TurningTalk
Turning Tomorrow's Treasures
Issue No 218 Newsletter of the South Auckland Woodturners Guild August 2014

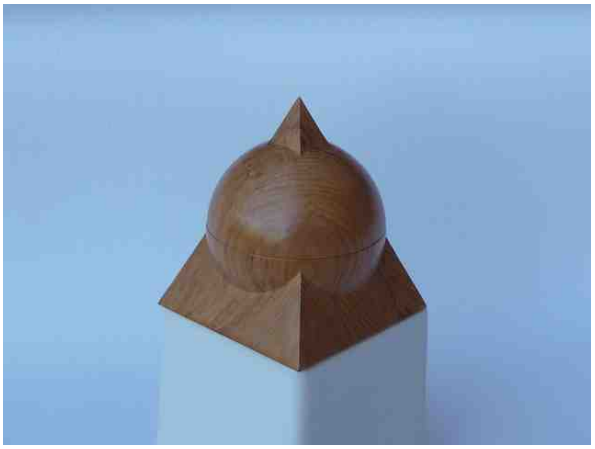
Pyramid Box

Wim Nijmeijer

Some time ago Terry Scott sent me a picture of a similar box with the wording 'this is your next challenge!'

It took me a while to figure out how to make one of these, but for me that is part of the fun.

Hans Weissflog was the original maker of this style of box.



Materials:

Rimu 150 x 110 x 110mm blank

Jigs, etc.

- Pyramid Jig
- Sphere Turning Jig
- Cone Jig - to aid in the positioning of the Perspex spacer and to establish the centre of rotation for the sphere turning jig
- Parallel distance piece – to aid in establishing the centre of rotation for the sphere turning jig. See Photo 3
- Straight edge with cut-out for sphere. See Photo 5

Pyramid Jig.

Made from an old structural Kauri Beam 380 x 200 x 150mm

I first turned a 95mm tenon and then shaped the wood and sloping face as detailed.

The sloping face of the jig is 25deg. This sloping face must also be perpendicular to the centre of rotation. I then fastened a 10mm Perspex spacer with a 92mm hole onto the sloping face. A 6.25mm hole was then drilled to the sloping face and using the centre of the 92mm hole.

The Perspex spacer acts as the locating spigot for the base of the pyramid, it also has 4 lines engraved on the uppermost surface at 90 degrees and equal distance from the centre of the hole. These lines will aid in locating the pyramid prior to turning.

When fastening the Perspex spacer to the sloping face, it is of utmost importance that the spacer is positioned so that the centre of the 92mm hole is exactly pointed to the centre of rotation. I used the “Cone Jig” for this.

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In this Issue

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Wednesday Nights 7:00pm
(Doors open 5:00pm)

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South Auckland Woodturners Guild
is a member of the
National Association of Woodworkers NZ Inc.
and the
American Association of Woodturners

Our meetings are held Wednesday evening in our clubrooms in the Papatoetoe Stadium Community Centre, Tavern Lane, Papatoetoe (see www.sawg.org.nz for directions). The official meeting starts at 7:00pm.

For those wishing to make use of the machinery, do some shopping, check out the library, get some advice, or just socialise the doors open at 5:00pm.

Meetings include General Business, Show & Tell, Reports on Club Events and the demo or activity listed below.

Futher information and the most up-to-date calendar can be found on our website at http://www.sawg.org.nz

Club Meeting Programme

Term 3 2014

Theme of Lidded Box

Sept	10	Spinning Top Box - Andrew Bright
	17	Woodcut Bowl Saver - Trefor Roberts
	24	Last night of Term - Table Prize, Lidded Box Term Prize, Life Members Prize for Excellence in Woodturning

Term 4 2014

Theme of Embellishment

Oct	15	First night of term - Programme TBC

Upcoming Events

August	31	Delivery of exhibits for the National Woodskills Competition.
October	2-5	Woodturning New Zealand International Symposium 2014, South Auckland Woodturners Guild
Oct 31 - Nov 2		Spin Around - Waitaki Woodturners Guild, Oamaru

Regularly Updated Calendars of Events can always be viewed at www.sawg.org.nz and www.naw.org.nz (including entry forms)

Macs Maxim

A healthy attitude is contagious;
Be a carrier

- Mac Duane

Shavings

Terry and South Auckland Woodturners

Thanks very much for your hospitality last week for the Robert Sorby demonstrations. We hope your club members enjoyed it as much as we did.

