

WORKING WOOD BY HAND

MAY/JUNE 2021 QM06
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Quercus

Seating Matters

David Johnson on Danish Caning

PLUS

George Nakashima
Phoebe Everill
Mike Abbott
HNT Gordon Tools
Richard Wile
Rex Krueger
Low Fat Roubo
Masashi Kutsuwa
Dylan Iwakuni
Steve Schuler
Robin Gates

Tool Stores
How to Keep Your Kit

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from the woodlands,
transported by Crunchy

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Quercus

Thumb the pages of *Quercus* and the most likely catalyst readers will give for making chairs or working with a pole lathe is having taken a course with Mike Abbott or read one of his books. He is a good friend of ours, and has single-handedly inspired 'apprentices' like Ben Orford, Barn the Spoon, Ben Willis and many others to become significant professionals themselves. May is the month the greenwoodworking scene usually gets going with the Bodgers' Ball and The Scythe Fair, so it is fitting to celebrate Mike's 70th birthday with a profile of the man.

Elsewhere you will learn how in England Greenwood Days has adapted its courses to meet Covid guidelines; how in the USA Maplewoodwoodshop has created a system for bringing woodwork & design back to school; how in Australia HNT Gordon are makers of great planes, and now have their own vices; how in Japan birch is split for making chairs and how Dylan Iwakuni makes a protector for his chisels; and how in Canada Richard Wile answers questions on sharpening & tool renovation. *Quercus* is, I hope you will agree, going global, and we welcome anyone to take part from anywhere.

Nick Gibbs, Editor

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A Modern Way to Cane

From start to finish, *David Johnson* canes an iconic chair with Far Eastern materials

Danish Modern is a style that was born between the wars and quickly spread in popularity across Europe in the post-War years and eventually the United States. While mass produced, it retained hand-worked details and joinery which reflected the values and training of many of its designers. The best-known of them is Hans Wegner, the son of a cobbler who at an early age learned to draw and carve. This led him to an apprenticeship with a cabinetmaker and then to study design. He began to create some of the most iconic pieces associated with the style which emphasises a form-follows-function aesthetic while keeping the organic feel of traditional furniture.

During the Occupation the Danes had limited resources. Pieces were made in local woods, primarily oak and beech, and woven seats done in inexpensive paper cord. Imported materials such as teak, rosewood, and cane became available on higher end pieces following

the war. This chair is the JH516 designed in 1951. Produced by Johannes Hansen it is in oak with beech as the secondary wood with a 5mm binder cane seat and back. It is rarer than the pieces which were designed around this time such as the Round Chair (JH501) and the Wishbone (CH24).

Cane is the inner bark of rattan palm. While there are many species of rattan palm only a few found in Southeast Asia are used for cane. Once harvested, the outer bark layer and thorns are removed. The rattan poles are separated for quality and size and run through a machine which strips the cane from the pith of the pole while cutting the cane to size. The pith is for reed which is used in wicker furniture and basketry.

Cane is worked while wet to make it pliable. I soak 5mm binder cane for only about 5-7 minutes in warm water. Thinner cane will be soaked less. Many will soak the cane longer, but I find that it can make it discolour, fray, and

become more prone to splitting. It will be less pliable with this soak, so care must be taken to not bend it too much. The nodes of the cane have a direction to them which must be taken into consideration when pulling it through the weave, otherwise it will snag.

I use 18-gauge, 1/2in wire nails to fasten cane. To prevent splitting of the cane, drill the cane with a wire bit and pin vise. In tight areas a nail set and needle nose pliers are very useful.

A seat is commonly judged by its tightness, but the secret is that cane shrinks as it dries, therefore the weave will tighten itself. Keep in mind that if woven too tightly, the weave may develop breaks prematurely and will cause the wood frame to stress and possibly fail.

First stages for the seat

Begin by rounding the inside edges of the seat and back frames if they haven't been done already. I just use a file and round them roughly to a 1/8in radius. Sharp edges can lead to premature breaking of the cane when pressure is applied to the weave resulting in the cane being cut.

I prefer, and it's most common, to have an odd number of warp pairs. It's also easier to lay out. Make a layout tool with some of the cane by taping it together (Pic.1). Have an example of both two and three wraps between the warp pairs. The layout marks will represent the centres of the warp pairs. Mark the centre of the back seat rail. Mark the outer warp pairs on each side one cane width from the inside edge of the seat. Now, on each side, between the center and edges use your layout tool to evenly space the marks with two wraps between them. Most likely it won't work out perfectly and this is fine. Err on the side of them being slightly wider than two wraps. You won't be adhering to these lines strictly, but you will try to get as close as possible. Most chairs have 17 warp pairs. Next do the same on the front rail but since the front rail is longer space them with three wraps or less in-between.

Save the longest pieces of cane for the wefts on the back. I work from the left side to the right as I face the front of the chair. Tack a piece of cane on the



A nail set can reduce the challenge of nailing in a tight space



back rail 1/2in from the bottom edge in the corner with the working end down. Bring it over the outside of the rail, across the seat, around the front, and tack it down as you did on the back (Pic.2). Next use a longer piece of cane. On the back rail place it next to the first and wrap around the rail 2-3 times to the right. Stop the wraps when they're one cane width from the next mark. Nail on the inside of the rail. The nails will be covered with a piece of split rattan so be sure to keep the nails in line (Pic.3).

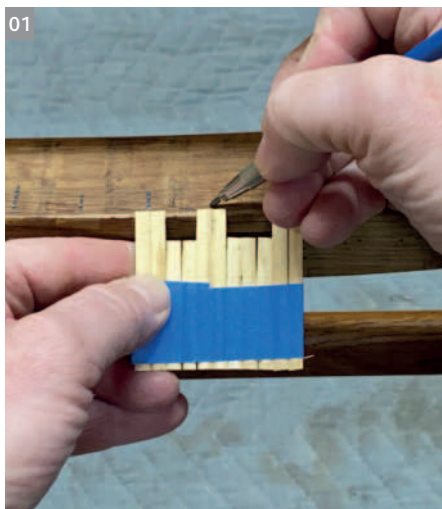
On the top of the front and back rails insert a trim strip 1/2in from the inside edge under the wraps and first warp pairs (Pic.4). From here on the trim strip will be under the wraps and over the warps locking them in place. In most cases the trim strip is also over the outermost warp pairs but on these chairs it is not. On new work or when conservation isn't an issue, I recommend locking the outer warps as well. Continue making the warp pairs by repeating steps 1 & 2, one strand of warp only and then another strand of warp and wrapping to within one cane width of the next mark.

Layout marks

Pay close attention to your layout marks and try to follow them as best as possible while also keeping the cane packed tightly next to each other so none of the rail can be seen through. You'll find this ideal is impossible and if you start falling short of making it to the next mark while wrapping add another wrap to make up the difference. No one will notice if there are many sets of three wraps with one or two sets of four wraps but don't let yourself get caught in the situation where you need to deviate too far in the amount of wraps to be near your mark. Experience will guide you on spacing, but one piece of advice is to not let it get away from you (Pic.5).

The centre detail is easily managed. Just continue over the rail until the slot is reached, then go through the slot (Pic.6). As the warps are finished be sure to have the trim piece only go over the second to last warp pair and then under the remaining wraps and warps. The second to last warp pair creates the last wrapping of the front and back rails. Add two pieces of cane to make the last warp pair to mirror the other side of the seat (Pic.7). Most likely there won't be enough room to nail the last piece. If so, neatly nail it on top of the previous pieces. (Pic.8)

Weaving the weft of the seat is straightforward. By now much of the warp will have dried so wet it to make it pliable. The wefts are in pairs and



01 Make a layout tool with some of the cane by taping it together. Have an example of both two and three wraps between the warp pairs



03 Nail on the inside of the rail. The nails will be covered with a piece of split rattan so be sure to keep the nails in line



05 Pay close attention to your layout marks and try to follow them as best as possible while also keeping the cane packed tightly next to each other so the rail cannot be seen



02 Tack a piece of cane on the back rail 1/2in from the bottom edge in the corner with the working end down. Bring it over the outside of the rail, across the seat, around the front, and tack it down as you do on the back



04 On the top of the front and back rails insert a trim strip 1/2in from the inside edge under the wraps and first warp pairs



06 The centre detail is easily managed. Just continue over the rail until the slot is reached, then go through the slot



The second to last warp pair creates the last wrapping of the front and back rails. Add two pieces of cane to make the last warp pair to mirror the other side of the seat



Most likely there won't be enough room to nail the last piece. If so, neatly nail it on top of the previous pieces



Introducing more tension will lead to breakage. I weave one at a time and complete a section of 2-3in before nailing



Working on one side at a time nail the ends of the cane down by gently pulling the cane just taut enough to be firmly around the rail, trim the end just below the seat, then drill & nail it down. Be sure to place the nails in a straight line along the rails at the same height as the nails on the front and back rails



Complete the seat until no more wefts can be added and then after the final nailing do one more straightening of the seat before moving onto the back



The back is wider so it will require more warps, 19 in this case. The warp begins with a single wrap around the bottom rail at the right side so account for this while laying out



Nail a long piece of cane to the inside of the bottom rail at the left side with the working end going toward the front of the chair



Continue with the cane down the front of the back, wrap over both rails again to make the first set of warp pairs on the front and back



Now form the next set of warps by first going up the back, over the front, and repeat

simply weave over and under the warps beginning with over the first warp. After the first set of wefts are in, weave the next set beginning with under the first warps. Do not be concerned with the wefts being tight across the seat. Since cane shrinks as it dries the seat will become plenty taut. Simply having them nested next to each other in straight rows is enough tension. Introducing more tension will lead to breakage. I weave one at a time and complete a section of 2-3in before nailing (Pic.9). To nail the ends, flip the chair on its side so you can access the inside of the side rails.

Working on one side at a time nail the ends of the cane down by gently pulling the cane just taut enough to be firmly around the rail, trim the end just below the seat, then drill & nail it down. Be sure to place the nails in a straight line along the rails at the same height as the nails on the front and back rails for the trim strip to be level (Pic.10).

Nail all of the pieces on one side keeping them neat and straight and then flip the chair and nail the other side. Turn the chair back upright and before continuing with another section of wefts straighten your previous work. Continue in this manner to work toward the back of the seat. As the wefts near the end, the weaving will become more difficult and slow which can be frustrating.

Keep the warps wet and keep your spirits high knowing you're nearly finished with the seat. Ideally the pattern ends with the last warps passing over the outside wefts, but this ideal isn't always met. This is why we start at the front, where these details are more noticeable. Complete the seat until no more wefts can be added and then after the final nailing do one more straightening of the seat before moving onto the back (Pic.11).

Caning the back

The warp on the back is the most complicated aspect of the chair. While facing the front of the chair, layout the back like just like the seat.

The back is wider so it will require more warps, 19 in this case. The warp begins with a single wrap around the bottom rail at the right side so account for this while laying out (Pic.12).

While weaving turn the chair around so you are facing the back of the back. Nail a long piece of cane to the inside of the bottom rail at the left side with the working end going toward the front of the chair. Wrap it around the bottom of the rail and up across the back to the top rail (Pic.13). Continue with the cane down the front of the back, wrap



16 Continue until the centre rail is reached. If a new piece of cane is needed add it by nailing the new over the old then trimming the ends. One nail holds both pieces



18 Continue on until the last warps and, like on the seat, pay attention to how the trim strip ends. Finish with a single wrap around the back of the bottom rail. A nail set can reduce the challenge of nailing in this tight space



20 Don't forget the trim piece. Simply wrap the top rail until there are at least two wraps on both sides then pass the cane over to the next area to be wrapped and continue



17 Once the centre support is reached use short pieces tacked to the center rail to continue the pattern. This step can be confusing but working slowly and thoughtfully will help get through it with minimal frustration



19 Wrap the spaces between the warps of the top rail. Begin by nailing a piece of cane to the bottom of the top rail at the left side between the first and second warp sets with the working end going out toward the back



21 When a new piece is needed nail it on over the old one on the inside of the rail. At the center support use short pieces nailed to the support to continue the pattern. Finish by nailing the end to the underside of the top rail



22
Begin the wefts on the back of the back at the top. Pay close attention to the direction of the cane and use the saved long pieces. Weave the tail end about 6in into the warps beginning under the first warp



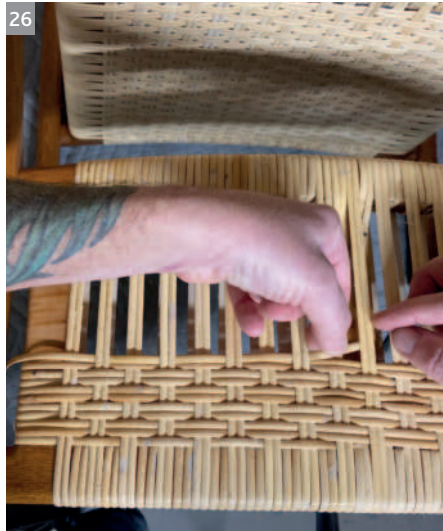
23
Weave the working end across the front of the back beginning with going over the first warp pair



24
Continue on the back over the first warp pair



25
Once the first set has been completed on the front and back make the next weft set beginning with under the first warps



26
Continue weaving and to add a new piece do so on the back. The new piece overlaps the old by about 4in. Hide the end of the new under a warp set



28
A new piece ends on the back as it began but in the opposite corner



29
The finished weaves will have small loose strands and fuzz all over. Cut the large ones off and with an alcohol lamp singe the small pieces off



30
Under the seat cover the nails by nailing on split rattan pieces that are mitered in the corners. Use longer nails and be sure to drill pilot holes

over both rails again to make the first set of warp pairs on both the front and back (Pic.14). Like the seat, the front of the back has a trim piece under the wraps and first and last warp pairs. Tuck a piece under the first warp pairs 1/2in from the inside of the bottom rail. The upper rail's trim piece will be done later. Wrap the lower rail 2-3 times until the cane is one cane width away from the next mark. Now form the next set of warps by first going up the back, over the front, and repeat (Pic.15). Continue in this manner until the centre rail is reached. If a new piece of cane is needed add it by nailing the new over the old then trimming the ends. One nail holds both pieces (Pic.16).

Once the centre support is reached use short pieces tacked to the center rail to continue the pattern. This step can be confusing but working slowly and thoughtfully will help get through it with minimal frustration (Pic.17). Continue on until the last warps and, like on the seat, pay attention to how the trim strip ends. Finish with a single wrap around the back of the bottom rail. A nail set can reduce the challenge of nailing in this tight space (Pic.18).

Wrapping the back rail

Wrap the spaces between the warps of the top rail. Begin by nailing a piece of cane to the bottom of the top rail at the left side between the first and second warp sets with the working end going out toward the back (Pic.19).

Also, don't forget the trim piece. Simply wrap the top rail until there are at least two wraps on both sides then pass the cane over to the next area to be wrapped and continue (Pic.20). When a new piece is needed nail it on over the old one on the inside of the rail. At the center support use short pieces nailed to the support to continue the pattern. Finish by nailing the end to the underside of the top rail (Pic.21).

Begin the wefts on the back of the back at the top. Pay close attention to the direction of the cane and use the saved long pieces. Weave the tail end about 6in into the warps beginning under the first warp (Pic.22). Weave the working end across the front of the back beginning with going over the first warp pair (Pic.23). Continue on the back going over the first warp pair (Pic.24). Repeat this again on the back and front to create the first set of weavers.

Once the first set has been completed on the front and back make the next weft set beginning with under the first warps (Pic.25). Continue weaving and to add a new piece do so on the back. The new piece overlaps the old by about



The finished chair with the wishbone front seat rail

4in. Hide the end of the new under a warp set (Pic.26 or Pic.27). It ends on the back as it began but in the opposite corner (Pic.28).

The finished weaves will have small loose strands and fuzz all over. Cut the large ones off and with an alcohol lamp singe the small pieces off (Pic.29). Only singe the top shiny side of the cane and it goes without saying to be careful with this process. Yes, I have set a seat on

fire. Once. Under the seat cover, the nails by nailing on split rattan pieces that are mitered in the corners. Use longer nails and be sure to drill pilot holes (Pic.30).

Stand back and admire your fine work before having a well deserved sit.

Follow David Johnson on Instagram @side_furniture or visit sidecarfurniture.com.

Business as Normal?

Adjusting to changing times, *Peter Wood of Greenwood Days* reports on a year of downs and ups

In 1993 I was living in Oxford, training in joinery with a view to learning some fine furniture making. I was involved in the environmental movement and a friend introduced me to a pole lathe, showed me the basics and I was hooked! I bought Mike Abbott's book (of course) and set up a lathe in my bedsit, then spent a few years making/selling chairs and demonstrating pole lathe turning around the country shows and craft fairs, building up my skills.

At the shows many people were interested in learning how to turn and how to make chairs. By this time I had moved with my family to the fledgling National Forest right in the heart of the country and this seemed to be the perfect place to start setting up somewhere to teach. There was plenty of support from The National Forest and an understanding local landowner with an area in a wonderful 80 acre mature woodland where I could base myself.

I started off just teaching pole lathe turning and chair-making under a tarp and slowly over the years increased the range and diversity of courses I was able to offer. While at the craft fairs I met many skilled crafts people and as I now had the space I decided to broaden the courses I could offer and bring in other tutors. As the number of courses increased I refined the infrastructure and now have a changing roster of about 15 different tutors who come and teach. We run over 60 courses a year in the woodland workshop and hopefully this helps to support our talented community of crafts people.

Lockdown bombshell

Covid and the first Lockdown was of course a bit of a bombshell. We had an almost full year booked in with tutors (and myself) relying on the income. The first priority was of course the safety of the tutors and students so we closed down and had to consider how we could still function as a centre while abiding by all the safety regulations. We faced



Social distancing on a recent stool-making course

financial ruin, potentially refunding hundreds of people their course fees but thankfully our students were incredibly understanding and most were happy to delay when they could come out to the wood. Initially we postponed about 40 of our courses which created a large amount of admin, contacting all the students and liaising with all the tutors. I took advice from the local tourism offices, local government, attended safety courses online and talked to other tutors and people who teach and run

similar outdoor centres.

