



# Crosscut

Newsletter of the Witwatersrand Woodworkers' Association

PO Box 411346, Craighall, 2024

With sponsorship from **builders warehouse**

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 Go to <http://mysite.mwweb.co.za/residents/tpope/homepage.html> for back issues of *Crosscut*.

**Next Main Club Meeting on Wednesday, the 10<sup>th</sup> October** from 18h00 at the WWA clubhouse at REEA. Winston Klein will talk on Miniature Modelling in general including furniture, with a focus on miniatures from the 1:12th scale "Dolls House" perspective.

**Next Turner's monthly meeting is on Monday, the 1 st October** at 18h00 at the WWA clubhouse at REEA. A talk on vacuum chucking by Sid Marshal and Dries Blignaut. Steven will demonstrate making Christmas trees. REEA would like to sell some at their market in November and December, so if each member could make a few, we will be able to contribute to their market.

## News

**September Main Club Meeting.** John Allen gave a talk on joining wood using dowels. He showed how to line up the holes and then how to glue up the planks. Lionel Soekoe then demonstrated a doweling jig of his design and generously donated one to the club to be raffled for club funds.

**September Turner's Meeting.** John Speedy gave a demonstration of the making of a lace bobbin from privet, which is a white, close grained wood. A number of examples of lace bobbins were shown, most made by the late Harry Hughes. Some were painted by his wife, Mary. Harry was an expert in making these, and in production mode could turn out one every eight minutes. John showed some of his own and how he makes them using a template to mark out the cuts. A jam chuck with a tapering square recess is used on the driving end, and a plain centre at the other. Rick Florence demonstrated the making of an acorn shaped thimble holder. This is made in two parts. Suggested project for next month is either a lace bobbin or a thimble holder. Both, being small require a delicate touch and attention to detail.

### From the committee:

**Sam Norval.** There was a minute silence in memory of Sam Norval who died recently. Sam died in his sleep while on holiday in the Kruger Park on the 9<sup>th</sup> July 2007. He had been ailing for some time. Despite being past retirement age, Sam continued working, even though he didn't need to. He still found time for all his interests such as bee keeping and wood working. You may remember the oak side table Sam brought to show us a few months ago. He made it for his daughter. His ill health was not enough to cause him to slow down! Our condolences go to his widow Eucelia and his family.

**Sponsorship from Builder's Warehouse.** Dave Fincham has arranged a sponsorship from Builder's Warehouse, that will cover six months of our rent. We will display some of their signs at the club house and a logo in the newsletter. In return we may be called upon to help with some demonstrations at the end of the year, but this hasn't been finalised.

**Interclub Box Competition.** There will be an interclub meeting on the Saturday, the 27th October 2007 at the WWA club house, to which the Pretoria and East Rand clubs are invited. It is a repeat of the successful Candlestick competition held on the 21st April this year. The format will be same as the last one, bring and braai starting at 11h00. Bring boxes that you have made to show and be judged (at 14h00). Boxes may be turned or not, of any design. Prizes will be given for the best on the day. Bring any old tools and wood blanks that you wish to sell. The turners' committee is organizing this. (Neither the Pretoria nor East Rand clubs were able to host this, so WWA clubhouse is being used again. This lets us appreciate the value of our clubhouse, and makes all the work we have put into it to date worthwhile.)

**Clubhouse Ventilation.** The club house has a ventilation problem – there is too much of it in winter. Being located down by the Braamfontein Spruit, things cool down very quickly at night. At least three layers of clothing are recommended for our winter meetings. To reduce the flow of cold air, it is proposed to close up the gaps between the tops of the walls and the roof. A ceiling is part of the long term plans, but in the meantime, we will just close up the

gaps. A work party is scheduled for the Saturday, 13<sup>th</sup> October at 09h00. We need at least six helpers, so please volunteer to Costa at the next meeting.

**Show-and-tell and Ask-the-club.** If you have something you would like to show off – a project or a clever solution or tool, please come and share it with the club. If you have a problem or question, don't be afraid to ask. Free raffle tickets for contributions.

**Subs are overdue.** If you haven't paid by now, you probably won't be reading this. Please pay the secretary at the next meeting.

**Annual Braai.** The annual braai will take place on the 24 November 2007 at Greenside High. Attendance lists will be available at the October and November meetings for you to sign up.

**Pretoria Woodworking Association – annual exhibition.** Exhibition of members' work, demonstrations of equipment and techniques, prizes to be won, refreshments available. 20 October 2007, 08:00 to 16:00 at the Lions Club, Umgazi Road, Ashley Gardens (Off Atterbury Road, west of N1), Adults R10, children free. Contact Brian Addis at [addisbj@telkomsa.net](mailto:addisbj@telkomsa.net) or 012 361 2756 or At Smit on 012 993 1822,

**Toymakers.** The toymakers meet on the first and third Monday of every month, at 09h00 till 12h00 at the new clubhouse. Contact Eddie Marchio on (011) 678-8062 or [renato@pixie.co.za](mailto:renato@pixie.co.za) for more information.