For your club members interest, here is the video Chris mentioned showing the three sided bowl turning demonstration he performed.

http://www.youtube.com/watch?v=pwwOVA9R6EU&list=UUapHK2gQ-IULWzj8HY6PVOQ&index=16

(search youtube for robert sorby three sided bowl" - ed)

Here is also some instructions on how to mark out the bowl.;

http://www.robert-sorby.co.uk/tips.htm#tmbsrs (see halfway down the page)

Maybe you can distribute this to your members who attended the demonstration? Those who couldn't make it may also find it interesting.

Many thanks again,

Regards,
Grant Oxenbridge
Carba-Tec New Zealand Ltd

Ever wonder where cashews come from?

You might think they grow inside a shell like any other nut, but there true origins are far more bizarre.

First of all, cashews are not actually nuts, but rather fruits from the cashew tree, a large evergreen tree that thrives in tropical climates.

The tree produces red flowers, which in turn produces yellow and red oval structures resembling apples.

These so-called cashew apples are very juicy and pulpy, and their juice is often added to tropical fruit drinks.

These fruits, also called drupes, are harvested and become what we know as a cashew nut.

In their raw form the other layer of the fruit contains multiple toxins, including anacardic acid, a powerful skin irritant similar to the toxin found in poison ivy, that must be removed prior to eating.

Roasting the cashews destroys the toxins, but roasting must be performed carefully outdoors because the smoke can irritate the lungs, sometimes to a life-threatening degree.

When they are roasted cashews change from their natural greenish-gray color to the light brown nut sold in stores.

Next time you crack open a tin of cashews, take a moment to appreciate the long journey those little c-shaped nuts took from the tree to your table!

It also explains why they are so expensive!

Now that I think about it, I often wondered why you can't buy cashews in the shell, like other "nuts". And, now I know.

This picture taken in Shakopee, MN, as one of his co-workers was driving by and had to circle the block.

It's a guy cutting down a tree in his backyard. The house is located on Third Avenue across from the Library.

The cops showed up telling the guy he couldn't do what he was doing. He told them to go to hell; it's his property and his tree.

Pyramid Box *> Continued from page 1*

Finally I fastened a steel "U' bracket to the jig for balancing purposes.

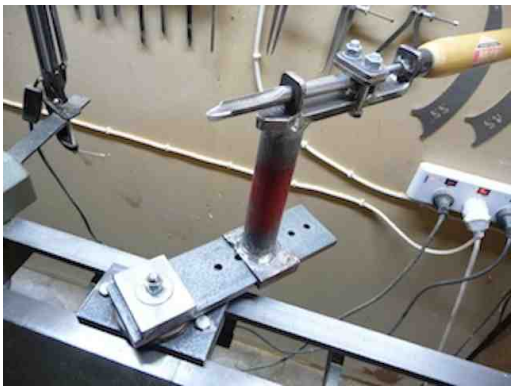
The distance from the centre of rotation of the sphere to the top of the Perspex spacer is 72mm.

During my first practice run, I determined that in order to obtain the required precision and repeatability, that a Sphere Turning Jig was required.

Since I did not have a jig I decided to make one myself. It should also be noted that the pivot point of the jig had to be as low as possible in order to clear the Pyramid Jig.