Here at Greenwood Days we are lucky. The courses are held outside (under cover) with lots of space and usually I have two courses running at the same time (we have lots of covered space), I provide soup at lunchtime which is a great social time where both courses sit down together and share their experiences. The rules for what could and couldn't happen seemed to change daily so initially we decided when things started to open up we would only teach

four on a course (this has since changed to six on a course). While this had a large cost implication it would hopefully make people more confident about their safety. People would bring their own lunch, which was reassuring to students but reduced the social side of the days' experience. Everybody, wherever possible, would have their own set of tools and shared tools were disinfected before each person used the tool. There was lots of measuring to ensure we were aware of how far 2M was and thankfully with our large area we could spread out to accommodate new social distancing regulations. Hand sanitiser and wipes were always available and over the winter we had built a new toilet block with two toilets so each course could have a separate toilet!

Safe place

Once we were happy that the centre was a safe space we had to work out how we could teach safely. Some tutors decided it was impractical. The basket makers are an example where for the more intricate weaves, teaching was through close hands-on work, so these course were delayed until 2021. Other weaving courses such as plant climbers or ash splint basketry could be taught at a distance and were therefore able to proceed. Our tutors are really experienced and were able to change their style of teaching to accommodate



Peter Wood says that the first Lockdown was a bombshell, but adds that it has been a time to take stock, with teaching evolving. The site includes a block of double toilets



distancing. An example would be steam bending on a chairmaking course I teach. It's usually a group activity with each person assigned a task and working closely together. I made new bending jigs and now each person individually bends their chair arm. Other students can watch from a distance and I'm on hand in case of problems. It is in fact an improvement and each student now has more 'ownership' of their chair.

In July we started running some one-to-one teaching to test the systems we'd put in place. Interestingly most of the people who came on these days worked in some capacity for the NHS

and were desperate for some relief from their work. The days worked well and the students were also happy to pass on helpful advice so with rules easing and systems in place we started running courses again.

Thanks to understanding and flexibility from tutors and students we were able to rearrange most courses and by putting on extra days give people dates they could attend. It's meant tutors have had some income, students have been catered for and Greenwood Days has been able to provide courses in 2020. In fact with extra dates more people have ended up coming out on a course. It was



Courses have had to be run with smaller classes (left), with masks worn when appropriate (above)



New tool boxes keeping each student's tools separate

a race to get through all the courses before the end of the season. Usually we finish at the beginning of October but we kept on teaching till the second lockdown began in November with 40 days of back-to-back courses. Sadly the last handful of rearranged courses had to be postponed again until 2021.

Greenwood Days has been lucky through these Covid times, because when not locked down we have been able to run courses. The students have been so supportive. One student unable to come out donated the courses they'd booked to 'someone who was struggling and might need it' while others have

had their course dates changed three times (and are still happy!). Our teaching methods have changed, frequently for the better and the facilities available in the wood have improved as well.

Our focus over this year has always been to work when it's safe to do so, to provide a Covid secure place to teach with the safety (and enjoyment) of our students and tutors paramount. It proved an incredible amount of extra work to enable courses to run and to keep everyone happy and safe.

There have of course been many cost implications with the numbers on each course reducing from 8 to 6 meaning

a 25% drop in income. Having to put on extra dates so that students can attend also, of course, means extra costs paying tutors. There are time implications rearranging every course and most of the time we were open we ran just one course a day to make sure people were comfortable coming out. This then effectively doubles the time the centre is open and increases costs.

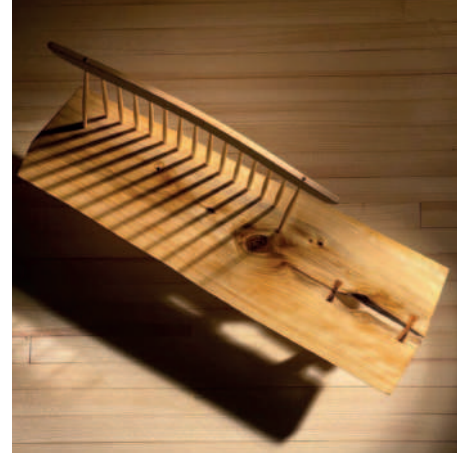
It has been a challenge at times but I'm happy to have come through 2020 and am now looking forward to the 2021 season - all the systems are in place, new courses and tutors have been added and hopefully with mass vaccinations we'll be able to run all the courses on schedule this year. We have been anticipating an understandable uncertainty around booking a course in advance so we have introduced a deposit system where students can secure a place on a course with a small deposit and pay the remaining cost close to the time of the relevant course.

I would never want to go through this again but it has been a time to take stock and see how my (and the other tutors') teaching has evolved, how we could improve teaching styles and how to teach in a way that was safe both for the tutors (a very real fear) and for the students. It's been such a hard time for everyone. I know many people who make their living through their craft who lost their income overnight. They've had to change how they support themselves and adapt their business but as I write this, the 'Road Map' has just been announced and there is some light going forward. Hopefully this year we can all regroup and build ourselves up again.

Visit greenwooddays.co.uk for course dates or follow @greenwooddays. Courses are held at Ferrers Centre, Staunton Harold, Leics, LE65 1RU.



Classes are run in a way that makes the least confident person happy. The centre is outside so masks are not required, but we mask up if needed to make everyone comfortable



Having watching hours of documentaries about George Nakashima the Conoid bench appeared. Though Nakashima often used walnut, in this case the spindles are hickory



George Nakashima Bench

Follow the journey of novice chairmaker, *Barbara Roberts* with her first go at steam-bending in scale

Imitation is the sincerest form of flattery. I wanted to build a bench. Not that we needed one, but it was an itch that I needed to scratch. I hadn't built chair or a bench before, but you can learn pretty much anything from YouTube, books and magazines, right?

I had been thinking about the bench for many months. Every now and then I dived into Pinterest rabbit hole searching for bench ideas. I kind of liked Japanese style minimalist benches but then I stumbled across George Nakashima's Conoid bench. Somehow, I got very interested in the design and the man behind it. I watched hours and hours of documentaries about George Nakashima and read interviews and studies of his life and work. I also ordered his book *The Soul of a Tree* but the book never arrived.

George Nakashima was a Japanese American woodworker who started designing and making furniture in the 1940s after a career as an architect. He is considered one of the great furniture designers of the 20th Century and his furniture is highly collectable. His daughter Mira Nakashima has continued the family business. Normally I prefer to make something that I have designed myself but the Conoid bench is so perfect that there is nothing that I could have changed for the better. So, I decided to copy it.

Breaking down the design

It took me a while to understand why the Conoid bench is so pleasing to the eye. I trawled the Internet and paused documentaries to study the details. There's nothing new about live edge slabs as a bench or a tabletop but it was all new when George Nakashima started using flawed live edge wood on fine furniture in 1950s, and he was one of the first to use butterfly joints to reinforce cracks and crotches. That is why they are also known as the Nakashima joint.

Conoid benches are usually big. Some of them are over 100in long. The seat height is low, only 13-14in whereas normal seat height is around 15-17in. Total height of the bench is typically 30-31in. The ends of the slab are cut at various angles. The legs, spindles and the crest rail are always the same. The



The task of flattening a big slab with simple hand tools the task may feel impossible. But one approach is only to remove the high spots, starting by working on the ends of the slab. "Some wood has tremendous character," said George Nakashima, "and some has none." It was a new idea when he began using flawed live-edge wood for fine furniture in the 1950s. The butterfly dovetails were marked out onto blue tape



more flawed the slab is the higher is the value of the bench. Cracks, crazy grain, irregularities, crotches, knots, burl, voids, spalting.

Anything that adds character to wood is considered valuable, even saw marks. Just as George Nakashima said: "Some wood has tremendous character and some has none." I normally enjoy using perfect, straight-grained, quartersawn lumber, but I have to agree with George about the lack of character. He mostly used walnut because it was locally available, but he also sourced timber from all over the world.

The legs, spindles and the crest rail are clean and simple. The legs are perpendicular to the seat but are not at equal distance from edges. I realised that anything extra on the legs or the backrest would be too much. George Nakashima's tables also have a live edge slab or a book-matched pair of slabs connected with butterfly joints and very simple architectural legs. The slab is the centre-piece and the rest is there to highlight the slab.

The crest rail is an arc that is usually made of the same species as the seat. The spindles are made of hickory. I tried

to figure out the angle of the spindles and ended up 12° and 22° angle for the two outermost spindles that basically prevent any bending of the backrest. None of the legs or spindles go through the seat or the chest rail except for the outermost spindles which are secured in place with wedges.

The original bench was treated with many layers of tung oil. Nowadays Nakashima Woodworkers use Sutherland Welles Tung Oil Wiping Varnish/High Luster. It brings out the grain but doesn't form a very robust protective layer. The scratches and stains caused by people should be considered marks of life. As far as I understand cutting the wood and placing the butterflies is the most difficult thing in the design process. George Nakashima's sense of beauty and proportions was astonishing. He had thousands of slabs and many times he spent years thinking of an idea for a certain piece. He said it was important to draw the slab on paper and study it carefully. He told said forget your ego and let the wood decide what to do with it. Clearly the process was intuitive and there were no algorithms for it. This was one of the things that Mira Nakashima struggled with when his dad passed away in 1990 and she had to become the new head of design.

Eating the elephant

Looking at the original huge bench made the whole task feel way too difficult. When I broke down the project into smaller tasks it no longer seemed that intimidating. 1. Flatten the slab; 2. Make the butterfly joints; 3. Shave the spindles and the legs; 4. Steam bend the crest rail; 5. Drill the holes for the legs and spindles; 6. Glue everything together; 8. Apply several coats of oil.

I had never flattened a rough sawn slab nor made any spindles or steam bent anything nor drilled any weirdly angled holes. I had been preparing this project for months. I had watched videos and read about all the things I was supposed to do and eventually I felt confident enough to get going.

I started by making a shaving horse, finding free plans on the Internet (hybrid shaving horse). I also made a pair of winding sticks and a straight edge. I used first grade 'quarterish' sawn pine and Indian ink to stain the winding sticks for better contrast.

I found a suitable juniper slab from a local sawmill. I didn't pay much for it because the quality of the slab was so bad. Cracks, knots, crotches and wild grain. For my purposes it was perfect. I also got a smaller log that I used for the spindles and legs. Before I studied how

to flatten a big slab with simple hand tools the task felt impossible. But then I had an eureka moment. I only needed to remove high spots. I started by flattening both ends of the slab.

I used the winding sticks for checking that both ends were parallel with each other. Next, I flattened the long edges of the slab. I removed material until my straightedge touched both ends. At this point all four edges were flat and parallel with each other. Finally I flattened the centre. I used a scrub plane for flattening and a miter plane and a card scraper for smoothing the surface. I was constantly thinking about the crotch and how it would look like after removing material shaving by shaving.

Making the butterfly joints was easy because I had made a lot of dovetails before and the technique was basically the same. First I cut the keys from a piece of Paul's Scarlet. Then I put blue masking tape on the slab and Superglued the keys on the tape. Then I carefully scribed the keys on the tape. I removed the keys and the tape where I needed to remove waste. I chiseled the waste, first in the middle and then carefully right up to the tape but not a hair over the edge of the tape.

Next step was to make the spindles and legs. I used a few wedges and a froe to split the log along the grain. Shaving

horse, drawknife, spokeshave and a card scraper took care of shaping. I had to toss away three or four spindles because of mistakes.

The crest rail needed to be steam bent so I built a quick and dirty steam box and used a wallpaper stripper for producing steam. I knew the wood I was using would bounce back a bit and I took that into account when I made the mold. I ended up with a perfect curve.

In tutorial videos people use lasers and sliding bevels to help drilling at a correct angle. I found those techniques confusing so I made my own drilling guides. Check out my Instagram post about the technique if you are interested. I had a big piece of paper taped on the slab and I had all the holes and angles marked on the paper. Even though there were clear markings on the paper I still managed to drill the outermost holes at a wrong angle. I had to fill the them with dowels and redrill the holes.

I spent a long time staring at the bench and trying to find the best places for the legs. I must have changed the position of the legs 20+ times before I drilled holes for them.

Nakashima furniture is finished with several layers of Tung Oil Varnish. I have used Danish oils, boiled lindseed oil and many different Osmo products



The slab top is made from juniper, sold at a low price for being such poor quality



The shaving horse was the first thing to be made to make the legs & spindles. It is a hybrid based on plans found on the Internet, featuring Tom Donahey's ratchet as shown in QM05. Amongst the tools on the bench are a drawknife, spokeshave and brace for making the legs and spindles, and a plane for levelling the slab top (right), all to scale



and I've been pretty happy with them. I recently found Auro Worktop Oil Nr. 108. It's easier to apply, it brings out the grain much better and it created a beautiful sheen on the wood. And it won't harden inside the jar like Danish oils and Osmo products. I applied several coats of oil even though the surface looked immaculate after 2 or 3 coats. I let the oil cure 12-24 hours between coats. I treated the slab before gluing the spindles and legs in place. This way I was able to rub and buff the slab easier.

In the original bench the spindles have been heated before gluing. This way the spindles dry up fully and shrink and swell back to original size after they

have reached the equilibrium with room humidity. This creates a strong joint. My spindles were so dry already that I didn't think they could shrink enough with heat treatment. You can try this method easily. Make a wooden box and use a filament lamp as a heat source inside the box. Drill holes on the box a stick the spindles in the holes.

I used hide glue for a couple reasons. It lubricates the joint, and has longer open time compared to white and yellow glue, so squeeze-outs are easier to clean. Steam can be used to release the joint if a mistake was made or someone wants to refurbish the bench in 2200s.

After gluing everything together, I

oiled the spindles and the crest rail several times. And that was it. The bench was finished.

Wisdom after the events

I was a bit worried about using wood that initially looked very pale. The result would have been lame if I hadn't found Auro oil. It really popped the grain much better than any other oils that I tried on test pieces.

One thing that I would make differently is the length of the crest rail. When I was designing the bench, I sat down with Ken and we measured how wide the back rest should be for us. Now that I look at the finished bench, I think it would have looked a bit better if the back rest had been a tad longer.

All in all we're very happy with the bench. And like all woodworking, it's not only the final result but also the journey. Learning new things, solving problems and the small victories along the way give you a healthy dose of endorphins every once in a while. Plus a few mistakes too that teach you how not to do things and how to correct mistakes.

My next project is a series of upgrades on my split-top Roubo bench. Follow along as I take my bench to another level in Quercus or @barbiewoodshop on Instagram.

Making a Moxon Vice

In assembling a new vice, Doug Stowe buys and tests a kit of parts

The Moxon vice, named after Joseph Moxon was featured in an illustration in his 1703 book *Mechanik Exercises*. It is a simple thing and useful, even today, as woodworking by hand hasn't really changed all that much. What has changed is that you can buy a kit to make a Moxon vice that consists of all the necessary metal parts. The Moxon vice can be made as an accessory vice that to be mounted to any counter, table or bench and easily removed when the work is done. Or if you are building a new dedicated woodworking bench, the Moxon vice offers a much less expensive and just as effective alternative to ready-made bench vices.

Making one gave me the chance to review a new Moxon vice kit from Taylor Tools Company. You supply the wood and they supply all else including leather jaw lining material.

The kit, consisting of two threaded rods, four large washers, four large nuts, and two tightening knobs, also includes instructions enough to get you well on your way to a finished vice. Knowing that the Moxon vice can be adapted to the needs of the user they do not give specific plans, but you can also find examples and instructions online.

Choosing the options

I made my own vice following the suggestions offered with the kit, picking and choosing from among the options discussed. I used 6/4 (quartersawn) white oak for most of the parts.

You can choose your kit with or without the leather for lining the jaws, and you are offered a choice between two types of tightening knobs. The winged nut has a classy look and spins along the shaft at a finger touch allowing you to quickly adjust the vice opening. The other lever shaped nut offers greater leverage and at a slightly lesser cost. The vice offers a powerful grip on wood.

I use my Moxon vice for cutting dovetails and I designed the space between knobs for sufficient space to fit drawer sides as the dovetails are sawn. It grips with tremendous force and without damaging the wood.

The Taylor Tools Moxon Vise kits sell for between \$34.99 and \$49.99 in the US.



Doug made his Moxon vice with quartersawn white oak. There are various options with the accessories from Taylor Tools, but you may need to find plans on the Internet. One advantage of the twin-screw vice is that it can be cramped to a work surface or bench, and the space between the knobs makes cutting dovetails and other joints simple



The Hand-Made Marks

To add a tactile feature of his chairs, *Alex Holm* spokeshaves facets to legs and rails



New owners of a chair with facets will discover a series of edges, resembling those of a cut diamond. It is hard to imagine that they were all worked by hand

The flat of a facet cut into a round surface creates a tactile element that accentuates the hand-made nature of a wooden chair. As light is broken up by the edges that form between each facet, a geometric shape is revealed. Found often on Windsor chairs, whittled and carved, the chairmaker uses facets precisely to pronounce each piece and catch a passer-by, procuring a closer look. On the multitude of curves in a seat or on an elegantly tapered spindle, a facet can be prominent and quite pleasing. Facets can be one of the best visual elements on a chair, and if a chair is found with faceted legs or spindles, one can only assume they were put there by hand.

Our world is inundated with factory-made furniture. A stroll through a

home furnishing store would present fashionable chairs, brought by truck load, all the very same. It is hard to critique a factory-made chair. Likely, it will be well designed, satisfy quality control and in many cases be sold for a fraction of the cost of a hand-made one. What is less likely, is that a hand run along it will reveal the work put into it. The uniqueness will be lost, simply due to its mass-produced nature and knowing once it's purchased and removed from the showroom, it will be replaced with one the very same.

Rarely will one find a warm feeling knowing the chairmaker spent days and nights designing every last detail, with every last element created and assembled with the precision and intention to not only allow someone to

sit, but to feel just right. When buying a chair, in many cases the construction of the piece is not even relative, there is simply a desire for a nice place to sit. So a problem presents itself: how does the chairmaker demonstrate the unique attributes of a chair that is hand-made. The chair cannot show when the joint was confidently driven home, emitting the ever satisfying knock.