**Wednesday Workshop.** The Wednesday evening workshop is on the first and third Wednesdays of the month, from 18h00 till 20h00. Contact Winston Klein on (011) 674-1513 for more information.

**For Sale:**

**Kity Bestcombi 5 in one combination machine.** Ideal for the small scale workshop.

Unused, as new. Offers from R12,000- to R15,000-

**Wood** – Wit Peer and Rooi Els mostly 2.5 m long x 25mm in assorted widths 80 to 280mm.

**Emco Star Combination machine.** Saw-table, band-saw, belt sander, disc sander, lathe, mortising table, and accessories. Handbook included. On stand. See picture on left->

**Chinese lathe.** ½ hp, 800mm between centers. Suit spindle work. On stand. Offers around R450-

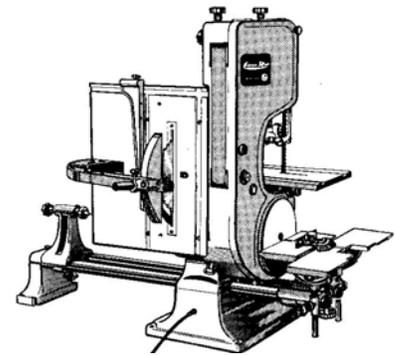
**ABAC Compressor.** 1.5hp, portable. Offers around R500-

**Hobbycraft drill press.** 4 speed, 0.12kW including cross vice and 4" vice. Offers around R350- On stand.

**Steel work table.** Plain top – Offers around R100-

**Afrox Easiweld.** 130A aircooled arc welder. Offers from R450- Can be seen at the clubhouse.

**Bench grinder.** 6" 150W. Eurasia R180-



Contact Eucelia Norval (Sam's widow) on 011 646 4340 (Forest Town)

Large selection of **woodworking tools and machinery** for sale, including a full range of hand tools, power tools (planer, router, belt and orbital sanders etc.), table saw, standing planer/thicknesser, lathe, etc. There is a mixture of hobbyist to light industrial level. All in excellent condition and some unused. Please contact Neil Nelson on 0827840497 or [neilnelson@telkomsa.net](mailto:neilnelson@telkomsa.net). Ideally he would like to sell the equipment as a single lot.

**Free Tamboti logs** - contact Darryl 0828004296 at 15 Richmond ave Craighall

**Ryobi Table Saw** with mounted attachments for a Router and a Jigsaw. Offers from R500.00. Contact Jenny Tomlinson on 072 329 0407 [jenny@regency.co.za](mailto:jenny@regency.co.za)

**Custom furniture manufacturer** African Hardwood Collection (formerly Afro Rail Collections) is closing doors as the owner has decided to generate some liquidity to explore another exciting business opportunity. As a result, a wide variety of equipment is available from saw benches to belt sanders to trailers. If you are interested or would like to make an appointment to view the various items for sale, please contact Greg Hayward on 082 928 3697

7m saw bench incl extraction – 2of R40,000.00 ea

3m Belt Sander R10,000.00

Watkins 660 Planer R20,000.00

Trailer (4.5m x 1.8m) R14,000.00

Drillpress – 2 of R2,000.00 ea

Spindle Moulder R8,000.00

Bandsaw R12,000.00

Small Saw Bench R7,000.00

Small Radial Arm Saw R2,000.00

Bobbin Sander R2,000.00

Medium Radial Arm Saw R7,000.00

Spray booth components: 2 x Extractor fans, doors, fire proof lights  
 Wood Clamping System R10,000.00  
 Fire extinguishers- 3of R400 ea  
 Large Saw Bench R20,000.00  
 Various handtools including drills, pozzie drive screw drivers, hand planers, skill saws etc  
 Compressor – 2 of R8,500.00 ea

**Training Course Schedule.** Anybody that is interested should either contact Ken Jackson or the facilitator. The cost of the course is R50 for members. All courses listed below are on a Saturday morning.