The Process:

I first turned a tenon (to fit the 92mm hole of the Perspex spacer precisely)

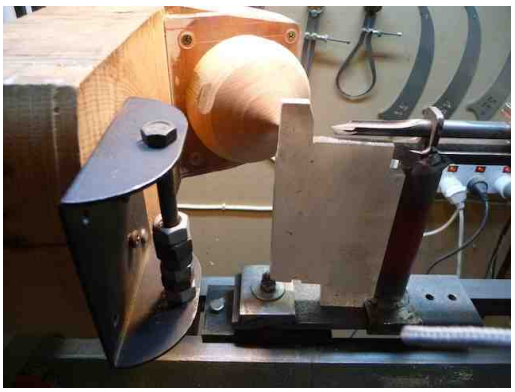


I then drilled a 20mm deep 8mm hole at the centre of the tenon. An M6 threaded insert was then installed.

The wood was then chucked and an 80mm diameter groove (used a 4mm parting tool) was made. The distance to the bottom of the wood and the centre of the groove is 72mm.

This groove will act as a measuring guide during the turning of the sphere.

I then proceeded by drawing the outline of the pyramid on two adjacent sides of the blank. Ensure enough space is allowed between the bottom of the finished box and the top of the Perspex spacer for parting off and clearance to the insert. I added approximately 5mm to all sides when cutting the rough profile with a bandsaw. After cutting the two opposing sides, I glued the off-cuts back on with hot melt glue, and then proceeded with the cutting of the two remaining sides.



(The box in the photo has a base of 85mm and the sphere is 78mm)

The next step is to fit the wood onto the jig. Mark one side of the wood as your reference/starting side. Make sure that this side is parallel with the engraved line in the Perspex spacer.

Note: It is not necessary that all the sides of the blank are exactly square, as long as only one side is used as the reference/starting side.

Secure the blank with an M6 bolt into the threaded insert.

Start up the lathe at low RPM. To balance the turning assembly, steel nuts can be added/removed as required. I put the speed up to approximately 1000 RPM.

I then proceeded by rough turning the first side of the pyramid to within 2-3mm of the final size (this also included the sphere) ensuring that the top and bottom sides of the pyramid are in line. I used the straight edge (with cut-out) for this.

Next, remove the pyramid box by unscrewing the M6 bolt, rotate the box 90 degrees, align the reference/starting side parallel to the next engraved line in the Perspex spacer and fasten the M6 bolt. Repeat the above process for the remaining sides.

The next step is to turn the sphere to the final dimension.

I determined the sphere's centre of rotation by using the Cone Jig and a parallel distance piece. With this established the sphere turning jig was then secured to the lathe.

The rough turned pyramid was refitted, starting with the reference/starting side first and secured with the M6 bolt. I then proceeded to turn the first quadrant of the sphere and continued until the (80mm diameter) reference groove had just been turned away. I then completed the first side of the pyramid. The final turning of the interface between the sphere and the side was done without the Sphere Jig.

Continued Page 10 >

Club Night Action

Wednesday 21st May

Sphere Clock - Terry Scott

Report by Earl Culham

Bruce Wood asked Terry to come up with a clock that was different, hence the sphere clock.

There are many ways to turn a sphere but a good place to start is with hard wood, it is easier to turn, so as Terry said, how come he had chosen a piece of macrocarpa? To start:-

Find the centre on each end, mount on the lathe with a spur drive and Steb centre in the tail stock, and turn to round. Terry used a large roughing gouge (make sure the cylinder is the same diameter over the length of the piece) and finished off the surface using the roughing gouge the same as you would use a skew chisel to get a smooth finish. A tip for using the gouge for finishing ; if you are getting ridges on the surface, slow down the speed of travel along the piece. The ridges are formed when the chisel is being moved along the surface before a full rotation has occurred, so slow down and all will be well. When you get chatter, reduce the speed of travel.

Using Vernier callipers, measure the diameter of the cylinder. Transfer this measurement to the length of the cylinder. Terry being a good toolaholic, produced a fancy pair of Soren Burger callipers to perform this task. Mark the centre with a pencil, this pencil mark will remain until the sphere is completed.