The chair cannot show the affirming nod provoked by a smooth surface straight off the blade. The chair cannot show the frequent returns to the whetstones to hone that blade, yet again, to continually produce the crisp carvings of the volute. It is here that the facet shines, quite literally.

On a clear Spring morning, as the rising sun casts through eastward

facing windows, there is a glint of light. Someone might glance at their newly-purchased chair, as if seeing it for the first time.

Rotating the chair slightly, they discover a fascinating series of edges, resembling those of a cut diamond. The round leg is actually encompassed by dozens of miniature flat surfaces. They rub a thumb across the edges, perplexed at not noticing before, and enthralled by their intricacy. Could someone have carved each one onto the leg?

Worth Noting

The chairmaker sits down at the shaving horse and picks up the chair leg, fresh turned off the lathe, round and smooth. This accomplishment is worth noting, for it takes hard-earned skill and practice to achieve. However, the chairmaker knows a machine could produce a similar result. This chair will come from a shop where one set of hands split, cut, and carved each piece. This chair will stand apart from the rest. With the leg held snug in the mouth of the horse, the chairmaker picks up a spokeshave, freshly honed.

The blade is meticulously stropped, for only the sharpest of edges will leave behind the desired surface. A surface sandpaper need not touch, for it is as smooth as glass.

The tool's edge enters the wood at the high end and is drawn down the leg to the thinnest part of the taper. A slight skewing of the blade, always working downhill with the grain, one by one the paper-thin shavings fall to the ground. The chair maker rubs a thumb across the newly faceted surface. Smooth, intriguing and satisfying.

There may be as many as fifty facets on the leg, made by fifty or more strokes of the tool. The chair maker puts down the completed leg and picks up another, sixteen pieces in total for this chair. The task requires a deep breath, and relaxed shoulders, for it is not brisk. The soft scrape of the blade is peaceful and however tedious, it is soothing.

As evening nears, the chairmaker sweeps up the shavings. The legs and other spindles lay on the workbench, faceted. A quick look up from the floor reveals the setting sun bouncing off a few of the facets. The chairmaker picks up a leg and rolls it over slowly, each facet momentarily illuminated in the light. A time-consuming, yet phenomenal, element. In just the right moment, a true mark of hand-made.

Follow Alex Holm on Instagram
@alexholmchairmaker.



A machine can produce the same result day after day, but with a freshly-honed spokeshave, the blade stropped, the chairmaker produces a surface of a thousand faces, skewing the blade a fraction with paper-thin shavings falling to the floor



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The Value of Birch

When a reader asks how to make QM01's small chair, *Masashi Kutsuwa* starts with the choice of timber



Shinsuke Kato (above right) was Mike Abbott's first Japanese student, and introduced greenwoodwork to a group of novices. A cantilever style of axe (right) is traditionally used in Japan for chipping the bark on logs, but is now used for splitting. Sticky birch grain can require a few wedges for splitting (below)



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 (tenons) to avoid loose joint. To start, my colleague Shinsuke Kato gave out a sheet of drawings and a cutting list, and explained how to make the chair. Shinsuke was Mike Abbott's first Japanese student, having taken a chairmaking course with him in 2002 and he has been developing his green woodwork since then.

I don't think the Spanish makers had such a drawing or parts list but we provided it to avoid confusing the participants. They have to split and shave 19 parts in two days: four legs, eight rungs, three back slats and four seat rails, some of them with slightly different lengths.

The material for the chairmaking came from one of the participants' woodland. The original Spanish chair was made from poplar, but we chose Japanese white birch (*Betula platyphylla var japonica*). It is a common species in the northern part of Japan. According to the owner, Michiko Saito, birch trees started growing naturally in a sunny part of an abandoned vegetable field and she coppiced them and cleared the undergrowth from time to time. But she has never imagined that she would make a chair from her birch herself.

Almost any wood can be used to make this chair because the design is so simple. That is another reason why we started the Van Gogh chairmaking project. All the parts are straight and there is no steam-bending involved. White birch hasn't been used for furniture-making in Japan because it doesn't grow big and also tends to decay easily. We hoped the Van Gogh project might add a new value to white birch as a material for woodland crafts.

The splitting session began on the first afternoon. Ideally we wanted to make the chair legs from small diameter logs without splitting them, as was the case for the original, but there weren't enough of them. So we split 10-20cm diameter logs with axes.

Traditionally wedges, axes and froes are used for splitting in Japan, just as they are in the UK, but the froe is only to be found in Takayama, a region in central Japan. People in Takayama have used the froe to make roofing shingles from chestnut, and the area has been the centre of woodwork for more than a thousand of years. Records show that woodworkers from Takayama travelled to the ancient capital of Nara near Kyoto to build wooden buildings in the early 8th Century. The city has kept the woodworking tradition since then and is now famous for modern furniture production. You can still see the demonstration of shingle making with froes in historic buildings in Takayama.

We often use froes on our chairmaking courses too, but this time an axe was the best choice for splitting white birch, which doesn't split as easily as oak or chestnut. We sometimes had to use the wedges as well.

Next issue the parts are shaved ready for assembly.





Michiko Saito (above) was the only participant in the Van Gogh chairmaking course in 2013 to be supplying the Japanese white birch from her field



The Shooting Stars

With a new plane accessory in mind, *Derek Jones* discusses the value of shooting boards

The two hardest working bench accessories in any hand-tool workshop have got to be the bench hook and the shooting board. Both are typically shop made and generally better for it as every part is prone to wear and will need rejuvenating or replacing at some point. My current shooting board has been a faithful companion since 2014 when I built it to test a range of planes for a magazine article. Over the years it has had a new back stop or two, the raised platform has been flipped and rotated several times to be squared up, and the compression strip down the side that guides the plane has been replaced more times than I can remember. But despite all this, like Trigger's broom (Google it), it's still the same shooting board. On occasion I'll use it as a bench hook for the odd cross cut being mindful that any serious follow through or errant saw strokes could damage it. Definitely a case of 'don't try this at home' or 'don't do as I do but do as I say'. The slab parts are made from 18mm birch-faced ply and the current fence is a piece of walnut with a chamfer applied to the back edge to resist tear out when it gets caught by the blade. The whole thing is fastened together semi-permanently with screws and there's no mechanism for adjustment, anywhere. I've tinkered around with slick designs that allow a lateral adjustment for the back stop but find they often can't handle the kind of forces required for shooting large section end-grain and end up out of kilter eventually anyway. The back stop, or fence as it is sometimes called, has a dual purpose; to support the workpiece at the desired angle to the direction of the plane and to prevent break out at the back end of the cut as the blade bursts through the material. It takes quite a battering and does get worn quite quickly but

I've long since given up worrying about it. I've experimented with harder woods -padauk was one – but they still wear out eventually and after a heavy hit from an enthusiastic pass do more harm to the edge of the blade than a less dense hard wood. Any impact that stops the plane in its tracks is not good either. The underneath of my shooting board is faced with abrasive paper. When flipped over it doubles up as a sanding board for flattening small components and box lids and has the added bonus of providing additional grip when it's used as a shooting board. Unlike some dual-purpose tools neither application affects the performance of the other so I regard it very much as a win-win arrangement.

Perfect shooting board

It sounds counter productive I know, but not every component I trim on the shooting board has to be perfect. Occasionally it's more important for parts to be made identical. In this mode I might stack thin parts on top of each other to speed things up and flip them over to correct any slight discrepancy from the intended 90°. It's not exact but is usually within the range of permissible tolerance and on that basis perfectly acceptable. When I do need precision I'll shim the back edge with paper or place a fresh piece of scrap wood behind the workpiece to support the back edge. A piece of softwood in this case often becomes a sacrificial edge for the final pass on every component.

Though we generally associate a shooting board with trimming end-grain I probably shoot just as much long-grain with it, often to create a reliable straight edge from which to generate the 90° end. What surprises some people is that I



Use a sacrificial board made of softwood (above) to support the back face of your workpiece rather than remake with a new back stop. The Veritas Shooting Plane in situ (right)



The typical location of the Shooting Star fixed to the side wall of a bench plane



don't use a parallel fence to do it. 'No need' I say – 'we're not dimensioning, we're creating a reliable datum'. The technique consists of plenty of forward pressure with your off hand to drive the workpiece tight against the back stop while stroking the edge with the plane to make it straight. It's a really quick technique as you can spot the high and low spots much easier than if the workpiece was clamped in a vise. Anything that streamlines workflow is a bonus in my book. By now I hope I've gone some way in convincing you that effectiveness and efficiency doesn't always mean going high tech. A little dexterity and knowing how to get the most out of the tools you have will lead to that. So, with the platform dealt with (for now) let's have a closer look at the cutting device.

Early examples of planes designed to trim the ends of boards, both wood and metal bodied, feature blades that are set with their bevel facing up and at a lower angle to those found on a typical bench plane. A closer look at your block plane should explain the setup. You'll find them listed in the category of mitre planes if you want to seek one out. Lie-Nielsen made a version of the Stanley No.9 mitre plane for a while but it's been discontinued from their catalogue and replaced by another Stanley clone, the No.51 shooting plane. Along with the mitre plane, the shooting plane is also something of a one trick pony, but for good reason. The characteristics of a plane that will trim end grain efficiently are not necessary or welcome all of the time in a good all-rounder bench plane.

Skewed blade

A significant increase in mass and a skewed blade being the two most important factors. The plane I use most on my shooting board is a dedicated shooting plane made by Veritas. It has these features and more in abundance. It's not as heavy as the Lie-Nielsen plane but more than adequate for anything I've laid in its path to date. It has to be said that both planes represent a significant investment but over time, if you're committed to hand-tool work it will pay off if are doing it often.

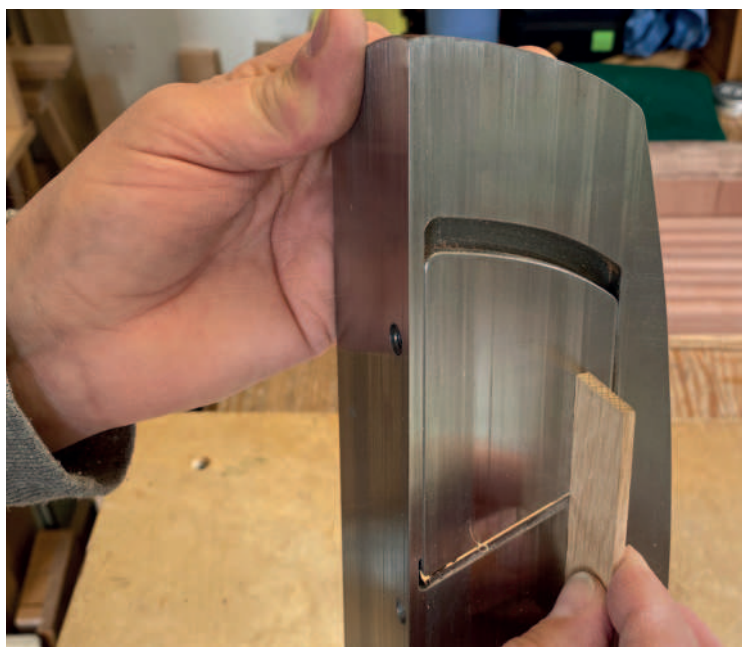
An alternative setup is one that I used for years and involves the use of a plane you've probably already got, a No.5 jack

plane. Assuming the sides are flat and square to the sole you're good to go on any shop made shooting board. Just lay the plane on its side, grip the side wall and you're ready to shoot end-grain. It won't be the most comfortable experience you've ever had planing but it will get the job done. To make this setup more user-friendly you can fix an additional knob that is screwed into the side wall of the plane. It's not difficult to do, just drill a 5mm hole, tap it to take an M6 thread and find or make a suitable knob. Record made such a plane from the 1930s up to the 1970s. Based around a standard No.5 jack plane it was designed specifically for use in technical schools and colleges. The technical jack, or T5 as it was known, had a slightly shorter body. The casting was altered to include taller side walls that aided registration when used on a shooting board. These in turn required strengthening with additional ribs and an extended forward web.

Shorter body

Any weight gained due to these structural additions was largely cancelled out by the shorter body. Earlier versions came with a flat-faced frog and rosewood handles, later ones with a recessed frog and stained beech handles. A more serious and less invasive contender for an after-market upgrade is the Shooting Star attachment (available for £74.50 at Workshop Heaven). Weighing in at a whopping 580g this streamlined billet of brass can be attached to either of the side walls of a regular bench plane to add some serious heft and comfort into the mix. Unlike a T5 it lowers the point at which you apply force to the cut reducing the likelihood of tipping the plane into the workpiece and back stop of the board. If you have low angle jack plane based along the lines of a Stanley No.62 to fix it to you're getting very close to the geometry and ergonomics of a dedicated shooting plane.

But, before we get too caught up in the hierarchy of tools it's worth considering what's actually happening at the coalface when the excess fibres are being separated from their host. Simply put, when we plane in the direction of the grain we're splitting fibres and encounter moderate resistance. When we cut across the grain we're severing fibres which



Check for even projection of the blade with a thin piece of scrap (above). Aim for equal shavings at each side of the blade. The new Shooting Star accessory (left)

requires significantly more effort. Think of it as a bunch of straws. Far easier to split the pack down the middle than cut it in two. Extra weight behind the blade is relatively easy to apply (the Shooting Star for example) but there's another feature we can use in the form of blade geometry. The angle at which the blade meets the material affects the way it cuts. It reduces the amount of force required to make the cut and also the rate at which the blade edge degrades in the process. Rather than slamming head first into the full width of the material with our blade it's much better to angle our blade so it can slice through those straws one at a time. Now that's ok if you have one of the dedicated shooting planes as they are made with a blade skewed at 20°. Regular bench planes however do not.

The solution is fairly straightforward and it lies with the shooting board and not the plane. Building a board with a sloping ramp will have the same effect. It is worth considering blade edge geometry when deciding on a general purpose plane to use on a shooting board. The most important factor being the edge needs to be dead straight without any camber and you must be able to set it perfectly in line with the sole of the plane. Forget the mouth for a moment. A steeper primary bevel, 30° for example, will withstand the extra forces involved with shooting end grain but any steeper and it will require a lot more force to produce the cut. You'll probably experience chatter and wonder why your plane isn't cutting. Low-angle bevel up planes already have this covered so go with what you have as long as it meets the above criteria. Finally the mouth setting on your plane. It's commonly accepted that the combination of a finely set chip-breaker and tight mouth lead to less tear-out and a smoother surface after planing, and to that end I'd agree when planing in the direction of the grain. However, end grain fibres are different and don't require the same attention to detail. Their connection to the host material is broken by the time you're half way through the straw and no longer an issue until you reach the far side of the board in which case a sound, rigid back stop is all that's required.

Follow Derek Jones @lowfatroubo.



Drill a 5mm hole in the side wall of a bench plane (above) and tap for a 6mm thread. A home-made version of a T5 (right)



Living the Woodland Way

As May is here, the time in the UK for bodgers to assemble, QM profiles a pioneering greenwoodworker

Ask any greenwoodworker in the UK, and many other woodworkers besides, how their passion was sparked and they're likely to mention one of Mike Abbott's books or courses. He was a pioneer of the Pole Lathe Renaissance (PLR), and though he may be associated more readily with the Log to Leg races, the popularity of pedal-powered bowl turning has much to thank Mike for. In April 1990, Mike pulled together five other pole lathe enthusiasts, Tim Wade, Gerwyn Lewis, Will Wall, Mick Freeman and Phil Hawkins to establish The Association of Pole-lathe Turners (APT, bodgers.org.uk). They decided to hold an annual gathering and invited the well-known woodworking writer, Jack Hill to open their first event. Here's Jack's description as it appeared in *Practical Woodworking Magazine* shortly afterwards: 'At a weekend gathering hosted by The Greenwood Trust held in their new centre situated in the Ironbridge Gorge in Coalbrookdale, the acknowledged birthplace of the Industrial Revolution, another much quieter, certainly less polluting and no doubt, far less consequential so-called revolution was taking place. It was a gathering of exponents, experts and hangers-on dedicated to the fine art of pole-lathe turning who, with their wooden contraptions, springy pole lathes and bits of string, came together for the first time to have fun and form the Association of Pole-lathe Turners.'

Having nowadays expanded with a wider remit, The Association of Pole-lathe Turners and Green Woodworkers (APTGW) usually hold their annual Bodgers Ball in early May.



Gwynnaf Breeze (left) who taught Mike how to carve a spoon, and Jack Hill, who 'discovered' the Pole Lathe Renaissance

This year, the event would have held a special significance for Mike as it would have coincided with his 70th birthday but thanks to Covid 19, 'The Ball' has had to be cancelled for the second time in succession. In the absence of a 'live' event, QM has got together with Mike to reminisce about his early experiences as a green woodworker.

"Yes, I remember back in 1999, when I was at the tender age of 48, hearing about the sudden death of the 70 year-old coppice merchant Bill Hogarth MBE, suffering a heart attack while working in the woods and my instant response being 'Put me down for an end like that' in the belief that I would be well ready to go by that age. A couple of years after Bill's death, *Bill Hogarth MBE Coppice Merchant* was published, in which he wrote 'Should I be remembered at all in years to come, I would like to think it was for the work put in to promote an interest in others to carry on the age-old coppice and woodland craft industry'. As I myself now approach three score years and 10, immersed in the Covid Pandemic, I can't help but contemplate my own mortality and how I might like to be remembered."

Along with so many youngsters of his generation, born in the post-War years, Mike spent much of his childhood playing in the woods, building dens, damming streams and climbing trees. At the end of primary school under the guidance of the aptly named Mrs Fear, he passed the 11 Plus exam which led him to attend Bristol Grammar School which in turn led him to spend three years at Leicester University.

"I graduated with a pretty useless 3rd Class degree in Combined Science but was incredibly fortunate to get a job as a trainee countryside ranger, a brand new profession at the time, the idea being recently imported from the USA. It comprised mainly patrolling picnic sites and chasing away unauthorised ice-cream traders. It wasn't the desirable job one might expect as a 'ranger' but my favourite role was being involved in setting up a long-distance walk called The Sandstone Trail. A day's work might consist of being dropped off in the morning to scythe the left-hand side of the footpath in the morning, then scything the other side on my way back after a sandwich for lunch."

