While some pipes are true cylinders, many taper very gently toward the top of the bowl, giving the whole pipe a lighter appearance. Others are conical, flaring a bit toward the top. Shanks are more regularly cylindrical, though some will flare or taper toward the stem.

Clamp a dowel rod in your vice and set the pipe on it so you can shape the bottom. It is easy to leave too much material on the underside of the bowl. Good-looking pipes rarely have a 'chin'. You



Steve takes special care (above) to define the junction between the shank and the bowl of the pipe. Finished cherry wood pipes (right), waxed and ready to enjoy



can file off more material here than you think. Once both bowl and shank have been shaped to your satisfaction, it is time to sand everything smooth. Be sure to remove every last file mark and leave a perfectly smooth surface all around. Remember that you are sanding mostly end-grain on the bowl, which will need more thorough sanding than long-grain to achieve a smooth surface. I sand through grits from 120 to 1000.

Pre-moulded stems

Sand the stem thoroughly, too. Pre-moulded stems will require considerable sanding to remove the moulding marks. You may wish to alter the stem's shape with a file, but I usually just sand my stems. I start with 120 sandpaper wrapped around a foam nail-buffing board. Be careful around the button (the part that goes in your mouth), as it's easy to ruin its shape with errant strokes. Sand very thoroughly without skipping grits. You can sand as high as 1500 or 2000; such superfine sandpaper is available at auto parts stores. The highest grits should be lubricated with a little water to prevent the sandpaper from loading up with sawdust.

Buffing the stem with Tripoli compound will make it shine. I buff my briar pipes (both wood and stem) on a buffing machine. There are also buffing wheels available for drill presses, or you can use a hand-held rotary tool. In any case, set up the buffing wheel in

a stationary location, and move the pipe back and forth across the wheel. Use a light touch, and keep the pipe moving. A fast-moving buffing wheel can leave burn marks on the stem in short order. Above all, keep a firm grip on the pipe at all times. A buffing wheel can snatch the pipe out of your hand and fling it across the shop. I cup the pipe with both hands and keep a finger in the tobacco chamber when possible, moving the pipe back and forth underneath the spinning wheel.

Briar pipes are normally dyed to bring out the colour contrasts in the wood, then coated with shellac and waxed with carnauba wax applied with a buffing wheel. But a simple finish of Danish oil or paste wax is sufficient to make the pipe shine. On these pipes, I buffed each stem with carnauba wax and finished with paste wax. Just keep all finishing products out of the tobacco chamber.

Now it's time to pack the pipe with your favorite tobacco and light it up, enjoying the perfect intersection of craft and art.

Steve's favourite suppliers of briar wood, stems and other materials are Rawcrafted (rawcrafted.com); Vermont Freehand (vermontfreehand.com); American Smoking Pipe (webshop. amsmoke.com); J.H. Lowe (jhlowe.com). You can follow Steve Schuler on Instagram on [@steve_schuler](https://www.instagram.com/steve_schuler) or with his blog at literaryworkshop.wordpress.com.



Half of pipe-making is sanding. Steve wraps his sandpaper around a foam-backed nail-buffing board and sands through the grits (above). At the finest grits, a bit of water prevents the sandpaper from loading up, and it reveals tool marks that need to be sanded out. Steve buffs the stem with Tripoli compound (below) to give a final shine. He strongly recommends using a stationary buffer and moving the pipe along the spinning wheel



A pipe's shape will look most pleasing when the airway and the chamber (red lines, above top) do not form a right angle. The bowl/shank junction (yellow arrow) should be well-defined. The lowest point of the pipe (green arrow) should be just below or behind the centre of the chamber. Briar pipes (above) are dyed to bring out the figure in the grain. Pipe shapes can be conventional or creative, as long as they are drilled correctly

Self-Sufficient Woodwork

Echoing John Brown's mantra, *Nick Gibbs* dreams of becoming a Self-Sufficient Woodworker