Using a parting tool, cut down to the spur drive and Stebbing centre, and then commence rounding the sphere with a gouge working back towards the centre line. Us a cup shaped piece of wood or a plastic cap to check the shape of the curve, continue until the piece is round, finish with a scraper.

Cut each spigot off with a saw. A tip from one of the observers; don't under cut, be a bit generous and leave a bit to be taken off otherwise you will be in trouble later.

Terry then mounted the partially completed sphere on a different axis between a cup held in the head stock and tail stock; make sure the tail stock is tight. Turn off the spigots by watching the shadow formed when the piece is rotating. Sand off and reset on a different axis, keep going until the sphere is finished.

Now to the part where a recess is created to hold the clock. There are many ways of holding the sphere while this is done, Terry started with a jam chuck. He commented if that didn't work he would go to version two, if that didn't work there was always hot melt glue!

Version one:-

The jam chuck. Terry mounted a piece of wood, trued up the face and ensured the blank was in balance, then transferred the diameter of the sphere to the face of the blank and commenced hollowing out a concave to the shape of the sphere. The depth of the hollow was made to half the diameter of the sphere. Terry took a bow; the sphere was a perfect fit first try! You might like to make a hole right through the jam chuck so that you could push a rod through to remove the sphere if it is very tight. Make the recess to fit the clock.

Mark the sphere on the centre line, so that you have a reference point when turning the base of the clock. Refit the sphere into the jam chuck and make the base.

Terry then moved on to alternative chucking systems to hold the sphere using either a vacuum chuck or a ring chuck.

The sphere was then finished using the Beall buffing system.

Altogether an enjoyable demonstration with plenty of good tips, banter and good humour, thank you Terry.

Club Night Action

Wednesday 4th June

Escoulen Mounted Clock

Report by Murray Wilton

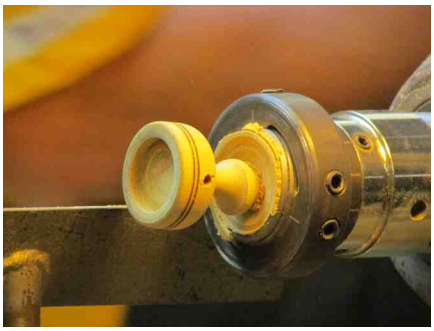
Club President Bruce Wood continued the clock theme to demonstrate off-centre turning. If you don't already have an Escoulen chuck (how many of us do?) and you want to keep adding bits and pieces to your increasingly very expensive hobby, you can get the basic chuck for around $457 (in Aussie dollars). Then you can add all kinds of gismos to double the investment and use it once every five years. The chuck works by having progressive changes in the centre point to effect some interesting off-set stages. Known as the eccentric chuck it was invented by a Frenchman, Jean-Francois Escoulen (who sold the patent to the Americans who haven't seen the joke yet).

Bruce showed the finished products before starting (wise move): two small clocks sitting on the top stems of a curious clock tree. He started with a block of kauri about 80 mm square and 300 mm long. He rounded off the block, parted off about 100 mm for the section holding the clock face, then cut a 40.5 mm spigot at each end to fit the Escoulen chuck jaws. After off-setting the Escoulen jaws for the first cut, Bruce forced one spigot end into the "floating" jaws, lightly tapping with a mallet to ensure it was seated firmly. The first turning manoeuvre resulted in an off-set stem turned to about 5 mm diameter (could be tapered from, say 7 to 5 mm) and about 40 mm long. He sanded this section before going on. It's essential to carry out any finishing work before changing to the next off-set position. You only get one shot at this.