Mike was provided an old English-style scythe with an



With Richard Ely and a collection of Chairs of Olde



Arriving home on Transhumance Day,
ready to become a full-time chairmaker.
Oh yeah?! Turn the other one!
Photographer Unknown



Pole-lathe turners are famously un-competitive

elegantly curved ‘snaith’, a pair of ‘nibs’ (or hand-grips) attached at the top end, and a long curved blade at the business end. “I loved the look and the feel of the steam-bent snaith made of ash but I was not so keen on the flat metal blade riveted to a thicker rib.”

With a resurgence of interest in scything over recent years, he gave a demonstration of bending the cleft snaiths at The Green Scythe Fair in Somerset in 2013, where he then discovered the beautifully hand-forged blades that are now available from mainland Europe. “Nowadays in my retirement,” he says, “there is nothing better than to set off at the crack of Dawn on a clear June morning for a couple of hours to clear our local footpath, using my current scythe consisting of a home-made steam-bent, cleft-ash snaith with pole-lathe turned nibs, fixed to a hand-forged Fux [schroekenfux.at] bush cutting blade.”

Moulding the landscape

The odd few days scything footpaths weren’t fulfilling Mike’s desire to mould the landscape, so he left and drifted into various jobs in amenity horticulture. He was sent on a practical City & Guilds course in Arboriculture at Reaseheath College in Cheshire and it was there that he met people who spent their time working with wood fresh from the tree. “There was a Welsh farmer, who showed us how to cleave oak logs into posts and rails for fencing, and our tutor Geoff, who showed us how to get the edge on his axe so sharp that he could shave his arm with it. Then one day in January 1976, I was browsing in the college library and I chanced upon Herbert Edlin’s classic *Woodland Crafts in Britain*. It was crammed full with descriptions and photos of a wide array of crafts involved with wood but what jumped out at me was the craft of chair bodging. I spent the next couple of years

trying to get the hang of this contraption but with no Google, no Facebook groups, no YouTube or Instagram, my only clues came from a paragraph of description and a couple of photos in Edlin’s book.”

The course and the book took him back to his childhood in the local woods, so he thought maybe a post-graduate course in Environmental Forestry would be the thing to do but without an A Level grade in biology, that wasn’t an option. But by now he was set on the idea of being a student again, so he found a postgraduate Diploma course in Management Studies (DMS) specialising in recreation at what was then Liverpool Polytechnic (now John Moores University). With that course lined up for the autumn, he quit his job, and with £100, a few hand-tools and a copy of *Walden*, or *Life in the Woods* by Henry David Thoreau, he set off for the summer hitching around Britain and Ireland, intent on tracking down other woody people to discover how he might earn a woody living.

“I visited Gwyndaf Breeze at St Fagans Museum in South Wales, who spent much of his time carving traditional cawl spoons using a hooked tool called a twca cam. But the main reason for my visit was that I had heard he had set up a pole-lathe. The thing was that in Wales the pole-lathe has been mainly used for turning bowls so Gwyndaff was reluctant to let me have a go as it was quite clear that he much preferred the continuous rotation of his electric lathe.”

Spoon Maker

Mike moved on to Pembrokeshire where he called into a craft shop to be told that their spoon-maker had retired and they would like somebody to produce some hand-made cawl spoons. “After my 20-minute demonstration from Gwyndaff a few weeks earlier, I felt confident to take on the commission, so I swung into action and felled a sycamore tree on a friend’s



Leaving the woods and the workshop on Transhumance Day 2015



farm where I was staying. Despite the absence of a twca cam I used my knife and gouge to produce a dozen cawl spoons for which I received the princely sum of around £1 each."

He travelled through Ireland and then to Scotland where he met several woodturners who had abandoned a job in the Rat Race of city life to make a living from their craft. He often discovered that instead of creating beautifully hand-made pieces, they had discovered some more productive little side-line, which they now churned out, often with one or more employees. The dream of living from their creativity had led to their return to a different kind of Rat Race, now spending much of their time on sales, marketing and deliveries.

By the time Mike reached the Scottish Highlands he had spent his £100, which had been supplemented by about £20 from the cawl spoons and a couple of walking sticks, so in Aviemore he leapt at the offer of a job as assistant warden in the bustling youth hostel and topped up his £7-a-week wages with a part-time job on a tourism survey. "I spent a pretty carefree summer meeting a load of interesting folks and discovering the local mountain bothies on my days off. If amenity forestry was out of the question and if making things for a living was going to be a struggle, then I thought that maybe my forthcoming recreation course might enable me to develop some ideas I was dreaming up about getting the general population back in contact with trees and woodlands."

The final part of the DMS course was to work on a project of the student's choice. So Mike spent three months reading all he could find, and visiting as many people as he could, to learn how to make use of the potential of the neglected small woodlands in England and Wales. "I travelled to Devon to interview Kenneth Watkins, who in 1972 had founded a little local charity called The Woodland Trust: yes, the one that has since grown into the huge organisation, we all know

and love! I also visited two foresters who had established woodlands open to the public: Tony Phillips at Brokerswood in Wiltshire and Chris Yarrow in Sussex, who has subsequently written a highly informative and entertaining book *30 Years at Wilderness Wood*."

By now it was approaching the end of the Seventies, a decade which had seen a turnaround in the attitude of the UK Government and other bodies towards woodlands. Following the devastation of Dutch elm disease, The Tree Council had been established and launched a high-profile campaign called 'Plant a Tree in '73'. The same year Herbert Edlin's woodland crafts book was republished, in which he wrote 'Since 1949, when this book was completed, the surviving crafts have declined with decisive speed.' He then listed many of the crafts that had died out in this period, lamenting: 'No one can believe that newcomers will ever take up such trades again.'

"If only Edlin were around to see the resurgence of interest in woodland crafts. My research convinced me that there might be a future for the concept of 'The Living Wood'. Given the right set-up and within reach of a major conurbation, people might be prepared to spend time in a woodland learning some rudimentary woodland craft skills, while encountering at first hand some of the many benefits offered by woodlands and trees. At the same time, if it worked out, it might just provide a great way to earn a living!"

Landscape gardener

In 1981, after a couple of years working as a landscape gardener in Germany's Black Forest, Mike returned to the UK to take a job as supervisor on a Youth Training Scheme (YTS). The attraction was that he'd be leading a team to restore the woodland around a local beauty spot in the village of Abbots Leigh near Bristol, where he had grown up. Their job was to

clear all the dead trees that had suffered from the devastation of Dutch elm disease, as well as to construct a car park, clear some footpaths, and build steps, benches and a footbridge.

"The other side of my brief was to keep a bunch of unemployed teenagers usefully engaged off the streets of the local towns and villages. At first I regarded the kids mainly as a source of free labour but it took very little time before I could see how well they responded to this kind of activity and how it developed their self-esteem. I could feel the seeds of 'The Living Wood' starting to germinate."

After three years, Mike took voluntary redundancy and spent the next 12 months as a volunteer at the nearby Windmill Hill City Farm. In those days, anyone who had been unemployed for 12 months was eligible for Maggie Thatcher's 'Enterprise Allowance', being paid £40/week for a year to set up their own business. The other not insignificant qualification was to prove that you had £1,000 to invest in your business. "That is where fate came to my assistance again," Mike recalls. "Over the Christmas of 1984 my dear old granny had died, while I was away on holiday and when her legacy was all cleared up, it turned out that she had left me exactly £1,000. I had no excuses now and put my granny's money where my mouth was, so in September 1985, I took the plunge and set up Living Wood Training. I was able to attend an excellent business start-up course and established my aims and objectives: Running greenwoodwork courses; Give demonstrations; Write articles and maybe even a book." The rest, as they say, is history but if you want to know more, you'll have to get hold of a copy of *Living Wood*, the book Mike self-published in 2002, illustrated by his wife Tamsin.

"I am well aware that when I set up my enterprise in 1985 I was riding a wave that had been set in motion by Americans such as Drew Langsner, J Alexander, Roy Underhill, by Brits such as Jack Hill, Fred Lambert, Stuart King, and by the Swede Wille Sundqvist. Over my 30 years of woodland workshops I have mentored a couple of apprentices: Jason Griffiths in conjunction with the Devon Rural Skills Trust and Ben Orford as part of The Clissett Wood Trust. I then adapted this to a more informal system I called assistantships (much the same as modern internships, I suppose) where in

exchange for food and shelter, young enthusiasts were able to spend a few weeks, months or even years soaking up the tuition on the courses, to learn from all the mistakes made by myself and the students, then go on to pursue their own chosen direction, not always but often within the field of greenwoodwork. A few notable Living Wood graduates include Steve Tomlin, Rich Ely, Ben Willis, Richard Bates, Barn-the-Spoon, Owen Thomas, JoJo Wood and Robin Duckmanton. And then there are the 2,000-3,000 people who have attended my courses, several of whom have also gone on to become professional greenwoodworkers in their own right."

Transhumance

In September 2015, after 30 years, 10 woodland workshops and three books, Mike made his final 'transhumance', an annual event emulating the tradition of Alpine farmers and moved from his summer pasture (or in his case, a woodland workshop) back to his winter accommodation in the village. This event was attended by a collection of his past assistants, by a friendly horse logger called Crunchy and by several of Mike's old friends and acquaintances.

"When I 'retired' from my workshop in the woods," he jokes, "my intention was to settle down in a workshop at home, to stop running courses and quietly work away making chairs for sale. Having spent so many years suggesting people should come on a course rather than simply buy a finished chair, I soon realised that it would be near impossible to throw this process into reverse. Of course most able-bodied people would much rather have a week in the countryside, learning a fascinating skill, meeting like-minded people and taking home a perfectly good chair that they had made through their own creative efforts. I was also well aware that by making four chairs in a week with 'students' I would earn twice as much as I would by making about two chairs a week on my own. And it was much more fun. A no-brainer!! So in the Spring of 2016 I set up a shelter in our garden at home and here I intend to keep running greenwood chairmaking courses until... we'll have to see."

"Those amongst you who are fans of blues music, will know about John Mayall, known as 'The Godfather of the British Blues'. John most certainly didn't invent the blues, nor did he invent the term 'the blues' but over the years his band, the Bluesbreakers featured an amazing array of blues and rock musicians who went on to perform in bands like Cream, Fleetwood Mac and many more. Well... I'd like to be remembered as the 'John Mayall of the Greenwood World'."

"I suppose my big hit was the book *Green Woodwork* in which I pointed out that wood grows on trees, writing that 'if we lived in a world relying totally on steel, plastic and fibreglass, where wood was unknown, imagine the public acclaim if some scientist were suddenly to invent a tree'. I now look back and feel that I made a mistake in going on to describe a tree as a 'wood factory'. The production of wood by trees is nothing short of alchemy. For centuries alchemists had been searching for ways to turn base metals into gold and silver. What's the use in that, for God's sake? Since way before humans evolved on this Earth, trees have been harnessing solar energy to combine carbon dioxide and water into this amazing material we call wood with the main by-product being pure health-giving oxygen? What could be more wonderful than that? If I have played a part in raising this awareness, then I can shuffle off this mortal coil with an easy mind!"

Mike Abbott's books Green Woodwork, Living Wood and Going with the Grain are available at goingwiththegrain.org where you can find about Mike's courses. Email him at abbott@living-wood.co.uk for more details.



Crunchy transporting Mike's gear from his woodland on Transhumance Day 2015

PHOTOGRAPH: TAM SIN ABBOTT



The Happy Reaper
Photo by Tamsin Abbott

SHARPENING & RENOVATION Honed

Richard Wile, Canada

Stone Flattening & Storing

In the first of his regular sharpening Q&As, *Richard Wile* writes about stone flattening and storing

Q I am told I need to flatten my water and ceramic stones for them to work properly. Is this true and how often should I flatten my stones?

A One of the characteristics of abrasive sharpening media is that they wear, in use they break off fresh bits of abrasive. Indeed, this friability, as it is known, is what makes sharpening stones do their job. As the steel of the blade being sharpened is abraded against the stone the surface of the stone breaks down constantly exposing new abrasive which allows the stone to do its job of removing steel. With the exception of diamond stones, which wear very slowly and do not need to be flattened, this wear on natural or manmade stones is a normal part of the sharpening process.

Many sharpeners will move the blade being sharpened over the entire surface of the stone to use the entire surface. While this approach spreads the wear out as much as possible, uneven wear is unavoidable. For example, a 50mm plane blade sharpened on a 75mm wide stone will always be in contact with the middle 25mm of the stone, wearing the middle



Richard Wile is a retired computer guy and a lifetime woodworker and luthier living in Nova Scotia, Canada. He focuses on research, writing & teaching, often with an emphasis on sharpening. Follow Richard on Instagram @rdwile

section more rapidly than the outer edges. This wear dishes out the center section creating a hollow and a blade will quickly assume the shape of the stone. Many of the stones that sharpen rapidly such as coarse waterstones will become dished after grinding a single blade, while extra-fine ceramic stones

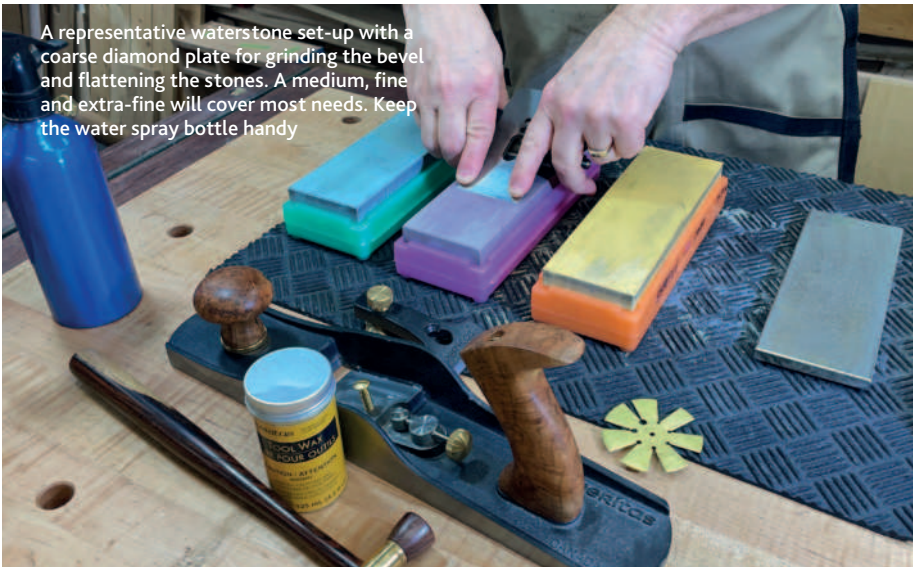
which cut very slowly, wear much slower, but will wear nonetheless.

Those that sharpen with water and ceramic stones need a solution to flatten their stones regularly. A stone can be lapped or flattened any number of ways including silicon carbide grit or paste on glass or granite, film or paper abrasive on glass or granite, other stones, truing stones or diamond stones. The key is to have a known flat reference to flatten the stone to ensure flatness is maintained. This is why I suggest avoiding using one stone to flatten another, rubbing two unflat stones against each with a “washing your hands” type motion is a difficult way to get either stone flat. You also have the risk of embedding particles from one stone in the other contaminating the surface of the finer stone, potentially producing surprise large scratches from your fine stones. This is also the case when using loose grit to lap the stone, only a thorough washing of the stones will minimize this situation. Another step on an already messy process.

Dedicated stones

Because of the importance of flat stones and some of the mess and extra steps of using other methods, I usually recommend having a dedicated stone lapping or flattening setup as a normal part of your sharpening workflow. One popular method is to use a truing stone, which is usually a silicon carbide stone which is known flat and with tightly bonded abrasive, will transfer negligible material to the stone being flattened. A truing stone is usually an economical choice to add a stone lapping option to your setup. Another popular approach, and one that I often recommend, is to use a coarse diamond plate to flatten water or ceramic stones. These steel plates are known to be very very flat and the diamonds quickly flatten your stone

A representative waterstone set-up with a coarse diamond plate for grinding the bevel and flattening the stones. A medium, fine and extra-fine will cover most needs. Keep the water spray bottle handy



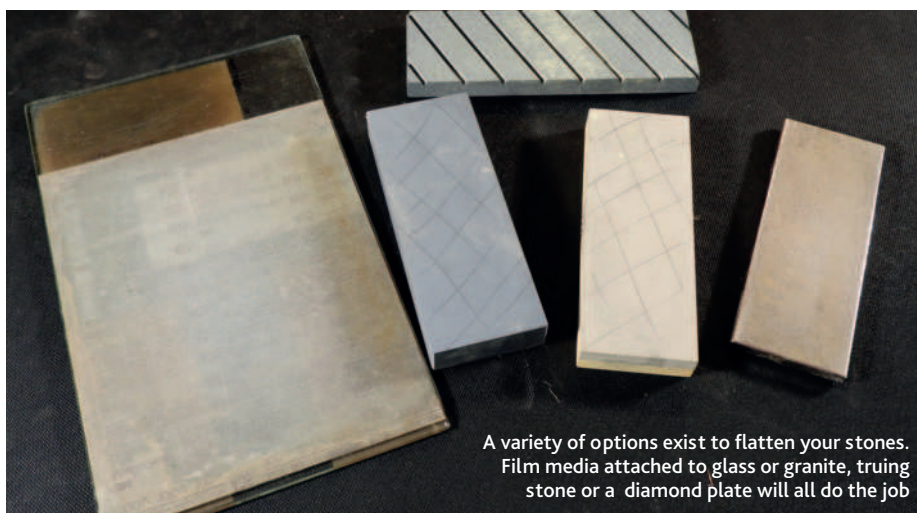


Using a truing stone to flatten. Rubbing the stone in an even circular pattern will ensure the stone is flattened over the entire surface

flatten your stone preparing it for use and the diamond plates will last a very long time. This method also has the added advantage of providing a coarse grinding option to reshape a bevel or repair a damaged blade. As these diamond plates are quite pricey, they should have as much use as possible. Having a coarse diamond plate in the 320x to 400x range will flatten all your water and ceramic stones and reduce the need to have a coarse water stone in your setup. It is often suggested that a diamond plate not be used for extremely coarse water stones below 300x as the plate will wear out quickly; best to use a truing stone for these.