I am a poor Self-Sufficient Woodworker, as my friend and *Quercus* co-founder John Brown hoped I might one day become. John once planned a book of that name, inspired by the workings of John Seymour, who had himself written *The New Self-Sufficient Gardener*, *Self-Sufficient Life* and *The Concise Guide to Self-Sufficiency*. John's allegorical instruction manual followed the fiction of a craftsman teaching a City executive how to use hand-tools to survive abandonment on a desert island after their ship sank. They were limited to one floating chest of tools and obviously no power. As I read Robin Gates' piece about dado and grooving planes, I am struck by how little I know about hand-tools, and have decided to set myself the challenge of building my own version of John's beached gear, and learn how to use and maintain the tools. Call it my quiet way to pay tribute to John and his planned book, and to make *Quercus* firm of purpose, *Tenax propositi*, my family's motto. The book is very unlikely to be published, and this is the best I can do.

Making Sussex chairs from shaved B&Q dowel may not be exactly self-sufficient, but it is sensible, and seating my first one with woven sash cord shows at least a modicum of ingenuity with limited resources. Of course, Morris & Co. only used natural rushes for the seats. As I'm sure I have mentioned, my father was a brilliant rusher, and once gave me a lesson on a chair I'd made with my girlfriend Jane in Cork, Ireland. Unlike Alison Ospina of Greenwood Chairs (@greenwoodchairs), Dad was not a brilliant teacher and I decided then never to have another go. Rushing is a slow and tiring process, and with knacks that are easily forgotten if you're not twisting, knotting and stuffing regularly. Your hands get dirty and damp, and it's not a process that can be left to one side for very long as the rushes will dry out.

So I was rather losing enthusiasm as a chairmaker, until my sister Clare suggested I use fabric. So we ripped some very old



Rushing with dyed fabric is quicker and less dirty than using natural rushes

duvet covers and sheets into 2in-wide strips, each a couple of metres long. Clare had recently returned from Chile and was looking for something to do, so she had learnt how to rush, and was able to show me how 'weave' with fabric, and producing a black chair with a pure white seat was enthralling. I could see, however, that pure white would soon lose its purity, so I undid the white twists and transformed the seat with blue dye.

We'd expected to find material in charity shops, but you need at least three duvet covers to rush a chair. And polyester fabric is much thinner, so the twists are tighter and it all takes longer to complete. John Lewis, the High Street department store that is just about surviving, have 100% cotton linen which is quite thick, and takes the dye well. I did one seat in a burgundy red, another in beige (hoping that it would resemble rush).

Lockdown and fabric sales

When Lockdown closed all shops I was unable to buy the fabric locally, and was discouraged by online sales when the first fabric turned out to be flimsy and partly polyester. So I then experimented by making the seat from solid wood, carving a rushed envelope pattern with a V-groove gouge. The solid seat helps strengthen the chair, and I've found a hard seat to be much more comfortable than you'd expect. Galen Cranz, who wrote *The Chair*, studies ergonomics and seems to imply majority of support should be through the pelvic bones rather



One experiment has been to carve a rushed pattern on a solid seat. A solid flat seat has proved to be much more comfortable than expected, and with a 'knotless' wood like lime or tulipwood one could create a quilted seat that might prove to be splendid

than the fleshy *gluteus maximus*. One can't help thinking that we judge flat seats by the discomfort of sitting on a church pew, which one might suppose have straight backs to keep the congregation awake.

My mother, who was a keen churchgoer, had a great sense of humour and commonsense. To maintain our interest during sermons she taught my two sisters and me the Alphabet Game. The aim is to follow an A-Z of words, starting with 'A' for 'all or and', 'B' for 'bright or beautiful' and so on. Key hurdles tended to be 'K', 'J' and 'Q', though King, Jesus and Queen would surmount such obstacles so long as they were in the right order at the right time. Getting to 'S', as I did last Christmas, should be considered a significant achievement.

