SNAINTON WOODTURNING NEWSLETTER

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Masterly Spindle Turning

– including routing on the lathe and turning a walking cane

by Richard Findley RPT

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>> See p.2 Col. 1

Snainton Woodturning Club

Meeting at
Snainton Woodworking Supplies
on Thursday
2 February 2012

Snainton Woodturning Club

Meets at 1930 hr at Snainton Woodworking Supplies, Barkers Lane, Snainton, North Yorkshire YO13 9BG, on the *first* Thursday of each Month

--- ***Next Meeting*** ---

1 March 2012
Mick Hanbury – New Decorative Theme

---

5 April 2012
Andrew Hall – Corinthian Helmet

---

3 May 2012
Andy Lodge – Something Different

---

7 June 2012
Sue Harker – Wall Art

Club Demonstration Meeting Diary continues on p.8. col. 2.

* *Minimum* price for hard copies is 50 pence. ***Donations*** to **Marie Curie Cancer Care and Yorkshire Air Ambulance. The January collection for Yorkshire Air Ambulance raised £18.**

Background

Richard Findley's workshop is in Wigston, Leicestershire. He set up his own business in June 2010, after working with his father in the family's joinery business.

Richard taught himself to turn during lunch breaks, and he sold a few turned pieces. Later, he had to make the decision to continue in the family business or set up as a wood turner on his own.

Now, having made the latter choice, Richard produces a wide range of items entirely on commission (a stair baluster & walking cane are shown here) rather than having to build up and maintain a stock of turned materials.

He contributes articles to *Woodturning* magazine, in which he currently writes a very interesting 'Diary of a professional wood turner'. He also offers demonstrations, tuition and a range of wood turning supplies.

Richard performed a masterly demonstration of spindle turning – *with a twist*. First, he showed us how he made a table leg. Next, he demonstrated his set-up for routing directly on the lathe to create flutes along spindle-work, eg on balusters or table legs. Finally, Richard showed us how he turned a walking cane (not as simple as it sounds!).

Table Leg

Joiners often use American whitewood (also called tulipwood, *Liriodendron tulipifera*), which is a medium density wood and has a fine, even, straight-grain internal structure with no alternating hard and soft growth-bands like pine.

Material: The dimensions of the wood will be those of the final leg, with the square top of the leg match-

Turning Tips

- **The skew chisel:** There are various pieces of advice in books and DVDs about how to use the skew. While noting others' recommendations, it is often better to practice and use a particular technique that best suits you. Let the wood come onto the skew blade, and don't push the tool into the work. The wood vibrates if the tool is pushed in too hard.

◇ It is often necessary to raise the rest so that the skew chisel cuts near the top of the rotating spindle so that the wood is falling onto the blade and the force on the chisel is mostly down the length of the chisel to be absorbed by the tool rest and the turner's hand.

◇ Don't push the skew into the wood when cutting vertically into the wood: hold the skew firmly and at right angles against the tool rest, put the tip of the toe near the wood, and finally, gently lift the handle until the skew tip meets the wood, and continue the cut depth merely by lifting the handle.

◇ When using a skew to cut vertically or a vee into the wood, make sure the bevel of the skew rubs on one side of the wood. Thus for a straight cut into the wood, it is necessary to angle the skew slightly to bevel rub so that it will produce a vertical cut into the wood.

◇ Use only the toe of the chisel when turning a bead or it can 'catch'. Start at the top of the central bead-mark with the skew nearly horizontal and with the tip bevel rubbing to the right of the central bead-mark. Roll the skew gently as the bead is formed, until the skew has rotated through 90° until it is almost vertical, but still with the toe bevel rubbing at the foot of the bead. Repeat on the other side of the bead. The central pencil mark can be sanded out later.