Lapping your stones is easy. Mark the surface with a pencil, add water and rub the entire surface of the stone on the lapping media until the pencil marks disappear – your stone is flat now. So how often is this necessary? Many suggest a best practice is to flatten after each sharpening session so you know the stone is flat next time you pick it up. This makes it easy to wash off the stones after flattening, wipe them down and store them clean and flat for the next use. If you are only sharpening a blade or two in a session, this may be overkill, however if you are having a “sharpening day” doing many tools in one go, then you may want to consider lapping after every few blades. The key thing is to have a simple setup with the diamond plate or truing stone setup with your sharpening gear so flattening is a quick and easy thing to do. If it is a messy and onerous process, the tendency may be to delay or put it off too long; and while cambered blades have their place, we don’t want all our blades to have that shape.

Send your tool maintenance questions for Richard to answer to info@quercusmagazine.com.



A variety of options exist to flatten your stones. Film media attached to glass or granite, truing stone or a diamond plate will all do the job

Storing waterstones

Q How should I store my ceramic or water stones? Should they remain in water so they are ready to use?

A Many stones that use water as a lubricant such as ceramic and water stones require soaking before they are used. Without a pre-soak the water will just soak in and not provide the benefit of lubricating the surface and carrying the swarf away. The tendency may be to leave them in water so they are ready to use next time, this may not be the best thing to do. In a situation where you are sharpening every day, or several times per day, and the water is changed frequently this may be okay. However, a number of manufacturers do not recommend storing their stones in water long term, as it may break down the binders in the stone. Be sure to consult the technical info for your stones.

To assess if a stone needs to be soaked before use, spray some water on it and if it sits on the surface, you are good to go, if it quickly disappears it can benefit from a soak. When water rests on the surface when you remove it from soak, it

has soaked enough. Most stones should also be sprayed during use to keep a slurry on the surface to get maximum benefit from the stone. A dry stone will glaze and become contaminated with metal swarf reducing its cutting action. With use you will quickly know when a stone is drying out and needs a quick spray. If a stone is left to sit in water for extended periods there is a good chance that nasty organics will grow and contaminate the stone with a smell that can be difficult to eradicate.

For stones that require just a spray and go they should be washed off after use, especially if they have just been flattened, and stored dry. Stones that require a pre-soak do not need to be dried out every time, which will slow down your workflow; once they are flattened and washed off they can be stored wrapped in a cloth in a closed container to keep the moisture in so they are ready for a spray and go. This will keep any unwanted bugs from growing and keep your stones ready for the next sharpening session at a moments notice.

Small Tools in Transit

With some recycled oak and elm to hand *Robin Gates* builds a sliding-lid toolbox

For the journeyman joiner of old the tool chest housing every plane, chisel and saw which may be required at the next job was a necessity. It carried tools from one workshop to the next and also housed them securely. In a busy shipyard, for example, there would be scores of tool chests, each boldly painted with its owner's name, and with every tool inside it name-stamped too, guarding against a tool being borrowed – innocently or otherwise – only to be returned with a chipped edge or buckled blade. Building a tool chest was among the first undertakings for an apprentice on the seven-year indenture to becoming a journeyman.

My own needs as a hobbyist working in a garden shed, rarely taking tools further than the far side of town, and then only a few, are very different from those of the 18th Century journeyman. I'm sure that building an old-school tool chest would be an interesting exercise but I'm less sure what I'd do with it once built. In the shed it would squat on precious floor space like a fat toad, and my back would soon tire of bending to search inside it. My preference these days is for tools to be at a height where I can see and reach them with ease.

When woodworking away from home, I carry tools in a canvas or leather bag which is more sympathetic to the domestic working space, and accommodating to the needs of the moment. But that isn't to say a sturdy little wooden box doesn't have a role to play. It's just the thing for smaller tools like knives, dividers and gimlets, not to mention hinges, screws and nails.

One advantage of the sliding-lid box is compactness. A box with a hinged lid requires at least its equivalent height in air space for the lid to stand open. Besides which, a sliding lid requires no hardware, while the square-knuckled hinges enabling a lid to stand open cost around £33 a pair, and installing them is an exacting task.

This box was inspired by a German ditty box of around 1900, once used to store a sailor's personal items like a razor, sewing kit and letters. The German box was made of pine, with dovetailed corners, while mine was scaled down to fit odd boards of recycled oak and elm, and has rebated corner joints, but the bottom is nailed on as original.

Well-seasoned stock

At 91/2x5x3in the dimensions of this box were dictated by the timber. I enjoy the challenge of adapting a plan to fit 'found' wood, and I think it makes economic and environmental sense to recycle what would otherwise be burned or buried. But there are sound woodworking reasons for using recycled wood, too. It's well-seasoned stock and often of a superior cut and species to what's on offer at the DIY store. At the local tip



Easy portability is a strong point of the small tool box

I plucked an old cutlery tray from the mountain of discarded flat-packed furniture and found that, beneath its moth-eaten baize and treacle-thick varnish, there lay precious inches of vintage teak. Recycled wood brings its own challenges – splits, screw holes and weird shapes arising from long-lost purposes – but these can add character to the thing made.

The oak I used had come from a gloomy sideboard, stained dark on one side, varnished on the other, and with strangely canted mouldings along its edges. The scrub plane made short work of levelling those edges, also stripping the stained surfaces back to bare wood. Following on with the jack plane removed the tracks of the scrub plane, giving me a thickness of about 5/8in just right for the sides and ends of the box. The elm plank I had to work from, meanwhile, was all that remained of an Ercol table which had stood for some years in a farmyard, protected from rain by boxes of scrap metal but severely bowed as a consequence. I sawed the elm into shorter lengths, which made the bowing appear less worrying, then resawed it to a thickness better suited to lids and bottoms, finishing up with a uniform thickness of about 5/16in after planing.

Although I've cut a good few rebates down the years, making window frames and shiplap drawer bottoms, for example, there'd been many a sin concealed by glazing putty or brown paper linings which would find no hiding place in the small box I had planned. Cometh the corner joint and the sliding lid, cometh the fine rebate joint, or so I hoped. And while I was at it, I'd compare two techniques for cutting a rebate: chiselling and sawing.

First, the chiselled rebate. With one oak piece flat on the bench, the other standing upright, I used the thickness of the

Planing an edge of the
reclaimed oak



wood itself as a guide to the width of the rebate of a corner joint, lightly scribing with the corner of the chisel. I continued the line half way down each edge to mark the depth, then across the end of the board using a marking gauge. A sharp rap of the lump hammer on the split-proof handle of the Marples one-inch chisel deepened the cut across the face of the board, and then I chiselled up to the nascent shoulder of the rebate, creating a sloping trench in the waste.

Repeating this procedure, the trench grew deeper and wider until I could safely begin splitting out the waste from the end of the board, taking progressively thinner bites as I neared the base line. For removing the last few fibres I clamped the board vertically and pared down to the line. Now that the floor of the rebate was flat, I pared across the grain to clean up the shoulder. After so much hammering, splitting and paring I was relieved to find the two parts of the corner went together at a right angle with barely a gnat's whisker between them.

Next, the sawn rebate, for which a newly restored vintage tenon saw was making its debut at the bench. As a child of the 1960s, I have a soft spot for the tools of that era, and back when I accompanied Dad to the timber merchants I recall Spear & Jackson's Double Century tenon saw was a DIYer's dream, distinguished by a Royal Purple badge and displayed behind glass. Its handle lacks the extravagant horns and fancy carving beloved of saw connoisseurs, but its streamlined form is symbolic of its age. Besides which, it's a lovely chunk of Brazilian rosewood which, poised behind that heavy ingot of brass bearing down on a freshly sharpened blade, only requires nudging gently forward to get the kerf underway.

Compared to the short, considered movements of the chisel, I find the errors of sawing can stack up with remarkable speed. If concentration should lapse I'm prone to fall into a see-saw sawing action, cutting deeper at the ends of the kerf than in the middle. For sawing the floor of the rebate I clamped the work vertically in my trusty Parry & Bott corner vice, carefully sawing short of the baseline. I sawed the rebate's shoulder on the bench hook, which not only supported the work but helped in keeping the saw level.

After breaking out the waste I cleaned the angle of the rebate, assembled the corner and found it virtually

indistinguishable from one cut by chisel alone. The saw was faster than the chisel, but where the chisel may have the advantage is in cutting a rebate longer than the saw, which I imagine would be downright awkward, and anyway far easier using a rebate plane.

Having cut the elm base to approximate length, I stood the oak sides and ends upon it, clamped all squarely and planed around the top edges, carefully marking which piece went where in readiness for final assembly.

Next came the eponymous sliding lid, essentially a rebated board riding in grooves. I used the diminutive Record 043 plough plane to cut the grooves, and used it again for rebating the lid to fit the grooves. So, all told, I used three rebating methods in this project.

Hammer and nails

I assembled the box using copper boat nails with a back-up bead of glue, stepping out the distances between nails with dividers. Although copper nails are softer than ferrous fastenings, requiring pilot holes in tough timbers, if they can hold a sea-going boat together they're certainly good enough for a small box, and a tidy choice for furniture in general. Using a larger drill bit I was able to cut shallow countersinks for the nail heads to lie just below the surface, allowing finishing with a card scraper.

With a block plane I adjusted the edges of the lid for a progressive friction fit that tightens near the end of its run, slotting home with a pleasing knock of wood on wood so as not to open without being pulled. Speaking of which, the only piece now missing was the lid pull – a strip of oak I'd earlier sawn from the low end of the box. I cut a rebate for it at one end of the lid, completing a contrasting oak surround to the livelier grain of the elm. For the finish I applied a 1:4 mixture of beeswax and liquid paraffin, also with a dash of lemongrass oil for its pleasant citrus scent.

It had been a slow journey from reclaimed wood to box, but an enjoyable one, working at the human pace of hand tools. Something I would do differently, however, is to build a sturdy right-angled jig for assembling corner joints. Working without one, two hands are not enough!



Scribing the depth of a corner rebate (left) and using a marking gauge on the end-grain (right). Test fitting of a chiselled corner rebate (below left) and chiselling waste from a corner rebate (below right)



A small box holds a tidy assortment of basic tools



Breaking out waste from a sawn rebate (left), ripping a rebate with a Double Century tenon saw (right) and driving copper boat nails with a pin hammer



Shooting a square end for the elm base (left) and scribing a rebate to accommodate the lid pull (right)



Nickel-Plated Gem

Robin Gates is won over by a Record plough plane

After working with such elementary hand-tools as the chisel and the saw, getting to grips with a plough plane feels like learning a new language. My oldest plough is a beautiful 1920s tool made by William Greenslade of Bristol, discovered in a Gosport junk shop 35 years ago complete with eight thick irons in a green felt roll. Beautiful to behold, anyway. Back then my head had been turned by the gentle glow of its work-worn beech and brass fittings. In the hands of its original owner, a joiner in Portsmouth dockyard, I'm sure the plough ran fast and true, but in my inexperienced hands it stuttered and wandered like a drunken sailor. A decade on, however, and I found the plough plane I should have bought earlier, the delightful Record 043, complete in its original box bearing the date 1951 and a price of 26 shillings.

At first glance this nickel-plated gem of the Record range seemed as baffling as its sturdy wooden ancestor, with arms and screws sticking out all over, but I was soon won over by the almost surgical precision of its operation. Setting the fence of a wooden plough can be frustrating, with fence arms moving awkwardly as you adjust one and then the other, only to lose their setting altogether when you knock the wedges home. In essence the Record 043 is no less complicated, but its fence arms are locked securely by cheese-head screws and the fence itself slides over them like a well lubricated piston, always remaining parallel with the skate, and fixed by finger-friendly turnbuttons.

Still, you have to hold it correctly, and again there's little difference between the 043 and its wooden ancestor. Your driving hand rests on the heel of the stock while the fingers of your second



Rebating the lid to fit the grooved sides of the box and ploughing a groove for the lid (above)

hand push against the side of the fence, keeping it firmly up to the work. Comfort is improved by the broad rounded heel which is also angled forwards, directing pressure onto the cutter.

And if there's one sticking point, it is perhaps setting the cutter; but not once you understand the procedure. Whereas the sturdy iron of the old wooden plough was grooved on the back so as to facilitate correct location on the edge of the skate, the Record's little steel cutter (there are three, at 1/8in, 3/16in and 1/4in) floats about like a loose tooth until you get a grip on it with the lever cap. And beware, the lever cap is an independent part, easily dropped along with the cutter if you're not careful.

The important feature is a crater-like depression shared between the lever cap and the body of the plane, with the cutter passing between them. Before loosening the lever cap screw, and with the plane tipped sideways in the hand, depth stop facing downwards, you place your thumb in the depression, thereby preventing both the cutter and the clamp

from falling out, meanwhile allowing sufficient movement that the cutter can be moved up or down and the clamp tightened. Light finger pressure alone is sufficient. There's none of that hit-or-miss tapping with the hammer required to set a wedge-locked iron.

Not that I'm berating the more traditional wooden plough, it's just that to get the best from one you'll likely need the confident hand of a time-served joiner, whereas an enthusiastic amateur such as myself can pick up the Record 043 and have it working well almost immediately. The fact of the new Quangsheng 043 being a near copy of this 85 years-old design only serves to underline the brilliance of the original.

When ploughing grooves for the sliding lid of the box (previous pages), I clamped the oak flat on the bench with a holdfast, and began planing at the far end of the piece, gradually working back, lengthening and deepening the groove with each pass, meanwhile keeping side pressure on the fence to prevent the plane drifting. As full-length shavings sprang from the cutter like bangles, curling around the fence arms, I was careful not to allow a shaving to get between the fence and the work which would have thrown the plane off course.

Shavings from cutting rebates in the more confused grain of the elm lid tended to bunch up behind the cutter, and I had to clear them after each pass. A handy tool for this job is a pointed lolly stick as it doesn't risk damaging the cutter's edge.



A thumb secures the lever cap while the cutter is adjusted (left) and clearing jammed shavings with a lolly stick (above)

Making a Case for Chisels

Keen to protect his chisels in cases of their own, *Dylan Iwakuni* splits and glues straight-grained wood

Chisel rolls, boxes and cabinets, there are numerous ways woodworkers store their precious chisels. I use a chisel roll to hold my chisels, but for bigger ones I prefer to make a case out of scrap wood. Here is the simple method I use to make them. The idea for this case is to split the wood, chop the opening for the chisel, and glue the wood back together. If done well, the seams become almost invisible, giving the impression the opening has been drilled into the wood.

Any kind of scrap wood will work but choose one with relatively straight grain to make the splitting process easier. The first step is to simply split the piece into two. From the end-grain, firmly hammer the chisel and the wood should split along the grain. On one of the inside faces, place your chisel with the back down and trace the outline. Once it's marked, chisel a few millimetres deep following the shape. As the wood is small, clamp it down firmly and chisel a little at a time. As you chisel, regularly fit the chisel to check the shape.

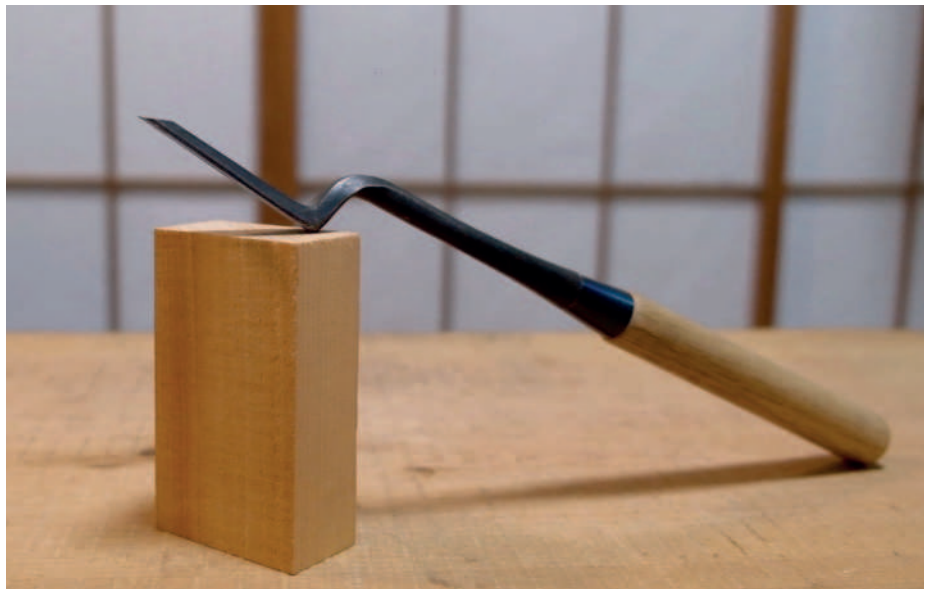
Place the opposing piece, copy the width of the chiselled opening and mark out the remaining shape of the chisel. The same is true for the top half. As it gets close to shape, hold the two sides together and try fitting the chisel to see the fit. When the chisel is inserted, the two pieces should remain touching. This part will probably require some going back and forth, slowly tweaking the fit.

Once the fit is good, the two sides are glued together. Apply glue on the surfaces and clamp the two sides together. After the glue has dried, both ends can be sawn off, removing any pencil and chisel marks. From here, you can style it to however you fancy. If the size is too bulky, the sides can be further split. For the surface, leaving it as is with the unique texture or hand planing it smooth, either way works well. The shape is also up to you. The only thing I would recommend is chamfering the sharp edges.

This method has been my favourite way to make a chisel case and I've been making numerous cases with whatever scraps I had laying around. It's a simple chisel case but I can assure you people will look and ask questions when they see your work.