Next Bruce adjusted the chuck for the second cut, which was more or less opposite the first stem and about 20 mm down the work piece towards the chuck (headstock) end. This creates a little platform separating each stem from the next one. The second stem was similar to the first, perhaps slightly thicker to give the tree effect. Finished and sanded once again before moving on to the third and fourth cuts. Up to about six stems could be fashioned in this way, each one sprouting a little further round the circumference of the original piece of timber. Each stem sits on a platform about 15 to 20 mm in diameter and about 7 or 8 mm thick. Bruce finished off with a base platform of about 30 to 40 mm diameter so that the clock tree will stand steady, then parted it off after sanding.

Finally Bruce turned the clock mounting from the piece he parted off at the start. This requires turning a recess of precise dimensions to house the clock in a snug fit, i.e. firm enough that it won't fall out, but also with enough play to enable the clock to be removed for battery changes. He drilled a small hole of suitable diameter to allow the top stem to fit into it. Some interesting touches can be added in the form of little pegs made from darker timber as a contrast. (Bruce used swamp rata.)

This is not a project for the faint-hearted or the heavy-handed. It requires a soft touch, a deft hand, lots of patience, an eccentric chuck and a degree of personal eccentricity, all of the qualities which our President displays in good measure. A very demanding demonstration ..... and equally difficult to write up!



Club Night Action

Wednesday 11th June

Crescent Clock - Cam Cosford

Report by Bruce Wiseman

The demonstration opened with the usual quips and banter and Cam discussing the moon as he saw it, or didn't because of the inclement weather. He first saw a full moon (didn't say what he was doing at the time) and then a couple of weeks later saw a Crescent Moon, so knew what he had to do! He then produced from his box of goodies a beautifully finished segmented sample of a Crescent Clock that he had made as part of his demo.

Method:-

Cut a circle 310mm in diameter. Mark a vertical line 12-6 o'clock oriented with the grain.

Mark a pivot line 16.085 degrees top right, bottom left. Mark a line at 90 degrees to the left of the centre of the pivot line and centre pop at 30 mm. Scribe a 98mm circle from this point and draw a second line parallel to the original pivot line.(this becomes the clock pivot line)

Drill a 35mm hole 14.087mm deep at the centre of the circle. Drill a 3mm hole full depth at the clock centre. Screw and glue 84mm spigot on the face side centre of the clock. Mount on the lathe using the 35mm recess and turn a convex edge to the circle, sand and finish. Cam used a template to ensure accuracy. From the second offset line mark centre point of pivot holes and bottom mount hole. Remove screw from spigot centre and remove from lathe. Remount on lathe using 84mm spigot and turn out recess for clock mechanism 15mm deep. Drill an 8mm hole for clock shaft using Jacob's chuck in tail stock. Turn groove using scribed line in the back of the clock approx 50% depth.

Remove from the lathe and drill the pivot holes 8mm where previously marked. Cam at this stage produced a mounting block to align the job with the drill mounted in the tail stock. Sand the front and back of the circle. Remount in the clock back recess and complete cutting the grove (use tape on the front of the clock and the circle so the centre does not fall out as you cut through)

Remove tape and outer circle. Dress clock edge and sand. Turn out clock face and sand. Cut flat on the bottom. Turn the base 140mm diameter 20-30mm deep drill 3mm hole at the centre and assemble.

It is always an entertaining evening when Cam is involved.

Thank you Cam for another precise demonstration with interesting jigs and finite calculations.

Check the club website at www.sawg.org.nz for a project sheet for the crescent clock.

Club Night Action

Wednesday 23rd July

Butteryfly Box - David Jones

Report by Gary McDonald

David started his demo with a range of completed butterfly boxes, this demonstration was very timely for me having just attended training for stage 2 bandsaw. That day consisted of completing my first box with homework being to produce a butterfly box for the Beads of Courage Programme.

Ash is one of David's preferred timbers for these boxes with a contrasting finial in a "simple style" - his words - a well made point for me was the darker the timber for finials the better. Piano keys and exotic timbers from far away lands featured as some options, as I have stage 2 colouring this weekend I am going to have a crack at black Indian ink on some ash to see what results I get. Levering piano keys off is likely to be frowned upon at home.