◇ The skew can be used to plane across the length of a spindle. Hold the skew blade horizontal with a hand on the tool rest, close to the tools' tip, and bevel rub the wood with the skew blade. Ensure that *the only part of the blade that comes into contact with the wood is that quarter of the blade nearest to the heel of the skew*. If planing with the middle or top half of the skew blade towards the toe, the wood tends to pull the tip of the skew into the wood and the result is a serious spiral 'catch'.

- **Beads:** Only the centres of the beads need be marked, and if the spindle diameter at this point is correct, the bead will be formed on either side of this line.

- **Coves:** Mark the centre and outer limits of the cove. Use a 5 mm ($^{7}/_{32}$ in) beading/parting tool and with a planing action, applying a slight wobble to the tool, clear a 10 mm section of wood from the middle of the cove and proceed to just above the desired final depth. With a swept-back spindle gouge, shape each side of the cove down to the centre. Bevel rub and pivot the tip into the wood by swaying the body to produce a smooth, even curve on either side of the cove. As the cove is formed, the gap between tip of the gouge and the tool rest gets wider: to control the gouge with its tip overhanging 20 mm ($^{25}/_{32}$ in) from the tool rest requires a balancing handle-hold of 150 to 200 mm (6 to 8 in).

- **A tapered spindle:** With a spindle roughing gouge, move down the work from the top towards the bottom of the desired taper. As the shaping progresses, lift the gouge handle slowly as the cut down the length is made to form the taper. Finish by lifting the tool rest, then use a skew chisel in planning mode, as described above. To accommodate the taper, lift the handle of the skew as progress is made down the taper.

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- **Vernier callipers:** Before using a new set of Vernier callipers, sand the sharp edges of the tips of the two jaws so that they will not catch on the wood. Do not alter the jaws in such a way that the callipers are no longer accurate!

- **Gouge ridges** are removed by speeding up the lathe and/or taking slower gouge cuts.

- **Sanding:** Sand spindles with the lathe rotating then stop the lathe and sand with the grain. *Wipe the piece down between grits as a piece of grit shed by the previous sanding can ruin the finish – whether it is a spindle or a bowl.* Finish with a fine Nyweb pad.

ing the final dimensions where the legs are to be joined to the tabletop or side braces.

Template: When preparing a batch of legs, Richard draws an accurate

copy template, which is a half section of the actual leg, on which measurements are written. It is important that all the legs are produced with the main features at exactly the same vertical height.

Slight variations of a millimetre or so are acceptable in the horizontal diameters or dimensions of each leg, though, as they will be separated from each other and are thus not easy to compare.

Tools: Richard used mainly a spindle roughing gouge, a square-profile (10 mm, $^3/_8$ in) beading/parting tool, a skew chisel and spindle gouge with a swept-back grind.

Mounting: Mark the centre of both ends of the wood, and then mount between a four-pronged drive in the headstock and a live rotating ring-centre in the tailstock.

Marking: Measure, or use a template, to mark the position of the main features of the table leg top. Don't be tempted to mark the position of every fillet or shape, as too many lines leads to confusion as to which mark relates to which feature! Mark the lower end of the square leg-top and the centre of the top bead.

Right-angle jig: Richard has found that even using a sets-quare, it is difficult to go round the four sides of a square piece of wood and join up the forth line with that on the first side. Richard's jig comprises two pieces of hardwood about 10 mm (4 in) long, screwed together to yield a perfect right angle, which makes the marking perfectly accurate.

Starting: position the rest at an appropriate height and distance from the square of wood. With the parting tool, cut in gently about 2 mm ($^1/_{16}$ in) at the first mark between the square leg-top and the first bead. Stop the lathe and check that the cut is centred on the line and that each cut on the four corners is to the same depth; adjust, if necessary.

Rough down the whole leg to the maximum diameter of the largest bead. Use the roughing gouge wings to get into the still square shoulders of the square leg-top. The roundness of the area roughed down may be checked by trailing the finger, *but only on the opposite side of the lathe*.