The case I will be making is for this Kote Nomi (goose-neck chisel). This chisel is used in places where the handle on a standard chisel would interfere, such as when cleaning grooves. For the wood, I had picked up a scrap piece of Hinoki (Japanese cypress)





When splitting the wood (above), chisel from the end-grain. Ideally, choose a piece of wood with relatively straight grain and avoid knots to make the splitting easier. Tracing the outline of the chisel (right)



When it comes to chiselling the opening for the chisel (above), firmly clamp the piece down and chisel a little at a time. The chiselling does not have to be perfect but the bottom surface should be mostly flat



Once both sides are chiselled and the fit of the chisel has been checked, glue and clamp the two pieces together. I use tape to note the two pieces together but adding a clamp would be better



Both ends have been sawn. A light chamfer is being made on the edges (left)



The finished case (above). For mine, The chisel case (above) with its chisel inserted snugly. I hand planed both sides but left the top and bottom as is, with the distinctive texture of the split grain. The finish and shapes are entirely up to your creativity. Making a chisel case can quickly becoming addictive and you may find yourself making cases for yet more chisels. One thing to note is if the wood is still wet, it can cause rust on the chisel. In the case you are worried about the moisture in the wood, I would suggest either applying oil into the case or applying oil onto the chisel before storing it away in the case

The Medieval Toolbox

Having visited a timber framing weekend, Gerwyn Lewis is intrigued by medieval tool chests

One of the more unusual books in my collection is LF Salzman's *Building in England Down to 1540*, first published in 1954. It features a wonderful early woodcut which has been much used in rediscovering medieval woodworking techniques. It's amazing how little has changed in the world of oak timber framing. You have to refer to the timber frame carpenter for comparison because furniture as we know it today barely existed with their system of communal living. The word 'medieval' is also slightly misleading as most of our wonderful heritage is from the Tudor period and the great rebuilding of England during the reign of Elizabeth 1. I cannot claim, either, that all the tools I've selected are exactly from the period. It's a best guess.

Amongst the wanderings June and I have undertaken in a campervan, was a tour of Denmark four or so years ago, and we just had to visit the Viking Museum at Roskilde. This is where I spotted the Viking toolbox they had reconstructed. When we got home there was no choice; I had to make one. I have selected contents from that Viking toolbox and compared it to the medieval illustration. The similarity is staggering. The tools available to the Viking craftsman and the English timber framer are almost identical.

In 2008 I was fortunate enough to participate in a course at Cressing Temple in Essex where the Carpenters Fellowship constructed a small building using entirely hand techniques. The photograph of the scene reflects the sheer biblical effort that went into constructing a frame. It is important to emphasise that most timber would have been worked in its green state, that is unseasoned. Many of the tools used for this work today would have been familiar to the medieval carpenter.

The hewing axe was an essential tool. Most timber was not sawn but hewn. Pit sawing was very labour intensive and expensive, and only used for thin stock such as floor boarding. For framing most of the stock was squared off baulks.

Hewing out timbers with an axe can be surprisingly quick. Notches are cut along the length to break up the grain and the remainder is cleaned off with speed and accuracy. Other axes would



ILLUSTRATION: OXFORD UNIVERSITY PRESS



Illustration (left) from *Building in England Down to 1540* by Salzman (with permission of Oxford University Press (oup.com)). A medieval carpenter's toolbox was likely to include: cross-cut saws; a frame saw; hand saw; felling axe; hewing axe; hand axes; drawknife; adze; froe; chisels; holding dogs; spoon bits; drilling augers; level; pairs of compasses; marking awl; string and chalk lines; square; and plumb bob. A Carpenters Fellowship course in 2008 (left) at Cressing Temple, Essex was a biblical scene, with a small building being constructed with traditional techniques and green timber. The tools were much the same as those to be found in a medieval toolbox

have been used for cutting tenons etc. An adze would also have been an essential tool for cleaning up surfaces. In skilled hands it produces a lovely finish. Drawknives would have been used for cleaning up thin pieces, like staves.

Spoon bits were used for taking most of the waste out of mortises. There is plenty of evidence of this if you examine the bottoms of old mortises, before being cleaned out with chisels. Other holes would have been drilled using a bow drill, and the Viking Museum have a huge collection of these.

Various types of saws were common. The frame saw will be familiar to most people, but as in the medieval illustration they had good cross-cut saws, frame saws and hand saws. The hand saw bears an uncanny resemblance to an old pruning saw, and I have found that it's much better used on a pull stroke as with Japanese saws.

Measuring tools are fascinating, bearing in mind that most medieval

craftsmen were illiterate and innumerate, working under a skilled and educated master carpenter. In these days of metric measurement, you have to be of a certain age to be familiar with feet and inches. If I say to my son when working with him that a certain measurement is 115/8in he says: "Is that in rods, poles or perches, Dad?" It's called 'taking the mick'. Everyone is aware that yards, feet and inches are based on body measurements, but it's not so well known that a rod is 16 1/2ft, the distance needed to reach across a pair of oxen. One acre was 4 rods wide and 40 rods in length. I digress.

From the illustration again, it's plain to see that they had squares and measuring sticks of known lengths and widths. More importantly, they would have had chalk lines for striking lines, compasses for setting out, plumb lines, spirit levels and marking awls. Explaining how these were used will have to be for another time.

Working with Fish Heads

Surprised by a crazy find, *Rex Krueger* resurrects a forgotten marking gauge with elongated fence

My phone dinged and a picture popped up with a note: “I just found this crazy old marking gauge. Ever seen one like it?” I hadn’t. Old tools stick to me like nails to a magnet and I’m not often surprised. But my friend Brad had found the gauge at a Texas yard sale and knew it was special. He paid a few dollars, knowing I wouldn’t be able to resist taking it off his hands. A deal was struck, and a few days later I was holding the tool.

It is a curious thing. The tool was quickly made, maybe even a bit crude, but its function was clear. The long beam, the locking wedge, the pointed screw for scribing; it was obviously a marking gauge. Despite its rough finish the gauge has straight lines, confident chisel work, and the dings and scratches left by decades at the bench. It might have been made fast, but it served its maker for a long time.

But why go through the trouble to make a gauge that’s so much more complicated than the traditional English or French-pattern gauges that most of us rely on? This one relies on two intersecting mortises. If these aren’t chopped with precision the wedge won’t lock the beam and the tool won’t work. It’s hard to imagine a craftsman taking the extra time. The standard English-pattern gauge needs only a single mortise with a notch for the wedge. These gauges are fast to make and they work well. So where did this crazy thing come from?

Holding the old gauge gave me a few hints. It fits the hand wonderfully. Laid at a slight angle, the tool extends from the tip of your middle finger to the heel of your hand. The curved tip fits the index finger and there’s a flat spot for your thumb to push against. The wedge can be tightened by pulling with your middle finger and it can be loosened by pushing with the thumb. A few taps on the bench can micro-adjust the beam or lock the wedge firmly in place. It holds its setting effortlessly, but it was still a mystery.

An hour of careful work on Google gave me a few clues. I found a few brief references to a ‘fish-head gauge’ and they looked a bit like mine. There was also a single Ebay auction for a more refined version of the tool. I bought it...because I’m a hoarder.

Using these tools tells you more than any book will. They excel in situations where the standard gauge barely works. The long, fish-shaped fence provides a solid grip, and its long registration surface gives it much more bearing against the wood. In contrast, the English gauge is compact and easy to make, but it only works well for relatively short distances. Once the beam nears its full extension, there’s too much leverage on the small fence and the pin is likely to drift. Most of us adapt by using two hands to steady the gauge when marking longer distances. The fish-head gauge eliminates these problems. Its generous fence has a huge bearing surface and it easily balances the leverage from the beam. Even at its maximum setting, you can confidently strike lines one-handed, which is especially handy when you must hold the work with your other hand.

The gauge I purchased from Ebay is dead-flat along its face, but Brad’s gauge has a faceted face. It will either ride along the flat edge of the board or trace an inside curve. This detail gives a hint at the gauge’s origin. According to some sources, these tools were once common in the carriage-maker’s trade.



These craftsmen often needed to scribe lines along curved or irregular services and a fish-head gauge clearly fits the bill. There’s a related tool called the ‘grasshopper gauge’, and this model is more associated with the house joiner responsible for installing curved handrails. It seems likely that this form represents a whole family of tools that look similar on the surface but are adapted to specific trades.

Making the gauge

Whether it’s a fish-head or a grasshopper, you might very well want this handy tool for your shop. The gauge takes a bit of skill to execute, but it can be knocked-together out of scraps.

Begin with a scrap of hardwood about 7in (180mm) long and 1 1/2in (38mm) square. Lay out the mortise for the beam and chop it with a 1/2in (13mm) chisel. Your mortise chisel won’t fit in such a dainty hole, so use a slender, bevel-edge tool instead. Rotate the piece 90° and lay out the smaller mortise for the wedge. This mortise must taper, so it’s a bit taller on one face. Chop this one with a 3/8in (9mm) chisel.

Cut your beam stock and slowly plane it down until it fits the mortise and slides easily. The wedge is easily made from off-cuts, but it takes careful fitting to match it to your tapered mortise. It took me two tries to get this part right, so don’t get discouraged.

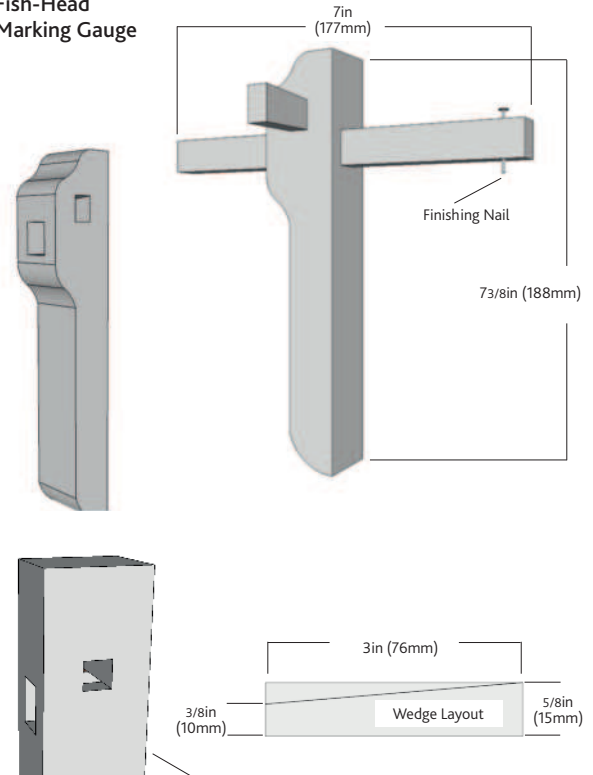
You might find that your wedge won’t engage your beam no matter how hard you tighten it. The original maker ran into this problem, too. Brad’s gauge has a little strip of copper tucked into the roof of the beam mortise. Pressure from the wedge deforms this soft metal and pushes it down into the beam. Honestly, it’s an inelegant solution and you’re better off making your wedge mortise intersect your beam mortise



The fish-head gauge (left & right) is obviously different from the standard English marking gauge (centre). A traditional gauge might struggle to strike a line so far from the edge (below), especially one-handed. The fish-head gauge seems designed for this work



Fish-Head
Marking Gauge



The two mortises in the fence need to intersect so the wedge can grab the beam. The wedge mortise is tapered to fit the wedge. It's 1/2in (13mm) high on the end facing the user and 5/8in (16mm) high on the side away from the user

just a little. I threaded a narrow turning saw blade into the wedge mortise and sawed down the edges of the fence just a fraction of an inch. When I chiselled out the waste, the wedge grabbed the beam and stopped it dead. Once the moving parts all work to your satisfaction, disassemble the gauge and shape the fence. My gauge from Ebay has a truly organic shape. It's like silk in the hand, but I can't be bothered to put that much work into a marking page. Instead, I used the radius of my oil can to mark a few curves, which I sawed away with the turning saw, then I took a rasp and a spokeshave to the corners until they suited my grip. I rarely mark along curves, so I left the fence flat along its face, but making a radius here would take only a few minutes' work with a hand plane. Make the tool to suit your work.

As a finishing touch, I inserted a little pin through the narrow end of the wedge. This detail captures the wedge and keeps it from sailing across the room if you release it a little too hard. I then gave everything a single coat of boiled linseed oil and set it down with the rest of my gauges. Call this gauge



After a little trimming, the wedge-mortise intersects with the beam-mortise. You can see the beam poking up a bit (above left). The wedge will now be able to grab the beam and lock it. The little mortises call for a slender chisel and a light touch (above right)



a fish-head or a grasshopper, it's a useful little tool. I'll stick to the standard English-pattern gauge for most of my marking, but for those difficult tasks and awkward one-handed jobs I've got a new tool in my kit. And if you'd like to see me make this gauge, there's a new video on my YouTube channel.

Rex Kruger is a furniture builder, author, and content creator living in Cleveland, Ohio. He makes videos on YouTube ([youtube.com/rexkrueger](https://www.youtube.com/rexkrueger)). His new book, Everyday Woodworking: A Beginner's Guide to Woodcraft with 12 Hand Tools will be released in June and is available for pre-order on Amazon.

Accessing Woodwork

Maplewood founder, *Michael Schloff* asks why teachers won't teach woodwork

Have you had conversations with educators who would love to incorporate woodworking into their curriculum but feel it is: Too dangerous due to potential cuts, fine dust, or catastrophic accidents; Too costly to create a workshop with power-tools, ample space, and necessary ventilation; Too complex to implement due to lack of appropriate lesson plans for children and/or youth with special needs; Too hard to staff; and/or Too removed from the skills children need in the 21st Century? Why is it that woodworking has become exotic and inaccessible to most youth? What if there were a way for young people to learn woodworking from teachers and community members they already know, in multi-purpose rooms, and in a safe and developmentally appropriate way?

Growing up, I was always taking apart clocks, bikes, and other mechanisms that were not meant to be taken apart, and then learning how to fix them... or not. At the age of nine, in 2nd Grade, I think, I spent half the school year in the hallway due to my inability to sit still. However, I was always curious,

a trait for which I am grateful to my parents for having instilled in all their children.

More recently, in 2004, my wife and I and our two young children moved into our first home. It was large, and old, and we could not afford all the repairs we wanted to make. I learned to install an electrical switch and repair a faucet. Then I had to make a single stair. I bought a No.4 Buck Brothers plane at Home Depot, an oak 1x6 and while rounding over the lip of the step, discovered the mental presence of working with wood. I was hooked. There and then, I set a long-term goal for a 35 year-old, that by the age of 70, I would be an amazing woodworker.

By 2015, I was on my journey and a friend decided to organise a fair for makers called MakerMadness, in our town. I developed a step stool project that used pegged tenon joinery I had seen in a museum and set up my table. The line to do the woodworking project was an hour long. Kids were passing on other projects, just to do woodworking. I was in heaven. Teaching and working with my hands was pure joy.

A year later, at the second MakerMadness, I launched Maplewoodshop. That year I taught woodworking to children and adults using a daycare centre after hours with tables that could convert from toddler tables to adult woodworking tables via telescoping legs and removable vices. The classes taught me that people learn in a variety of ways and that holding the wood was a major factor in accidents.

Woodwork in Arts

Several months in, I met a teacher from nearby New York City, who had wanted to implement woodworking in her arts curriculum for years but was challenged by the reasons I have discussed above. I thought, what if we could make a woodworking program safe? What if we could make the program portable so that we could bring the shop to the class instead of the class to the shop? What if we could remove the need for a highly certified teacher and open the potential for a large number of teachers to be skilled as they teach in a self fulfilling, scaffolded way?

From that chance meeting, we grew a training regimen, curriculum, curated set of tools, workbenches and tool chest that make up the core of our program. We also birthed our mission: to develop life skills in all children through woodworking. We try to remove all the obstacles to implementing woodworking programs that have existed since the demise of the traditional Slöjd or industrial arts programs across the United States and many parts of the world.

Starting with safety, we coach our teachers on how to establish a proper mindset. One that starts with mental presence, accepts failure as a path to success, teaches that each student deserves help and has a responsibility to help others. The training then moves on to 'common sense' shop rules that prepare students for proper hand-tool and eventual power-tool use. Finally, we train on each tool in a laddered succession so that projects are fun but develop skills underneath. Finally, the workbench allows for secure holding of the wood, removing the need to hold the wood with one hand and potentially injuring that hand with a tool.

For staffing and training, we flipped the script and found that



A student using the frame saw he made in a class



Maplewoodshop's first
Pegged Joined Stool
project. Pure joy



Special needs students
with their tool totes

it was easier to take adults who are great with kids and train them than training skilled woodworkers to work with kids. This increased the number of potential teachers by an order of magnitude. So far, 90% of teachers using the Maplewoodshop program have no background in woodworking. After training two dozen teachers, I codified the training in a series of videos that we share with our partners. Then we meet with the teachers either in person or over a live but remote session using Zoom. This enables us to re-emphasize safety, coach on footwork and body kinetics, and to work together to build a simple box project.

Building an example

Finally, we ask that each teacher builds an example of what they are going to make with their students and mark up a life-size template they can use in the classroom. We used remote training to save on travel costs even before the pandemic and found that it was effective.

The best way to keep costs down turned out to be to bring the shop to the class rather than build a dedicated shop. The keystone of this approach is a tabletop workbench I created based on a Moxon vice and many experiments. These workbenches, along with a curated set of hand-tools (no power-tools) all live in a purpose-built, rolling, locking tool chest that can be wheeled into a given classroom. In a matter of minutes, the class can be working.

The workbench is designed for $\frac{3}{4}$ in to $1\frac{1}{2}$ in thick material. In fact, many of our projects use 1x6in lumber since it is easy to source by the partner. We start all our projects with 36in long boards for easier storage in a closet instead of assuming a class will have a wall rack for 16ft boards.

The workbench is effectively a large clamp that attaches to the sides of a table and rests on the top. This means that when adjusted, it is as solid as the table it is on. It does not



Teachers trained from an elementary school in Brooklyn, NY

require additional F-clamps since it is effectively a clamp with integrated workstations. The workbench is extremely portable, weighing in at 12lbs (5kg) for two people.

From a learning perspective, the workbench also encourages students to work in pairs, teaching and learning from each other. Expanding outwards, a 30in by 60in table with four young woodworkers, becomes a group. Organically, one learner will be more facile with woodworking and can be 'deputised' to bring the others along with them.