The next option, seat-wise, is to use bark, as Tim Beierle does this issue on p06, perhaps stripping the Holm oak that surrounds Church Lodge, the new 1819 *Quercus* HQ on the Isle of Wight. Holm oak was favoured by Victorians as a decorative tree, but is now a pest, which explains why there's so much in my two-up, two-down 'folly', designed by John Nash, the Prince Regent's architect.

The 200 year-old windows and doors are in surprisingly good condition, and I have felt a sense of responsibility to restore them by stripping back the peeling paint and putty. In reality, they need replacing, for a quicker, more consistent and cost effective result. Rob Procter, our builder, is a joiner by trade, so will be making the new ones himself, but I have challenged myself to make the kitchen window, in front of the sink, by hand.

Comparing the process with the one Rob will take, reminds me how little I know about hand-tools, perhaps because I've never had a good reason to learn. My first hand-cut dovetails were for a heavy toolbox at school, but they were laid out the wrong way, with the pins pointing upwards, and I've never tried again. Router jigs have always done the job. It is time, little by little, to grow up,



Tools for Self Reliance was the first visit for Muttley the new *Quercus* mascot



The jury is out when it comes to the multi-coloured approach. Not enough fabric was dyed for the beige 'rush colour' seat, so some reject duvet covers were added. And then there's the green chair itself

setting myself the ambitious target of eventually becoming a self-sufficient woodworker.

Traditional joinery

With the window in mind I decided to visit Richard Arnold in Market Harborough in Leicestershire. Richard has written often for *British Woodworking* and latterly *Quercus* about the use of traditional wooden hand planes, and has made his own, which takes self-sufficiency beyond my ambitions. A trip to spend a morning with Richard in his workshop inspired me to take my new motorbike, a Mutt Mongrel, which has become something of a *Quercus* mascot, named Muttley after the great cartoon hero.

From the Isle of Wight Muttley and I took the ferry to Lymington, then rode through the beautiful New Forest, skirting road-side donkeys, ponies and cattle to arrive at Tools For Self Reliance (TFSR, @toolsforselfreliance), to learn how they restore old tools. This remarkable charity, which relies on volunteers,

takes donations of discarded tools and rejuvenates them to be sent in containers to Africa. In fact, they only renovate tools with the potential to be as good as 'new'; to be of a quality useable by a carpenter, joiner or furniture-maker setting up in business. The rest of the donations are sold for scrap. Kits of tools are sent in toolboxes to training partners, one or two being used for students to learn essential skills in class. The rest of the kits sent to each training project are only distributed to students after graduation.

It is a tragedy that the cuts to foreign aid by the British Government have had a dramatic effect on TFSR, who were about to send a consignment of pedal-powered sewing machines to an aid-funded project. The training partner could no longer pay for the kits, and the space in the next container is having to be replaced with bicycles.



Watch out for the lessons we learnt on making windows the traditional way with Richard Arnold coming soon

Young Toolmakers Challenge 2022

Quercus invites schools and colleges around the world to enter our unique planemaking contest

Ten years ago *British Woodworking*, which we published before *Quercus*, was running an annual School Planemaking Challenge with the number of participating schools and colleges increasing year by year. In 2011 we sent out more than 200 kits. Now we are inviting entrants from around the world. We were supporting the efforts of teachers and departments to interest students in woodwork. By encouraging them to make their own wooden planes, they get to produce something of actual use. You'd be stunned how many people asked us if the schools' planes are for sale when we take a display of them to shows.

The aim is to run the Young Toolmakers Challenge 2022 from 1st January 2022. We don't yet know how well it might work around the world, for students 18 or younger. So for the moment, please email us at info@quercusmagazine.com if you know of a suitable school or college, and then we will send more details about entering the Challenge.