Shaping: Mark out the positions of the main features of the leg, beads, coves and fillets, including the extent of the bevel on the lower part of the

square leg-top, preferably using a template.

Upper feature: Shape the bevel on the lower part of the square leg-top with a skew or beading/parting tool. Then form the top bead with a skew chisel (*see* Turning Tips), as a spindle

gouge is too wide to make a sharp vee between the bead and the bevel of the square top of the leg. Start on the top side of the bead, then the lower side, to a depth just below the fillet that leads into the cove below it (*see* Turning Tips). Form the cove and tidy up the fillet.

Tapered central part: With the beading/parting tool, cut down to desired diameter of the leg, just above the lower cove. Then taper the central part of the leg down to this diameter, as described in Turning Tips.

Lower feature: With the beading/parting tool, cut down to the desired diameter of the cove, bead, fillet and the half-cove at the leg-end. With the spindle gouge, shape the cove, bead, fillet and half-cove at the leg-end.

Sanding: The wood is not too hard, so it needs sanding only with 180-grit

Ron Rogers

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abrasive. Use a flexible paper and keep the edge details crisp.

Routing on the lathe

Routing Jig

Richard's jig comprised:

a) An MDF circular board, with 12 accurately spaced holes bored round the circumference along the radius, was held in the chuck jaws with a four-pronged drive protruding from the centre;

b) A block of wood, on which is screwed a small door-bolt at a height that will allow it to be pushed into the indexing holes on the MDF circle in the chuck jaws. This bolt is mounted on a dowel post that fits into the tool rest banjo (*see left, above*; alternatively, the lathe's built-in indexing facility can be used);

c) A flat MDF board with three bars screwed underneath to fit on either side and between the lathe bars (*above*), and which is clamped on both sides of the lathe bars (*below*);

d) Two bits of wood screwed together at right-angles, with a hole drilled through one with a diameter to accommodate the router's casing. Cut vertically

across the hole is a saw-line about 2 to 3 mm ($^1/_{16}$ to $^1/_8$ in) wide. A bolt in a hole in the top of the board and across the slit enables it to be pulled together with nuts so that the hole grips the router case firmly;

e) The flutes to be cut in the spindle are made using an appropriate router cutter, eg a round-bottomed straight, or a pointed round-over cutter. A

ring of Bakelite-type material (eg Tufnel, *left, above*) fits over the cutter and acts as a spacer to control the depth of the cutter-tip into the wood. (Boxwood or *lignum vitae* may be used, but a wooden ring-spacer heats up and can ignite (*right, above*).)

Routing Flutes

i) Make a note of the chuck jaw number at the first index position, and mark this on the face of the wood spindle.

ii) When a group of spindles are supplied to a joiner to install in a staircase this allows each spindle to be mounted in the same orientation.

iii) For operator safety, switch off the lathe. Then make sure the router is switched off ***before*** it is plugged in to the power.

iv) Richard used a variable speed router that was removed from the routing frame and then mounted in the jig. A lower than maximum speed makes less noise. Make a test cut on some scrap wood to ensure that the cutter and spacer yield a flute of the appropriate depth.

v) To avoid burns and uneven shapes at the ends of the flutes, start routing away from the ends of the flute, then route gently in one direction to one end then to the other end and back, making about four passes per flute. Reverse cuts help to clean

up any wood fibres left by the first cut. Listen to the sound of the router and cut gently, not fiercely. Should the flute continue off the end of the spindle surface, eg to end in a cove, it is less important to start routing away from the ends of the flute.

vi) Make a roll of sandpaper and carefully sand each flute, taking care not to round the top edges of the recess.

vii) Richard usually sends out his work without any finish. Where requested, the wood may be stained, and/or finished with a spray lacquer.

Walking Cane

Richard has made over 900 walking sticks: he produces the canes and is normally supplied with tops that are screwed on.

Making his first one took 90 minutes, so he has developed techniques that allow each to be made in 15 min.