When mounting the timber as always consider grain orientation, David prefers to turn these boxes cross grain when using ash with a nice orientation visible from the completed boxes he passed around.

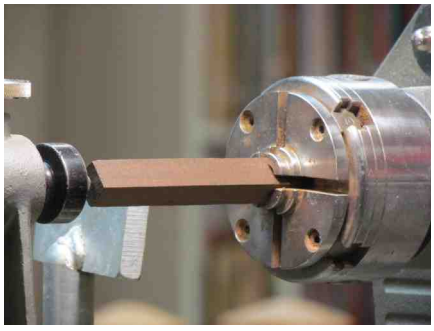
Along with the guilds beginners handbook one of my second reference points for information is the guilds website. Two plans for butterfly boxes are available under the projects tab with detailed instructions contained in the Clamshell box project. You will find them under B for boxes. The information on here is a great resource and constantly updated with new projects.

One aspect I enjoy from demonstrations is the little tips that are sometimes not detailed in plans such as when forming the spigot on the finial David utilises a 7mm open ring spanner that he has modified for this purpose.

Two other points in regard to finials were when gluing the finial you may find it useful to complete this on the lathe utilising the tail stock to ensure that the lid and finial align correctly otherwise you may end up with a result consistent with a well know Italian tourist attraction do not overdo the glue. Secondly when blending the finial with the lid be aware that you can get runs between the contrasting timbers it was suggested that sanding sealer may assist in preventing this.

David finishes his boxes to 800 grit and the finials to 2000 then finishes them off using the Beall buffing system. I have to admit having several items leave my hands, bounce off the lathe into the workshop wall of late when I am using the Beall I will be looking for some more tips before finishing a box with finial using this system - those design opportunities are starting to wear a little thin.

David thank you for an enjoyable demonstration – now to that homework!



Club Night Action

Wednesday 30th July

Threaded Box - Dick Veitch

Report by Graeme Mackay

The Dick Veitch method to spinning a thread….

And so, in his opening statement Dick had considered some other woodturning clubs request to make a square lidded, round bodied, threaded box. The cheerful opening discussion moved on to other items such as a delightful small needle case which is put forward as a practical use of threading in wood. Thus, the design for the night came out to be a clamshell threaded box.

Off we went, progress directed through a wonderful book by Fred Holder; “10 steps to the perfect thread”. A short contemplation of manual thread chasing on the best of New Zealand natives; Black Maire, was considered and very dutifully put aside. Manual thread chasing was deemed to be an esoteric art that could be considered at a later time. Dick had not decided how far away that time would be, if it all. Dick offered an easy solution which was to put aside manual thread chasing on the grounds that it was an extremely imprecise art form and that there were mechanical engineering options that offered better results.

So, the first step, two blocks of American redwood; marked, fixed between centres and ready to start the process of forming a spigot - actually two pieces with a spigot. That was the easy bit. And now, the explanation of how the process goes to allow the threads to be made. Actually, Dick started on a convoluted description of how one gets the correct depth and height measurements for the male and female threads. Much was made of the conversion from the esoteric imperial measurement of 12 TPI to a metric equivalent. The writer as with most the audience drifted off to a Zen like watching state while Dick completed the explanation of the measurements to make each piece take a thread and fit together in a compatible and workable manner.

The preparation part was obvious - clear the face off the block, making the face work with and leaving the correct amount as ascertained in the original mathematical calculation. A key was to get the depth of the female and the height of the male parts such that they would not insufficient thread length or depth.

The point missed by many in all the introductory conversation was that the threaded parts are made fixed. And, that the correct threaded part is made to appropriate measurements. No, you can not manually check to see if one part fits into the other - that is an “Oh” moment: the need for the spigot and recess to have overlapping measurements allows for the thread production.