The tool chest has a place for each tool and uses pictograms so that woodworkers learning to read or learning tool names can always find, and replace, the tool they need. I

was inspired by the Studley tool chest and many fine examples of portable tool chests.

We chose to start with the bottom of a learning pyramid to bring more people into the fold rather than by creating the forbidding atmosphere of some expert woodshops. The initial projects are fun but focus on training students on a specific tool such as the hammer, or a combination square, or how to saw with a Ryoba saw. Then, we move to projects that have orders of operations and 'wrong ways' to build.

Thus projects start with sanding blocks, 'string' art using hammer and nails, then advance through dozens of projects until students are using cross-grain plies and through-tenon construction to make kitchen stools. A fun part of the job is creating new projects every year. Please send ideas if you like.

We took from multiple woodworking traditions, such as Japanese saws and shinto rasps, but also with Western block planes. We do not use chisels, which is disappointing but we have not yet found a way to introduce those at scale. Perhaps in the future, we will have more advanced offerings or refer our graduates to the many other fine classes and courses that already exist.

Getting feedback

The woodworking is not just for the sake of woodworking. We got feedback early on that if we could teach maths through woodworking, school principals would be more interested. This year, we took five of our most popular projects and worked with teachers to develop complementary Maths, Science, Social Studies, Reading Arts, Social Emotional Learning, and Design curricula. This means that a student can have a holistic learning experience revolving around a project where the other concepts make sense because they are grounded in something tactile.

The skills children develop include creating an engineering mindset of designing, testing, implementing, and iterating the design. Students also get a chance to explore their identity through the Arts and Design projects. Students develop an appreciation for working with their hands and gaining early (as young as 7, soon to be as young as 4 years old) exposure to a craft and a potential trade. More deeply, students learn perseverance, collaboration and creative problem solving.

By now, we have trained, equipped, and supported 80 schools, camps, and community organisations to work with children aged 7-15. Included in this number are several schools that focus on children with special needs.

We are grateful to all woodworking teachers and mentors on whose shoulders we stand. At this point, we are recognised by the regional chapter of the International Brotherhood of Carpenters as a stepping stone towards their apprenticeship program. In addition to trades, many schools use us as a tactile way to teach STEAM (Science, Technology, Engineering, Arts and Math).

The mission, curricula, toolset, workbenches and chests we've developed over the last five years leave us eager to build more programs, for more institutions, for more learning environments, and for more types of people. How to teach for remote STEAM and CTE (Career and Technical Education)? For workforce readiness? And how young can we go? Why not a pre-kindergarten curriculum as well?

In the meantime, let me finish with how you can help others discover the craft we love. You can volunteer to visit a school. You can use our, or others', methods to make woodworking accessible to as many students as possible. And remember, everyone starts as a beginner. Something will go wrong. How you deal with it is what matters.

Follow @maplewoodshop or visit maplewoodshop.com.



The current workbench (above). Children helping each other (below)



Students with guitars. Something will always go wrong. It is how you deal with it that matters. A student with a stool and training teachers in 2020 (below)



A Crafty Way of Smoking

Discussing the craft & art of making pipes, *Steve Schuler* drills the bowl and fits the stem in part one

Not so long ago, the tobacco pipe was a standard piece of personal equipment, as familiar as one's favourite armchair. Times have changed, and for public health reasons, tobacco smoking is much less common than it used to be. Yet there is still something wonderfully relaxing about smoking a bit of fine tobacco in a pipe, especially if you have made the pipe yourself.

Pipe making is both a skilled craft and a fine art. The best pipes are made by artisans who have mastered both sides of pipe making: the craft of making a pipe that smokes well (uninterrupted airflow, no gurgling or whistling) and the art of making a pipe that feels good in the hand and looks beautiful. Many of these pipes are expensive, and for good reason; they are heirloom-quality objects, made to enjoy frequently over the course of a lifetime.

However, making a good pipe is well within the capabilities of any competent woodworker. If you can cut an accurate mortise and fit a tenon to it, then you can make a pipe that works as it should. But to make a pipe that is comfortable to hold and beautiful to behold, it takes an eye for detail and a willingness to fuss with things until you get them right.

Materials

When tobacco was first brought to Europe, it was smoked in clay pipes, which had the advantage of being easily mass-produced. (Fine clay pipes are still being made today.) But clay pipes are easily broken, and the bowl heats up as it is smoked, making it difficult to hold.

Today, the best wooden pipes are made from briar wood harvested from burls that grow on the roots of cultivated scrub trees in the Mediterranean region. Briar blocks are expertly cut from the burls to reveal spectacular grain patterns. Not only is briar a beautiful wood when polished, but it also has an unusually high flashpoint. It is the ideal pipe wood.

Blocks of briar can be bought mail-order from many suppliers (see details at the end), but other woods can be used as well. Fruitwoods have been widely used for vernacular pipes: cherry, pear, plum, apple, and persimmon. The denser the wood, the better. Be careful in your wood selection, though. It should not have an odour that would be unpleasant when mixed with

tobacco smoke, so avoid oaks and conifers especially. The wood must also be well seasoned. The wood I am using for this pipe is American black cherry from a tree that was cut about 15 years ago.

Most pipe stems are made from vulcanite rubber, but some are acrylic. Professional pipe makers drill and shape their own stems from vulcanite rods, but moulded stems can also be purchased mail-order in many sizes and shapes. Other materials like horn, antler, bone, and even hollow reeds are used from time to time. Any hard, slightly flexible material that will drill easily and hold a tenon can be used, including fine-grained hardwoods. (You are only limited by the length of your drill bits.) Bear in mind that one end will go in your mouth, so it should not have a distinct taste. But if you want to make a long-stemmed pipe (called a 'churchwarden'), you will probably need to use a pre-moulded stem or a hollow reed. I'm using moulded stems in each of these pipes.

The Inside is Craft

The most important part of a pipe is the inside. The most beautifully-shaped pipe will be disappointing if it is not drilled precisely. That is another way of saying that the inside of the pipe requires a high degree of craft. Take your time with this process, and use any guides or jigs you have at your disposal to get it right the first time.

For a pipe to smoke well, the draught hole must intersect with the very bottom of the chamber. If it intersects too high, the tobacco below the intersection won't burn. If it intersects



Steve draws out the pipe on the side of a block of wood (left), carrying the lines to the top and sides of the block. He drills many of his pipes with two mortises (right): a false mortise to conceal the stem/wood junction and a true mortise to accept the tenon. Sometimes it is possible to get more than one pipe out of a block of wood





Steve likes to relax with a pipe he made himself (Photo credit: Keziah Schuler)



A drill press is useful for drilling chambers, mortises and airways (above). Steve uses a Forstner bit for the false mortise and a re-ground spade bit to drill the chamber. Good brad-point bits are best for drilling the airway. It is possible to drill the holes freehand (left) with the help of a square and accurately-drawn sightlines. Some pipes have conical tobacco chambers, which can be drilled with a special tapered drill bit (above right). Steve has used a reamer in a brace to widen a narrow chamber, but a chairmaker's spoon bit should do

too low, the airflow will be too restricted. Mess up the drilling, and your pipe will be worthless, regardless of how nice it looks. Get it right, and you will have a pipe worth smoking.

On the side of your block of wood, draw two lines that intersect at what will be the bottom of the tobacco chamber. The vertical line is the centreline of the chamber, and the horizontal line is the centreline of the draft hole. Your pipe will look better if the lines are not perfectly perpendicular. The angle should be either slightly obtuse (about 95°) or somewhat acute (about 60°-85° degrees). Each of the pipes I'm making has a different bend. The wood's grain can run in any direction relative to the shape of the pipe. But the pipe will be strongest if the grain runs roughly parallel to the draft hole. Otherwise there is short grain at the junction between the shank (or 'stummel') and the bowl, which could break if the pipe is dropped. If the pipe is not mishandled, it can be shaped with the grain in any orientation.

On these pipes, the draught hole will be drilled in three stages. First I drill a wide mortise for the end of the stem to

sit inside of. This mortise need only fit the whole of the stem very loosely. Let's call it the "false mortise." Its purpose is more visual than structural. It creates the impression that the stem is flowing out of the pipe, and it hides what would otherwise be a small gap at the shoulder of the tenon. It is a bit wider than the stem and no more than 3/8in (10mm) deep.

The second hole is drilled in the centre of the first, and it is the true mortise. I am drilling it 5/16in wide (mortises can be anywhere from 7mm to 10mm) and about 1/2in (13mm) deep, keeping it perpendicular to the bottom of the false mortise. Finally, I drill the draught hole itself. I use either a 5/32in or 11/64in (4mm or 5mm) brad-point bit, which tends to drill straighter than a regular twist bit, especially in end-grain. Drill as straight as possible, and control your depth so that the hole will just pierce the chamber wall, which you will bore next.

The typical width of the tobacco chamber is 3/4in (20mm), but some are wider or narrower. To drill the chamber, you can use a wide drill bit, such as a Forstner bit or even an auger bit, to do most of the work. But to get a properly conical bottom to the chamber, you will need a special bit, which you can grind yourself out of an old spade bit. (Or use a spoon bit if you have one.) I recommend boring a smaller pilot hole with a regular twist bit first, which helps the spade bit run true. Otherwise, with no centre spur to guide it, the bit will tend to wander.

Bore slowly as you approach the bottom. Stop as soon as the chamber fully intersects with the draught hole. To ensure that I stop at the right place, I stuff a cotton swab into the draught hole and watch it as I bore the chamber. As soon as I see the end of the swab move, I know I'm done.

Using a drill press

I do all this work at my drill press, to ensure that all the holes line up precisely. But with care and the help of a good square, you can drill these holes freehand with a regular electric drill. Draw sightlines across the block of wood in each direction. Set your square upright next to the block. Go slowly and keep your eyes on your sightlines. If you are unsure of your drilling abilities, practice in some scrap wood first. You may be surprised at how accurately you can drill just by eye. A bit of tape on each drill bit makes an adequate depth stop.

Finally, shape a tenon on the end of the stem to fit the true mortise. If you don't have a lathe (I don't), shaping a round tenon on the end of a stick is a valuable skill to have, whether



When filing the tenon on the end of the stem (left), check frequently to see that the tenon is in line with the rest of the stem. Steve uses a block of wood with a rabbet (rebate) cut into one end to hold the work steady (right). This is an effective way to shape a round tenon on the end of any workpiece, regardless of the size. For best results, use one hand to rotate the workpiece slowly toward you while pushing the file away from you with the other hand



you are making stools, chairs, or pipes. The procedure is the same, whatever the size of the workpiece.

First level the end of the tenon-end with a file or sandpaper. Then use a drill bit the same diameter as your mortise to drill a very shallow hole in the end of the workpiece. This marks the finished diameter of the tenon. Tape off the approximate length of the tenon (about 1/2 in, or 13mm) and use a marking gauge to scribe the shoulder exactly. The tenon should nearly bottom out in the bottom of the mortise. Too much of a gap there will cause the pipe to gurgle when smoked.

Hold the stem in a rabbeted (or 'rebated') block of wood held upright in a vise. Use a file to shape four facets, creating a square tenon. Check regularly to see that your emerging tenon remains parallel to the rest of the stem. Then file off the four corners to make an octagon. Finally, rotate the stem toward you as you push the file forward, bringing the tenon down to a round shape. Test it regularly in your mortise. It should fit in snugly but not loosely. Do not force it, or you will break it off. Leave it a bit fat and finish up in the same manner with some fine sandpaper (400 grit is about right) wrapped around a stiff backer. As you test the tenon in the mortise, you will reveal the high spots that will be sanded down for a perfect fit.

If perchance you over-file the tenon and the fit is too loose, you can build up the walls of the mortise by spreading a thin layer of superglue on the mortise wall and letting it dry.

Some pipe stems are straight, but many pipes have bent stems. To bend your stem, put a pipe cleaner all the way into the stem. (You did remember to buy some pipe cleaners, didn't you? It's important to keep your pipe in good shape by cleaning it out regularly.) Heat a pot of water to boiling, turn off the heat, and soak the stem in the hot water for 2-3 minutes. Acrylic stems will take longer. Remove the stem and bend it with your fingers or against a rounded form of some kind. Hold it there until the stem cools, or run it under cold water to set the bend immediately. If you don't like the results, just reheat and bend it again.

Next Issue discover the art of decorating the outside of a briar pipe. 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).



The shiny spots on the tenon show where it just fits into the mortise (above). This tenon still needs to be smaller up near the shoulder. Steve aims for a tight friction-fit. The stem must be removeable so the pipe can be cleaned periodically. After drilling the block and fitting the stem, Steve uses a saw to cut away as much of the extra wood as possible, leaving a roughly pipe-shaped object (below)



Plane Truths

In her article on toolmakers, *Phoebe Everill* meets navigator-turned-planemaker Terry Gordon



The 1/2in hollow plane (left) being used to make a bead, 1/8in dado plane (above) and a ringed gidgee A55 smoothing plane (below)



As a child Terry Gordon, the founder of toolmakers HNT Gordon, was always making things, playing with tools and observing others. Now he believes that making is hard wired into his being. After completing his school years he began training as an electrician and then spent many years in the Royal Australian Air Force as a navigator. The last overseas posting was to Malaysia, then back in Australia for his final posts in South Australia and then eastern Victoria teaching navigation.

In Malaysia he had the opportunity to use some locally-produced planes made from materials that were readily available. The plane bodies were made from local hardwoods with little (if any) seasoning. Simple steel blades were held in the body with wedges, some with steel inserts in front of the blade, no chip breakers. Terry was intrigued by the process of making them work better, to be used in his own furniture-making for a better result.

The first of his hand planes were the palm smoother and its larger siblings, and with those he started the journey that continues now. Soon came the shoulder plane, and these are the foundation planes with which many makers start their careers. Initially it was for Terry's own furniture-making, so that has always been central to business, listening to makers and developing tools that fit a specific need.

"My primary job is as a planemaker," he told me, "and I've been doing it for over 25 years, but prior to that I was a hobbyist woodworker, and made all my own furniture. In that time, I learnt a lot about what various edge tools can and can't do, and I have been refining that information ever since."

Named after Terry's three children (Heulwen, Nelson and Tamaris) HNT Gordon sold its first plane in 1995. Woodworking shows were important in the development of new tools as he listened to people ask for the same things over and over again, so the trick came to address a gap in the market. The small spokeshave is a perfect example of this. There just wasn't one being made until his found its way into the mix. There is always a desire to improve on an existing design, addressing issues that makers are having and also streamlining the production of the tool. One example of this research and development in the range, is the addition of brass abutments replacing an angle cut into the body to house the wedge firmly. Another example is the brass 'ware' in the sole of the plane in front of the blade so that a fine mouth opening can be filed accurately, and that opening will not then change over time with heavy use.

The business has developed a range of planes using mechanical blade adjusters. "I found when experimenting with an old dado plane that I had been given by my father-in-law,



The HNT Gordon team (left to right): Terry Gordon (planemaking, running the business), Trent Powers (assembling the vice, grinding & preparing the blades, finishing spokeshaves), Zamantha Mira Zento (invoicing, packaging and sending tools), Nelson Gordon (machining on CNC and milling machines, and sorting computer problems), Tamaris Gordon (business marketing and helping to run the business) and Chris Marom (preparing and machining plane bodies including the brass work, ready to finish)

that it was really difficult to set up with any accuracy. To cut a really sweet dado across grain is not an easy thing to do, but we felt if we could get the nicker adjustment right we would have a really sweet tool. You need to remember that for the old timers in the craft, the dado plane was a real workhorse in the shop cutting all the grooves for shelving and dividers in case work. The fact is that any plane that requires a two blade set up (in this case the nicker and the main cutting blade), will not work well with wedges as the holding mechanism. You tap one wedge and you adjust the other with the same action and vice versa, so at least one blade must be mechanically adjusted, if you are going to achieve a good setup."

The three A55 planes (Smoothing, Trying and Jointer) in his range also have mechanical adjusters, and are the direct result of maker demand to have the HNT Gordon style of plane with its higher blade pitch, but with a more traditional Western-style blade setting system. The moving fillister also offers multiple settings when needed, and all must be achieved accurately if the plane as a whole is to work well.

Terry is often asked why block planes, with their low angle, are so good for end-grain. "The low angle BU Plane (formerly all called block planes) was designed by the old timers to plane end-grain butcher blocks because it was the best geometry for doing that job efficiently, hence the name. You

can test this yourself by taking a chisel to pare some end-grain at 90°. There is no gap between the wood and the chisel blade [behind the edge] yet the blade edge cuts freely with the end-grain leaving a nice surface. If you do the same on long-grain the chisel just splits the wood erratically, leaving a very poor surface. To take a nice shaving on long-grain and leave a nice finish, you must have some clearance under the blade. So with a low-angle plane with say 12° of clearance it will cut long-grain and it will also cut end-grain nicely like the chisel."

When it comes to optimum blade pitch Terry recognises that it's the topic that has caused so much debate in the woodworking world. "From my experience, and from tests over the years, it is generally accepted that a plane needs 37°-45° for softwoods or straight grain; 45°-55° for harder wood with some figure; 60°+ for hard and highly-figured woods and 90° for the most difficult. Some mitigators for reducing tear-out are quality of sharpening, a fine mouth, thick blade, feed rate and how well the blade is held in the plane."

Reversible blades

The HNT reversible blade system is unusual. A plane can be transformed into a scraper plane by simply reversing the blade. Terry isn't sure if this has been done in the past. "I literally put a blade into one of my planes in the reverse position and was



A customer using a Curved Sole Spokeshave (left) in some Tasmanian Myrtle, and the HNT Gordon Pattern Makers Vice (above)

surprised to find that it still cut!" So he experimented to learn why this worked. Terry knew he had a sharp blade and realised with a 55°-60° blade pitch he had inadvertently created a cabinet scraper set up with the blade presented to the work at around 90°. It worked particularly well on harder woods just as we expect of a cabinet scraper.

Terry says that it's a safe way to finish very difficult hard woods, and has been well received by makers who have struggled with the heat build-up in a cabinet scraper caused by friction, and also the difficulty that many find getting and keeping a good edge.