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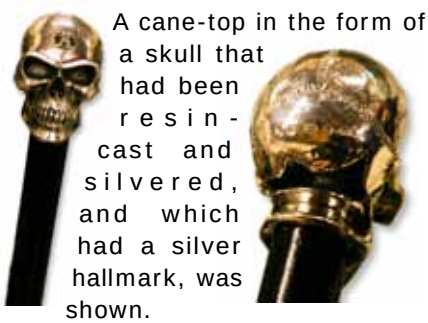


A cane-top in the form of a skull that had been resin-cast and silvered, and which had a silver hallmark, was shown.

Materials: Richard uses steamed beech 32 mm² by 850 mm (1 ¼ in² x 2 ft 10 in), obtainable from most timber merchants, which is dry and a pinkey-brown colour that is ready to use. Wood with pronounced grain or an 'interesting' wood fights the gouge and is more difficult to turn; straight-grain woods are suitable.

Preparation: The centre of each end-face was marked, drawing a cross between each of the corners. A Jacobs chuck is mounted in the Morse taper in the headstock and it is seated firmly by tapping gently with a 680 g (24 oz) dead-blow rubber mallet. A drill bit, of a diameter into which the screw-chuck and head will be screwed, is mounted in the Jacobs chuck jaws.

Richard switched on the lathe and held each end of the spindle in a hand, with one end held near the tailstock and the centre of the other face pressed onto the drill bit, until a suitable depth of hole had been drilled (*see below*).

This was sufficiently located in the centre so that the top would screw near-vertically onto the top of the cane.

Another hole was drilled in the other end of the spindle. These holes allow the finished cane to be screwed to a baseboard for spraying and colouring.

A home-made screw chuck: A coach screw 6 x 50 mm (¼ x 2 in) in the centre of a piece of wood is held in a Jacobs chuck and the wood is turned to round to fit into chuck jaws, which centres the screw (*left*). The wood is mounted in the chuck

jaws and a 25 mm (one inch) square of wood is stuck to the centre of the round (*above*). The square is turned to round to a diameter of 22 mm, which is the top diameter of the cane.

Tailstock: A rotating ring-centre, with the tip having the same diam-

eter as the inside of the bottom of the ferrule, is mounted in the tailstock.

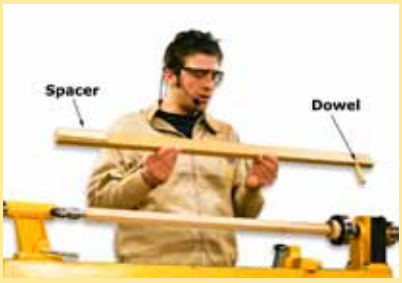
Preparation: Mount the spindle between the screw chuck and rotating ring-centre, but do not tighten the tailstock too tight or the centre of the spindle will bow. Using a long tool rest, perhaps with a 'steady' in the middle, is tedious as each has to be moved to cover the whole length of the cane. This can make it difficult to achieve a uniformly tapered finish.

Long tool-rest jig

1. A long piece of hardwood, 50 x 25 mm (2 x 1 in) in section, and the length of the lathe bed is used.

2. A dowel, of dimensions to fit into the tool-rest banjo, is fitted into the narrow side of the bar about 100 to 150 mm (4 to 6 in) from one end.

3. A rectangle of wood as a spacer is attached to the wider face of the long bar at the other end from the dowel.



4. The top of the long bar is planed smooth and angled to approximately the same as the top of a conventional tool rest.

5. The dowel is inserted into the tool-rest banjo and the other end is G-clamped to the tailstock, so that there is a uniform gap between the rest-jig and the spindle (*see below*).

6. To minimise play in the middle of the long rest, blocks of wood (*see above*) are placed on the lathe bed to support the bar and thus eliminate any flexing.