Usually TFSR don't send cycles because they are relatively easy to renovate in the Developing World, and requesting discarded ones from the public tends to lead to an unmanageable avalanche of wheeled donations. In hindsight I rather wish I'd asked the volunteer renovators for tips, particularly regarding sharpening and honing. I hadn't then considered my trip to be an odyssey as a Self-Sufficient Woodworker, in fact, when we had to close *British Woodworking* and *Living Woods* I sent many of my hand-tools to TFSR via a tool shop in Cirencester.

I had had no intention of editing a magazine again, and in fact didn't much want to work with wood. I can at least rest in peace that a rather splendid saw-sharpening vice ended up being used productively, and I checked for it at the saw sharpening station because saw jaws are not included in the TSFR kits, as these are expected to be made from wood by trainees.

Inventive chairmaking

The next stage of our adventure took us past Stonehenge to Westonbirt Arboretum in Gloucestershire, where you can find the chairmaking camp that is Westonbirt Woodworks (@westonbirtwoodworks), run by Paul Hayden and his team. They have renovated premises leased from the Forestry Commission, with open-sided byres for pole-lathes and shaving horses. Originally trained by Mike Abbott, Paul teaches participants how to make Windsor chairs, having asked Mike for permission to 'copy' his courses. "That's ok," Mike replied with his typical kindness, "I've stopped doing Windsors." Much the same was repeated when I visited Mike in 2007 to ask if he minded the launch of *Living Woods* magazine, aware that his book and business had already monopolised that name. He was generous then, and has been generous ever since.

Paul's inventive approach to many chairmaking techniques includes his steam box, which is short and comprises a plastic soil pipe held inside an insulated ply tunnel. His source of heat is



Paul Hayden at Westonbirt Woodworks welcomes Muttley

an ex-Army fuel tank, sitting on a single gas hob. He soaks the ash bow pieces in a trough, then steams them for about an hour each, keeping things simple by not having dowel spacers inside the pipe as racks for the lengths of damp ash. He doesn't consider them necessary. Such steaming complexities have discouraged me, and I am now keen to use a rejected bath at Church Lodge for soaking anything I want to bend, and for 'wetting' rushes should I turn to them for traditional Sussex chair seats. I doubt there'll be space for a water-filled fuel tank on the fireplace, but it's worth a go, and I'll be hoping to find one bobbing in the Solent, ending up on a beach at my desert Isle of Wight. What could go wrong?

On which point, I'm drawn to introduce Adam Brewer, who wrote to us recently about his work-life balance. Not only does he represent the sort of City executive one might have envisioned

in the Self-Sufficient Woodworker on a desert island, but he has made an impressive 'start' in making a cribbage board as an alternative to chess. "As a Web Developer a significant amount of my life involves building websites and applications," he writes. "Spending a small amount of time each day engaged in something quiet and haptic is a welcome distraction. I easily dismissed hand-tools as out-dated and old-fashioned, but they're a fantastic option if space is an excuse not to build something. We all have incredibly busy lives and stepping away from our devices, slowing down and putting the grey matter to work can only be positive."



From bottom left (above): Winner of inaugural Schools Planemaking Challenge, which is set to run again in 2022; beautiful small Japanese toolbox made by Anny Dubois; customised Windsor Workshops spokeshave with built-in scraper; and sash fillister from Richard Arnold for window joinery. Next issue Paul Hayden (above) will be discussing the characteristics of adzes and which he prefers

Technohippy?

Adam Brewer reflects on a work-life balance as a woodworking recruit

We live in a very strange time and most of us deal with some form of stress on a daily basis. With so much information and so many opinions it's very difficult to know how to purposefully spend what little free time we have.

As a Web Developer a significant amount of my life involves building websites and applications, spending more time in the Internet than out of it. I've always liked making things and due to the nature of my job I find problem solving fun and rewarding. Just before last year's lockdown I found myself with a disused bathroom, a Japanese Ryoba saw, a set of Amazon Basics chisels and just enough space for a Black & Decker Workmate to use as my bench. Apparently this juxtaposition of tech and craft makes me a "technohippy".