Two types of steel are available for HNT planes and shaves. High carbon tool steel was readily available from the start, so was an obvious choice, but high speed steel (HSS) includes carbides that make it a better choice for very hard or abrasive timbers. "The HSS will hold an edge longer because of the carbides," Terry explains, "but the downside is that it is a little bit harder to sharpen. This option has improved planes being used in scraper mode as the heat generated doesn't dull the edge as quickly as the tool steel."

His planes are also available in a variety of timber species. "First and most importantly the timber must be stable. Not all woods are stable just because they are hard. It needs to be a hard, dense timber that wears well and also gives the plane some kind of 'authority'. You can back that up with brass but you especially need that authority with the smoothing planes. I don't like super-heavy planes, nor a lightweight one, and that's what I mean about the authority of the plane."

Wooden Tools

There is definitely a market for planes and spokeshaves made from speciality timbers, ebony being a typical example. Some of Terry's customers are attracted by a specific type of timber and may wish to collect tools made from that species. Initially the speciality timber option showcased the range by making hand-made tools in really nice timbers. Some 30% of output was exotic wood, but is now probably no more than 10%.

Some wood is harvested by HNT. Terry likes to look at a tree to check the bark, to walk around it, and to hit it with an axe to see if it's hollow. "We don't bring back much rubbish these days. When I first started selecting timber we did. Then we had to source the timber ourselves because no one else was doing it properly!" Terry goes out annually, to western New South Wales and Queensland to find suitable trees. He is mainly interested in gidgee (*Acacia cambagei*), and perhaps some mulga (*Acacia aneura*) and bull oak (*Allocasuarina luehmannii*) will be collected on the run. It's like a holiday for him to be out of the shop, even though the work is really hard.

HNT developed their own kiln to dry the timber. It takes roughly seven weeks to do a load. It is a long and slow process which is incredibly important to the stability of the wood. Without getting the kiln process sorted Terry wouldn't be where he is today. Air drying is fraught with danger for the business of planemaking, because there is a mix of timber and brass, so the wood needs the ultimate, consistent stability.

Beside the kiln is a room for seasoning the wood, set at a constant relative humidity (around 40%RH). The wood is racked in there straight from the kiln, then after each process of the making (drilling, cutting etc...), the blanks are returned, even after the fitting of brass components. The process takes up to 12 months for most planes. If you take any shortcuts in this part of planemaking then the price will be paid when the end product fails. Terry Gordon says: "If you understand your materials and use them correctly, you become the master of them. It then opens doors for your designs and manufacture."

He is never afraid to experiment with a design or process. "We will make something up to prove if 'it' can be done, yes or no? I consider it time well spent, even if it takes six month for an answer, before a product goes out into the market. That's how you get repeat sales."

Workbench hardware

The development of HNT Gordon workbench hardware was born out of Terry's need to have a superior 'non-racking,



A Dado Plane (left) and an A55 Plane (above) smoothing some black and white ebony

variable height vice on his own bench. He didn't want to put up with an inferior tool. Day in, day out Terry spent time re-adjusting the old patternmaker's vice to keep the workpiece in the correct position. "When you are fitting up a plane it will probably go in and out of the vice 15 times. When you have to reset it every second time then there is a lot of time being wasted." A new patternmaker's vice saved Terry about half an hour every day. Eventually that cast iron vice died and Terry's son Nelson, who was doing a fitting and turning apprenticeship at trade school (TAFE), discussed the possibility of using more modern materials to replace the bushes. "We worked out the spacing between the bushes to remove racking. Much experimentation then followed and prototyping to come up with our first patternmakers' vice. We were surprised that the bushes just didn't wear at all in the first four years."

Testing continued for another three or four years, with further family input from Nelson's cousin Julian devising some ideas that led to further modifications. Then there were another two or three years testing before manufacture. "In fact we worked out that the one on my own bench has done in the range of 5000 hours work, with only a very recent service needed, and don't forget that we use it for filing brass and steel and desert hardwoods."

The tail vice was born out of necessity when the company starting making dado planes, with the design developed for use in HNT's workshop alongside development of the patternmaker's vice. "All our vices have similar style components working with a push/pull in a concentric way that required an enormous amount of workplace testing. We learnt so much from the tail vice evolution, that has aided the making of the patternmakers' and front vices. It became really obvious that if we wanted to make these vices commercially viable then we had to get a CNC mill to produce components quickly and accurately as a high level of accuracy is built into the design of this vice to give it a lifetime of work. We are now in the process of also buying a CNC lathe because we need to

improve that efficiency even further so that parts do not have to be produced off-site."

Visit the HNT Gordon HQ and you'll discover this is a family business. There are Nelson and cousin Julian on the making side. "My daughter Tamaris has stepped into an admin role having studied business and marketing. She has a particular interest and passion for the marketing side. Without this push in marketing we wouldn't be where we are today."

Of course, one of the most common problems for designer/makers of tools is that with so much time being spent in the shop, marketing is often ignored and not given the professional expertise and time it should. "Tamaris has changed the whole game or playing field for us," Terry comments. His decision to work exclusively with a couple of stockists has provided their products exposure they'd never have reached on their own. "Toolmaking is a difficult vocation," he relates, "and I admire those people who are prepared to make the tough, often expensive decision to keep the standard high, like Thomas Lie-Nielsen and Colen Clenton, and not take any shortcuts."

Terry agrees that there is currently an interest in hand-tools, as is shown by the growth of his business. "Making is in some people's DNA. There has been an upturn in craft-based hobbies since the pandemic began. Woodwork has seen a lot of growth, with information and tools readily available making it much easier to get started."

The bench hardware is innovative, born and tested for real workshop conditions. And commitments to a science to make planes work better, to the choice of the best timber and brass, and to the use of modern steel technology explain the success of a toolmaker who started on his own in a small workshop and now runs a brand of distinctive tools admired worldwide.

To learn more visit hntgordon.com.au. Stockists include Workshop Heaven in UK (bench vices and dogs) and Heartwood Tools in USA (full range except moulding planes).

The Glue Way Forward

Having failed to shape chair legs twice, *Nick Gibbs* chooses lamination as the next experiment

For some reason, when it came to shaping the back legs for my William Morris Sussex chairs, it never crossed my mind to use laminations rather than the reinforced mitre that failed in QM05. "I applaud you for being willing to experiment and present your results," Bob Simmons from Sun City West, Arizona, USA wrote to me. "A failure is not a failure when there is learning. You selected a round mortise and tenon to reinforce the end-grain mitre. I wonder if a properly-orientated, full width, spline with cross pegs would have been a better choice?" Thanks for your support, Bob, but I just don't have the tools, nor the time, nor the skills to produce the joint you suggest, nor the facilities for steam bending. I had forgotten the first chair I made, back at school, was of Modernist style, the components shaped by laminating thin strips of mahogany.

Actually, the inspiration to bend the back legs of my Sussex chairs would never have come to mind had I not chanced upon strips of FSC pine in B&Q only 6mm thick, from 10-48mm wide. I had never expected to find anything so useful and so cheap in a DIY 'warehouse'. Usually planed-all-round timber (PAR), even softwood, is



The latest Sussex chair was made at our new John Nash base on the Isle of Wight (above). We recently sent a scale version of one chair to a reader (above right) who has also made a Nakashima bench earlier in this issue



fascinating presentation as a portfolio of his work. Laminating is a key skill and feature of the Sussex-based company, whose Bespoke Pieces gallery is well worth a visit. From my perspective, the Freeform Collection in the Design Style is the most impressive. Ed also told the group of about 30 members on the SFWW Zoom event how his Murano Collection comprises remarkable laminated concentric shapes, inspired by the Venetian island of that name. "Venetian

expensive but these strips are relatively affordable, so a new-old approach suddenly dawned.

Coincidentally, shaping furniture by lamination was raised in a recent talk given by the highly talented Edward Johnson, whose company produces the most remarkable furniture. I only saw his work because I had been invited to plug *Quercus* to members of the Southern Fellowship of Woodworkers (SFWW) for their monthly Zoom meeting. Ed gave a

master craftsmen have been producing glassware for centuries, by floating layers of different coloured glass through one another to produce exquisite patterns," Ed's team relate on the edwardjohnsonstudio.co.uk website.

It was a relief to learn that the fine furniture makers have come to use polyurethane adhesive for most of their laminating. This is exactly the conclusion I have come to for shaping chair legs and other laminations. In fact, it was John Brown who told me to use PU Balcotan for chairmaking. John favoured the 20-minute version of Balcotan not only for its strength, but because any dried excess can easily be chipped off waxed wood, though I have found it sometimes leaves a pale 'ghost' mark. Eventually Balcotan disappeared from the UK, but I have subsequently found Everbuild Lumberjack Wood Adhesive, which has proved to be just as good, and may even be the same product under a different name.

The characteristic all PUs share is that you touch it without gloves at your peril. The stickiness just cannot be removed by any solvent, and stays on your fingers for ages. The solution is to use latex gloves, but watch out for glue that sticks to the clamps, and release them with care as squeeze-out takes longer to dry on metal than on wood. I have recently made a new former with slightly steeper rake, and we have a new base on the Isle of Wight and it will be fascinating to see how things progress.



Using strips of 6mm pine from B&Q has meant the back legs can be shaped by laminating (left). The former has recently been adapted to make the curve tighter, particularly below the seat rails (above)



IMAGES COURTESY EDWARD JOHNSON FINE FURNITURE STUDIO

Edward Johnson's coffee table (above and right) and chaise long (below) (above and right) and are made from walnut, and found in the Freeform Collection at edwardjohnsonstudio.co.uk



We came across Edward Johnson's fine furniture during a Southern Fellowship of Woodworkers (SFWW) Zoom meeting. Soon the group will be holding their monthly meetings at Cross Barn in Odiham, Hampshire. You can find details at sfww.org.uk



Letters

CARTOON: OMNI GATES



Wheely Good Coat Hooks

Dear Quercus-friends! I would just like to add a little thought to your article about Slöjd Coat Hooks in QM04. In Sweden we are obliged to use winter wheels on our cars during some winter months. Some even like to have studs on their wheels. During the summer we need to accommodate these winter wheels in one way or another, and vice versa with summer wheels during winter. I have made four sturdy hooks for this purpose to hang the wheels on my garage wall.

Bernt Rudholm, Sweden

Four Jar Shelves

Thanks for Quercus 05, and in particular for the article on the kitchen shelf. It was a great read and I like how Robin weaves an entertaining story with directions on how to build the project and then moves into the discussion on saws. On the surface the Four Jar Shelf project is simple, but the hand-cut joinery was a good challenge. I built my version out of cherry and finished with shellac and wax.

Peter Marshall

Roman Workbench

Thank you for the lovely magazine. Its mixture of philosophy and woodworking is a thrill. Also the presence of all my key authors is a joy. You just need to rejuvenate Mr Wearing to fill the bill



Peter Marshall has made his version of Robin Gates' Jam Jar Shelf from QM05, while Bernt Rudholm was inspired to whittle two hooks to hang wheels (right), and a reader whose details were lost in last issue's theft is making another of Robin's popular straight-legged sawhorses



totally. Anyway, I am building a Roman workbench in a mix of Mr Schwarz and Mr Gates out of recycled skip-timber (right); door liners to be precise. Next step after the legs is a skip stool.

Mark Gatehouse



Dan Wallace, USA

Pony Shave

Not wanting to waste space, *Dan Wallace* makes himself a bench-top device that some readers may recognise

Lately, as more and more of my woodcraft has involved shaping parts for furniture or cabinetry pieces, I have found myself wanting a better tool than a bench vice for holding material. My first thought was 'shave horse', but I wasn't willing to sacrifice floor space for kit I wasn't likely to use on a regular basis.

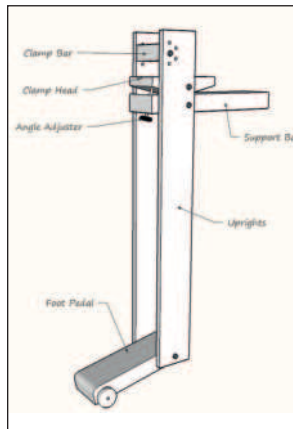
The results of an Internet search for 'bench-top shave horse' surprised me with their brevity, with so few options, but they let me know I was after a thing called a 'shave pony'. I looked further into two different iterations for a shave pony and one caught my eye because of its adjustability and convenience, so I adapted this design to suit my needs.

The adjustability built into this design allows the user to accommodate the quickly changing dimension as waste is removed without changing the body/leg geometry. Very little foot pressure is required to firmly hold material while shaping. Additionally, it can be used while seated or standing, a feature I found comes in quite handy when fitting a part for a piece setting on bench.

When not in use, the compact design facilitates easy storage. Simply unclamp it from the bench and lean it in a corner to free up valuable shop real estate.

The length of the uprights depends on where the shave pony will be mounted. For now, mount the support bar on your bench, allowing it to overhang the edge. Measure from the bottom of the support bar to the floor and subtract $3\frac{1}{4}$ in, then add $10\frac{1}{2}$ in to that measurement to determine the total length of the uprights. One of the plans was by Renaissance Woodworker (Shannon Rogers), the other Gunpowder Woodworking (Mark Hochstein). While compact in the size, this variable-position shave pony is loaded with adjustability features, such as the option to use it while sitting or standing. This feature is achieved by cutting the bottom ends of the clamp head by 13° and angling the support bar's carriage bolt adjuster at 13° . To drill this angle in the support, after cutting the angle on the clamping head, turn it over and use it to hold the support bar at 13° .

*Dan Wallace, Sea Smoke Design
New Hampshire, USA*



The jaws of the shaving pony can be adjusted to vary the angle. Follow Dan on Instagram @seasmokedesign for more details



Green Shoots of Wooding

Robin Gates is smitten by a spokeshave, makes a wooden tray and buys a folding saw

The day that spring arrives in an English shed is one of the pleasures of woodwork, as the green shoots of the craft make their presence felt. Opening the door, a cocktail of timber and turpentine brought to life by warming air is joined by a waft of early blossom, and an errant queen bee, no doubt searching for a nesting site. I gently shoo the lumbering flyer to safety. Some impressive spiders lurk in the corners of our roof, and I suspect the suspended ceiling of silk they've constructed, reputedly tougher than steel, is helping tie this old box together. I find a shallow lake in the middle of the floor, reminding me that somewhere in our western wall, where the prevailing Welsh wind blows, rain filters through the channels of the shiplap cladding. Find the leak? I may as well search for a needle in a haystack. Besides, an intriguing vintage tool lies temptingly on the bench.

Hall's modern spokeshave

It's a piece of tool-making history, Thomas Hall's 'Modern' spokeshave, and it was kindly sent to us from Ireland by furniture-maker Phil Gaynor (@an_irish_woodworkers_diary) in a delightful walnut box made for the purpose.

Hall's workshop was in the Sykes Works, Sheffield, an impressive three-storey brick building standing on Milton Street; you can navigate your way to it through 'street view' on Google Maps. The invention was granted a patent in 1923, although this example bears the provisional patent and must be one of the first Hall produced. His inventive step concerned the flush-mounted captive screws used for fine adjustment of a threaded iron. Compared with a Victorian shave in our collection, in which the iron has threaded posts raised or lowered by brass turnbuttons, Hall's system is more precise and secure. Well you know how addictive a good spokeshave can become, and this one cuts like a dream, churning out oak shavings like curls of pure Irish butter. Inside 10 minutes I have generated enough shavings to make a convincing Dolly Parton wig.

Wagatabon biscuits

That said, I have made something



Shavings curl like butter from the 'Modern' spokeshave (above). Carving characteristic grooves for a Wagatabon with a 3/4in gouge (below)

more substantial than shavings: a small wooden tray to catch the biscuit crumbs at coffee time. I hesitate to call it a Wagatabon, even if it was the article on this distinctively grooved item of flatware by Dominic Campbell (@dominicscampbell) in QM03 which inspired it. The original Wagatabon was made in Wagatani village, Japan using



the best of cleaved green chestnut which would otherwise be used to make roofing shingles, and ultra-sharp Japanese tools.

My effort was chopped from a piece of B&Q's flat-sawn 'general purpose whitewood' with a sturdy Western firmer chisel and a stubby gouge. All went well until I blew out a chunk of the end wall with a careless blow of the mallet, but that morphed into a recess for the thumb which actually works nicely. 'A happy accident', is how Dom generously described it, and I feel encouraged to make another.

Pruning saw advice

When I posted a video of a coping saw lopping side branches from our retired Christmas tree (@made_in_the_marches) I mentioned dithering over the purchase of a folding greenwood saw, and the woodworkers of Instagram responded with good advice. Paul (@paulrgoulden) suggested the Silky Pocketboy, and retired teacher Norb Kelly (@lanesborowdwr) agreed. "Silky is the best in my mind," he wrote, "I have three different sizes. Use them all the time." Maker of spoons and wooden buttons Graeme Brown (@graembrownwoodcarving) favoured the Samurai pull saw: "Had it for years and it's very effective. Not very pricey either." Guided by Oregon spooncarver Bethany Grebel (@wanderingbee. woodshop) and stave basket maker John Williamson (@johnwilliamsondartmoor), however, I bought the Swedish Bahco Laplander. Although it arrived with a wobbly blade, soon fixed by tightening the pivot screw, this saw is well made and hefts nicely for the job. The teeth cut hungrily in both directions, and the blade is locked safely by a spring-mounted button. I had considered removing the leather loop but was soon glad to be wearing it on my wrist. Sawing into a heap of brash to liberate a good stick of hazel I accidentally let go of the saw, and but for the loop would have lost it among the branches. The Laplander is both light and sleek enough to carry in a jacket pocket, ready for spontaneous action. I like it! Special thanks to Jack (@dark_peak_outdoors) for alerting me to the good deal on a Bahco saw-and-knife set.



The blade of a Hall's 'Modern' spokeshave is adjusted by flush-mounted captive screws (above). Waste for a useful wood tray (below) is cleared with a firmer chisel (left)



Tightening the screw (above) on the Bahco Laplander eliminates wobble for cutting hazel (below right) and 3in alder fast and easily





*Robin Gates heads our
Tool Storage feature
with a sliding lid box
made entirely by hand*