And on to the mechanicals: Dick Veitch’s second logical and practical option; the cutting machine and its wonderful jig. The laser is a machine to move the cutter. The jig is a significant piece of metal that looks like a fancy engineers vice - which I suppose it really is - it did need three hands to install it on to the lathe bed.

The next part of this course was consideration to the direction of the cutting blade and the increment of the jig and chuck. The lathe ran at high speed. The DVR gives 3000 rpm making it a slow speed router with plenty of torque. At this stage of the demonstration the camera person was shifted to a number of places to get a better shot for the audience. They were hoping for some demonstrated disaster, however, the machine hummed along and made its wonderful cuts. These are known in technical circles as threads.

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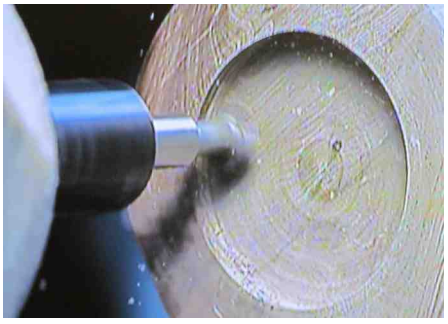

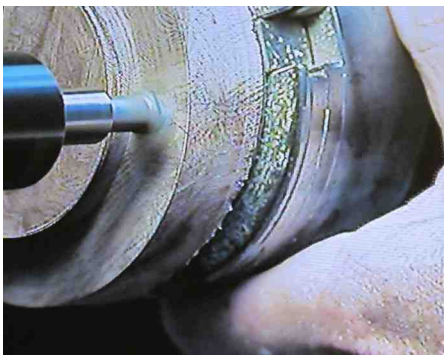

Club Night Action

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The jig process was mechanical and followed by, surprisingly, a manual dressing of the actual threads themselves. The reason given in the discourse was to make the entry exits better for the thread and tidy up the lead-in and lead out points. In truth, the clean up of the threads was completed with a manual operation by way of parting tool and a mechanical method by way of Dremel and cutting burr.

At this point, the reader may notice that there has been no discussion of the shape or style of the finished object. The shaping of the object, in this case a clamshell box, was assisted by the thread itself. The bottom or base threaded piece is then screwed on to the top piece still in a chuck.

Yes, often the threading process works. In this case, and with much joy from the demonstrator, they came together to make a very precise jam chuck in a cutting move, a ring was made on the base which in turn was made into a cleverly disguised spigot ring to allow the reversal cleaning process. On completing the base, the piece was taken out of the chuck and put onto a new tidy well disguised small spigot. Again, using a really well made threaded jam chuck unit. Sitting in its new little spigot (now finished and disguised) a series of gentle cuts with a sharp chisel, good bevel rubbing and soft hands finishes off the top of the clam shell threaded box.

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Next, measure the maximum protrusion (maximum diameter) of the sphere from the finished side. (A profile gauge can be used instead of measuring it)

Repeat the above process for the 3 remaining sides, ensuring that the reference/starting side is at all times parallel with its corresponding engraved line. Stop the lathe regularly when approaching the 80mm diameter groove and check that you do not encroach onto the previously turned quadrant sphere.

If everything has been turned precisely, and the Jig has been made as described, the four quadrants of the sphere should nicely match!

Carry out any sanding, which can be done on the lathe.

The next step is to cut the sphere in half.

I removed the pyramid box from the Jig and then chucked it.

I then reversed the direction of rotation (250RPM) and used a coping saw to cut the sphere in half. By using a coping saw I only lost about 0.5mm so that the grain still nicely matched.

The base was hollowed out and a ring inserted to act as a locating spigot for the lid.

I then made a jam chuck to accommodate the lid and applied hot melt glue just in case…….

The lid was hollowed out and made to fit the base.

As a last step the base was parted off and final sanding was carried out to 400 grit.

The box was finished with sanding sealer and lacquer.

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