One of my first projects was a set of towel ladders, followed soon after by a rather terrible clock. I tend to fixate on things soon after dipping my toes and so after the pubs shut I found myself engrossed with hours of woodworking videos on YouTube. I made lists of the things I wanted to build and learnt how to properly use and look after the tools I had. However, it didn't take much convincing to purchase some better ones. I made a concerted effort to learn new techniques and joinery with every new project and while I could clearly see the progress I was making I loved knowing how much more there was to learn. Hopefully by now I know what sharp actually is, though I sadly still use my Workmate as a bench.

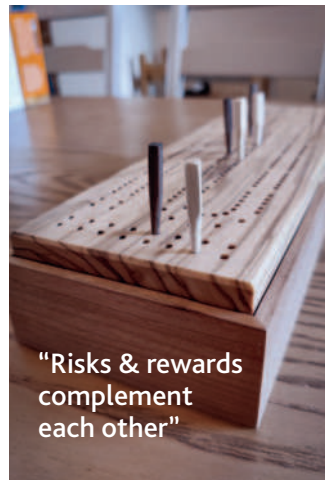
As with any craft there's a real sense of workmanship that comes from making something with your hands. The risks and rewards truly compliment each other; striving for perfection while knowing it's unattainable can be both encouraging and humbling.

Quiet and haptic

Spending a small amount of time each day engaged in something quiet and haptic is a welcome distraction from the stress and noise of both work and life. In particular, hand-tools offer an incredible amount of sensitivity to the task at hand, easily allowing one to pause, check and adjust in the middle of a task. Safety can't be dismissed either, especially if you're of the more accident-prone kind.

I easily dismissed hand-tools as outdated and old fashioned, but they're a fantastic option if space is an excuse not to build something. Comparable to machines, they produce no noise and offer a much more pleasant way to create, albeit at the cost of a little time, patience and skill. Even if I had the space I'd still prefer to work predominantly with them. Their technical aspects and problem solving nature is something which carries over from my day job. Fettling a tool (or "debugging" in my line of work) is something I find irresistible.

We all have incredibly busy lives and stepping away from our devices, slowing down and putting the grey matter to work can only be a positive thing. However, distractions can be found everywhere and often they're in the same place we find inspiration. It can be difficult to muster the energy to learn something new or start a new project (especially if you're working in an old bathroom) but dedicating a little time to chip away at an idea will always be progress, however small it may be!



"Risks & rewards complement each other"



"Slowing down and putting the grey matter to work can only be a good thing"

Shavings

CARTOON: OMI GATES



More hooks soon

I have thought about storing my hand saws in a more practical way and remembered the article by Jöge Sundqvist in QM05. I have been working on some ways to produce the hooks, and will be sending some photos to make flattening the back easier.

Henrie Van Rooij, England



Little and Often

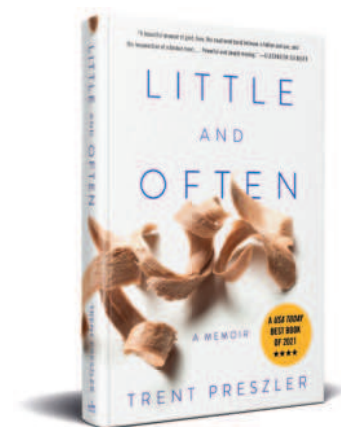
Nick Gibbs reviews a story with a difference for woodworkers

Wood books are rarely gripping, rarely so good that you can't put them down. As it happens, I'd just started reading Trent Preszler's *Little and Often* memoir as I was packing saddle bags to reach Richard Arnold on my motorbike for a lesson making Georgian windows by hand. Aware that I might be returning with a sack of tools, and short of space, I tore off the book's hard covers rather than leave Trent (and his mutt Caper) behind. It was a wise decision.