Ferrule end: Use the beading/parting tool and, with a planning cut at the tailstock end of the spindle, reduce the diameter of the spindle. The tool is 10 mm ($^3/_8$ in) wide, and the ferrule is just 22 mm ($^7/_8$ in) deep, so the ferrule recess length is two widths 'plus a little bit' (ie 2 mm).

Cut down at the top of the ferrule recess to the wider top-diameter of the ferrule, then taper the end of the stick to the diameter of the end of the rotating ring-centre, which is the same as the inside foot of the ferrule.

The ferrule does not have to fit too tightly, as it is normally held by a side-punch on the metal and it is also glued with epoxy resin. If too loose, use a skew to cut a vee, which raises the fibres at the edges of the cut, or cut in at an angle to lift the wood above the cut. The diameter of the

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stick immediately above the ferrule is reduced to 18 mm (¾ in), which is the final diameter of the end of the cane.

Body of the cane: With the diameters at the two ends of the cane defined – 22 and 18 mm ($^{7}/_{8}$ and $^{23}/_{32}$ in) – the spindle has now to be turned down to a round taper. Start with the lathe speed slow and increase it slowly. Flexing of the wood is dependent on the wood and the lathe, but 700 to 900 rpm is usually sufficient to rough down and about 1,200 rpm to finish.

Once the corners have been removed, support the rotating spindle with the fingers of the free hand, with the thumb pressing the gouge down onto the rest, and work along the spindle. Roll the gouge over to get right up to the headstock end to reduce it to 22 mm.

When round, the tool rest is set slightly higher than usual. Keep arms to the sides, position feet (*see white outlines round legs, above*) so that the whole spindle can be reached by leaning the body forward then back without moving the feet. Use a bevel-rubbing cut and keep the spindle stable with the fingers of the free hand. Also use the left arm pressed against the far side of the rotating wood, if necessary.

The taper is only 4 mm ($^{5}/_{32}$ in) over 850 mm (34 in) so the cane will look satisfactory if the top half to two-thirds is parallel, and only the lower portion is tapered towards the tip.

However, take care, as it is easy to end up with a bulge in the top or middle. Although, technically, one should work downhill towards the tailstock, it is all right to work the wood in both directions. However, if the wood has a difficult grain, turn only down the slope.

Surface finishing: The skew chisel can be used at either end of the spindle, but the flex of the wood in the centre is too great and there is a greater risk of a catch. Richard prefers to finish the piece with a wide (150 mm or 6 in) and long (600 mm

or 2 ft) strip of 80-grit sandpaper (*above*). This is used to sand at an angle, with the lathe speed slower to minimise heating. (Richard uses one strip for about 50 canes.)

Smooth finally with a smaller piece of 80-grit paper, and with the lathe stationery, working with the grain. Go back to the tools, if necessary, or proceed through the grits, 120, 180 to 240 or 320 grit, with the lathe rotating, then stationery to sand with the grain. Wipe the piece down to remove any grit shed by the previous sanding. Finish with a fine Nyweb pad, and it is ready for spraying.

Finishing: Screw the canes onto a board and spray with a water-based ebony lacquer, or stain and use a clear lacquer. De-nib with 600 grit Nyweb and re-spray. Finally, screw on the top and fix the ferrule (*above*).

Display Table

The following items were placed on a display table for members to view during breaks in the demonstration:

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The items above and beside this text were displayed, but they were not labelled and their authors are unfortunately not identified.

Items whose attribution is known are Andrew Morby-Smith's natural edged ash bowl, David Lowe's pierced ornamental bowl with domed lid and finial, and a magnificently huge (about 600 mm, 24 in diameter) monkey puzzle bowl made by John Whiteley (*below*):

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David Lowe was also responsible for the wavy-rimmed bowl with three sea-shell feet (*below*):

Tony Langthorne brought along his own design of vacuum chuck, on which the ball on the left-hand chuck was turned (*below*):

Members' Gallery

A group of woodturners, who have bought lathes from Snainton Woodturning Supplies, have been invited by Rob Thompson to attend at Snainton on Wednesday evenings for two hours to buy wood or new equipment and to use the lathes.