Trent Preszler's story is an odyssey in itself, two tales forever touching and drifting apart, the dab of glue being his father's battered old toolbox, replete with gaffer-taped hammer and plumb line. Distanced from his parents, Trent drives days from Long Island, NY to South Dakota, finally beckoned by his harsh, ranching father for a whistle-stop Thanksgiving. Dad, Leon, had died by Christmas, leaving Trent with nothing more than anger, guilt, sadness and that very-same toolbox, forever heaved in and out of Old Yeller, the ranch pick-up, at least till the ranch had to be sold.

Back at his lakeside home on the East Coast, working as CEO of a vineyard during the day, Trent is drawn, perhaps by the magnetic force that is a father's toolbox, to build a canoe. Experienced woodworkers may chortle to hear of him buying a garage-full of machines, nudging one another in the ribs as they read of his flawed attempts to rip thin, brittle, juniper strips without repeated explosions. One has to admire his perseverance, not to mention a library that starts with no more than Gil Gilpatrick's *Building a Strip Canoe* and grows to display *The Genius of Japanese Carpentry* and David Pye's *The Nature & Art of Workmanship*. Trent's well-named puppy Caper would be covering from expletives when scarf joints were popping, and it was at just one of those moments that Trent hurls the hammer, gaffer tape and all, from his house, across the beach and into the sea, screaming at his late father.

Their's had been a fractious relationship, Trent's hero-worship more often than not unrequited. They'd spend days on the ranch together, mending fences or dealing with cattle; mending fences most of all. The hammer had been one of the first tools Trent had extracted from The Toolbox. "It had a simple



metal head and a carved wood handle, with grease stains where my father had gripped it the same way for years."

Building a strip canoe calls for a series of repetitive processes: ripping the thin strips, bending and joining them around the frame with scarf joints and then sanding and sanding the skin ready for finishing. It calls for patience and a stubborn ambition to get a job done. As a young adult Trent had wanted to buy a car. He was forced to earn money the hard way, doing the most menial work, stripping paint off 1000s of barn blocks. He was overcome by the enormity of the task, till his father came on site to show him what to do, starting with a single brick. "I knelt beside him," Trent writes, "and brushed the peeling paint off a general section of bricks, covering an area of about two square feet. 'Stop right there. Just do ONE brick. Little and often makes much.'"

In just that way, one strip at a time, the canoe gets built and launched, and paddled, and then used one final time to scatter, sadly, Caper's ashes. Trent's final memory of his Dad alive had been of Caper sitting on his ailing father's lap. "While it was true that I had built a boat," Trent concludes. "Dad had been working on his own project. I am the man my Dad made. Little and often." Buy a copy now. I'd lend you mine, but it's all rolled up, and dog-eared and far too full of life and bits to read again.

Follow Trent on Instagram @preszlerwoodshop.



Bovey Tracey

Craft Festival celebrates a return in September

Set in idyllic surroundings on the edge of Dartmoor, Craft Festival Bovey Tracey returns to Devon from 10-12th September. This will be its 18th year at Mill Marsh Park, with a hand-picked collection of makers demonstrating their craft throughout the weekend. There will be the StartUp section dedicated to emerging makers in the first two years of business. Woodworkers will be including Ambrose Vevers (right) and Rosie Brewer (work of hers, above). The very special Out of the Woods display, curated by highly-respected basketmaker, Hilary Burns, hosts a range of makers working with native woodlands.

The Festival is open Friday, Saturday and Sunday from 9.00am-5.30pm. Adult tickets are £10. Accompanied children under 18 FREE. Advance booking at craftfestival.co.uk or follow @craftfestival.



Knock Knock

Who's there? *Robin Gates* is striking a blow for the branchwood mallet

Spring in the Welsh Marches has been cold, wet and windy, but during sunny intervals and moments of calm it's always a joy to be working with hand-tools at a quiet and human pace. I've detected the almost silent rasping of a queen wasp peeling wood fibres from the shiplap walls to build her nest (not inside the shed, thankfully) and the mewing of buzzards circling high above the garden. The jackdaws were less subtle, hammering on the roof like a meeting of geologists while picking for insects among the moss. I only hope they haven't pecked holes in the roofing felt; the jackdaw's beak is a sharp tool.