Instruction is provided for beginners, and more experienced turners help out, where necessary. It is at these Wednesday evening classes that members bring along work they have recently finished, and allow it to be photographed for inclusion in the newsletter.

To all those who so willingly contribute their work — **very many thanks!**

Carol Knott made this smart ripple sycamore ornamental bowl with ebonised finial:

David Lowe's ingenious and stylish design of a balanced, angle-supported sycamore bowl, and an ornamental bowl in impressively figured spalted beech with ebonised finial:

Clive Gibson skilfully crafted a loving spoon in lime and a twisted-stem goblet in laburnum (*below*):

Ron Rogers made this attractive spalted beech clock with inlaid paua shell numbers (*next column*):

As we have seen previously, Steve Fearnley makes an amazing variety of turned prizes for pupils at Malton School, and this is a selection of Talent Awards:

Steve is also a skilled pyrographer, exemplified by the following image of *The Bridestones*:

Ron & Sue Cuthbert showed us this delicately carved 'shoe scraper' (*yes, that is right! – Ed*) made by a friend, Ferenc Kudor of Transylvania:

Ron, who together with Sue are both learning woodturning, has carved the burr elm head, shown on the next page.

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Below are Marianne Scales' two teak pens:

Segmented bowl

Irving Waterhouse kindly provided the following instructions for making a segmented yew and bog oak bowl.

Materials: Yew, 130 x 50 x 50 mm (5 x 2 x 2 in) and bog oak veneers.

Jig: Make a sawing jig, the same thickness as the segments to be cut, by marking and cutting out a right-angled wedge shape. The sides that make up the right angle are 130 mm (5 in) and 48 mm (1 $^{7}/_{8}$ in) respectively. The jig's 48 mm side allows for the width of the saw blade when the yew pieces are cut in half, diagonally.

Preparation: Cut, plane, then square the yew. Cut each piece diagonally in half using the jig and sand. Additional segments are needed for holding in a cramping device. Prepare the veneer strips that fit between the wedges.

Stick pairs of wedges together with PVA glue on the planed surfaces. Dry in a warm place for 48 hr. Plane and sand the 'new' outside edges. When fitted together without any gaps, the thick end of the wedge is marked to a radius of 130 mm (5 in) that will be cut off and rounded to form the outer rim of the bowl blank.

Dry run: Using large jubilee clips, cramp the segments and spacing veneers together. Two 12 mm wide jubilee clips are better than only one. Make sure that all the pieces fit tightly together, and if necessary, dismantle, sand and re-assemble.

Assembly: Glue all touching surfaces, ensuring full cover, cramp together and allow to dry. Drill a central hole and glue a piece of contrasting dowel in the hole and leave to set.

Turning & finishing: Select the face that will form the inside of the bowl, drill a central chucking point using an appropriate Forstner bit. Mount on the lathe and turn the bowl in the normal way. Finish with several coats of finishing oil, and when dry, polish on a mop buffing system.

Future Snainton Woodturning Club Meetings

Continued from Page 1:

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5 July 2012
Bob Chapman – A Night at the Opera

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2 August 2012
Annual General Meeting
Bring & Tell

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6 September 2012
Simon Hope

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4 October 2012
Joey Richardson

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1 November 2012
Gerry Marlow

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6 December 2012:
Party Night

Photos, Copy & Newsletter Edited by Gordon Malan © 2012

Comments, copy, and suggestions or additions to the e-mail list to: mobile: 07809605969, tel: 01944 758287; pgmalan@biotech-is.co.uk

Thanks to Brian Wrigglesworth for providing DVDs of the events, to Ron Rogers for still photos, & to Heather Thornes for proof-reading.