What I don't know about 'sharp' is, well, actually quite a lot, which is why I'm focusing on 'blunt'. Arguments fester like old socks on the subject of sharpness but there's not much to quibble over the proper bluntness of a mallet. It's a remarkably simple and cheap tool to make. No special blunting wheels, jigs, stones or compounds are required. A piece of branchwood, sawn to size and trimmed of bark (chiefly to reveal wood-boring beasties) will suffice.

Wooden mallets are generally of two types. One for joinery is typically a two-parter with handle through-mortised to a square head, while one for carving has a cylindrical head to ensure it meets the gouge fairly from any angle, and might be turned from a single piece. In both types the striking surface is perpendicular to the long axis of the handle.

The key difference of my branchwood mallet is that its striking surface and handle are at an acute angle, a configuration which I find hefts well, positioning the mallet hand at a comfortable angle without extending the elbow. It also strikes with tough end-grain rather than the weaker long-grain of the conventional round mallet which splinters as a consequence.

Too many mature trees have been felled around my home town, and I was late on the scene when a magnificent oak was brought down, the really useful wood having been spirited away, but amongst the wreckage I found a piece with a good mallet inside.



The route from rough branch to finished mallet is swift and easy. Having removed the stubs of small branches I stripped the bark and smoothed the thing round with the drawknife, having resisted the temptation to saw the handle to length prematurely. Doing that would have made clamping the work more awkward.

With an axe you can hew with one hand and hold the work with the other, but the drawknife is a two-handed tool and the work must be securely clamped. I used my home-made carving knife for finishing in the angle between head and handle, and also for chamfering around the edge of the striking face to prevent splintering. The grip and leverage offered by a short blade and big handle are just what you need in tight corners. Given a wipe of linseed oil, the mallet was ready for its first strike. Every such mallet will be unique, but for what it's worth, the handle of this one is at 45° to the head, 30cm long and 3.5cm diameter. The

head itself is 10cm long and has a striking face of 5cm diameter. The dry weight is about 400g.

The mallet is now knocking on five years old and I use it often, most recently while chiselling the rebate of an emergency leg for the bed. I must have sat on the edge of the bed too heavily while putting my socks on, because there was an alarming crack and I discovered the side rail had split around a knot. This wasn't quite the boost to my confidence I was hoping for while making efforts to shed a few pounds! Never mind, after a little work with the mallet and chisel I felt better and the bed was fit for purpose.

Translator and woodworker Leif Pietilä (@leif.pietila), himself an experimental toolmaker summed up the natural-grown mallet nicely, I thought. "That tool expresses the essence of mallet-ness. There is nothing to take away, which is a sign of good design." Thanks Leif, but the oak tree takes all credit for that. Meanwhile John Peirce (@boreal_woodworks), working with greenwood and hand-tools in Alaska, suggested this would also be "the perfect shape for a home-made adze handle. Split the head down its length and mount the adze blade to that." What a great idea! I feel another project coming on.



Thanks to Michal

Hand-tool chairmaker and furniture-maker Michal Cholewinski (@ide_do_warsztatu) in Poland has another of the Hall's 'Modern' spokeshaves featured in QM06. Michal replaced the worn beech sole with an insert of more durable lilac, fully dismantled and restored the captive screw adjusters, finishing with oil and wax. The original iron (above) only required sharpening. Thanks for getting in touch Michal.





A classic woodcarver's round mallet being used for 'bost in' a rough design (above). The windfall oak (left) was branched at a convenient 45°, with the edges of the completed head chamfered (right) to reduce the risk of the striking face from splintering. The branch was kept long for clamping while using a drawknife (below)





Rosie Mockford: "There is a thrill in carving usable, ergonomic objects which 'work' well with the body and the way a person will eat"
Photo by Russell Sach