Date	Time	Course Name	Facilitator	Contact No	Email Address
25 August 2007	11:00	Introduction to Turning	Trevor Pope	083 388 2214	<a href="mailto:tpope@iafrica.com">tpope@iafrica.com</a>
01 September 2007	11:00	Hand Planes - Setting Up	Winston Klein	011 674 1513	<a href="mailto:kleins@telkomsa.net">kleins@telkomsa.net</a>
08 September 2007	11:00	Routing	Jenny Tomlinson	072 329 0407	<a href="mailto:jenny@regency.co.za">jenny@regency.co.za</a>
15 September 2007	11:00	Finishing	Trevor Pope	083 388 2214	<a href="mailto:tpope@iafrica.com">tpope@iafrica.com</a>
06 October 2007	11:00	Table Saw	Jenny Tomlinson	072 329 0407	<a href="mailto:jenny@regency.co.za">jenny@regency.co.za</a>
20 October 2007	11:00	Sharpening Plane Blades and Chisels	Winston Klein	011 674 1513	<a href="mailto:kleins@telkomsa.net">kleins@telkomsa.net</a>
27 October 2007	11:00	Sanders, Grinders and Drill Press	Roger Matthews	082 893 0193	<a href="mailto:rbmatthews@vodamail.co.za">rbmatthews@vodamail.co.za</a>

Courses may be repeated early next year if there is a demand. Please contact Ken.

**New Bowl Gouges.** Steven Barrett showed some prototype bowl gouges that he commissioned. The tip is a replaceable section of S705 steel which is 5% cobalt high speed steel (HSS) from Bohler. The tip screws onto the shaft, which is mild steel. You have to make your own handle.

S705 steel from Bohler Uddeholm is nominally equivalent to M41 HSS. Most gouges available are M2 HSS, so you should see a significant improvement in edge retention due to the additional cobalt. When treated to specification, S705 is nominally at a hardness of 65 HRC. The tips were manufactured in the annealed state, and then sent to Bohler for heat treatment, which is complex process, that must be very closely controlled to achieve the required properties.

The shaft is a nominal 16mm. This is almost the same size as the Rolly Munro tool (sp). Steven told me that it didn't fit in his handle, so I measured the shafts. The Roly tool is 15.85 mm diameter, and the shaft of the gouge is 15.89mm, so it won't fit. To make it fit, there are two options, bore out the handle of the Roly tool (judicious use of a file may be enough) or thin down the shaft of the gouge. I opted to thin down the shaft, as I didn't want to increase the clearance between the shaft of the Roly tool and the handle, which might increase vibration. I mounted the gouge shaft between centres on my wood lathe as follows: I fixed a block of wood into the chuck at the headstock end and bored a hole with a gouge to be a tight fit to the threaded end of the shaft. At the tailstock end, I used an interchangeable live centre with a cup centre. I set my lathe to the highest speed and used sand paper to reduce the size, measuring carefully with a micrometer as I went. I took it down to 15.85mm, which is a close fit. I started with 180-grit cloth and finished with a 320-grit. This took about 15 minutes.

## Lathe Speeds – the effect on the workpiece

When a work-piece is spun in the lathe, centrifugal forces act on the piece and kinetic energy is stored in the piece.

What does applied mathematics tell us about these forces and how can understanding them help you to become a better turner?

Imagine a weight tied to a piece of string that is spun around your head in a circle. The string applies a radial force inwards to the weight, to constrain it to move in a circle. If the string broke, the weight would travel in a straight line, at a tangent to the circle, at the instant that the string broke. This is explained by conservation of momentum – the weight has inertia and will tend to continue on the same path unless acted on by another force, such as gravity or, if you are a small boy, a window pane!

You can extend this example to the rim of a bowl which can be thought of as consisting of a ring of weights joined together. The weights are held together by the strength of the wood. You can imagine that if the lathe turned fast enough, the outwards force exerted by the masses arranged around the rim will exceed the tensile strength of the wood, and the rim will burst. This could be quite exciting, particularly if you are standing in the path of the fragments, and could ruin your day! This is why it is recommended you stand aside whenever starting up or increasing the speed.

The force needed to hold the masses together (F) is

$$F = \frac{mV^2}{r}$$

Where: m is mass of the rim  
V is speed of rotation  
r is the radius of the rim

From this you can see that if you double the speed of rotation, the force increases four times. This means that you should think twice about the increasing the speed of flimsy work piece!

Another interesting relationship is the kinetic energy E stored in a moving object:

$$E = \frac{1}{2}mV^2$$

Where m and V are defined as above.  
(These formulae are simplified, but are good enough to explain the principles.)

This applies equally to rotating work-pieces. If you should double the speed, the energy stored in the rotating mass increases by a factor of four! Then, if the work piece bursts or comes off the lathe, there is four times as much kinetic energy to be absorbed somewhere, probably as some form of plastic deformation. Hopefully the plastic deformation does not happen to you or plastic surgery may be needed to restore your attractiveness to the opposite sex!

Another interesting effect of the energy stored in the work-piece occurs when the cut is interrupted because the piece is not yet round. You may have noticed when roughing out a work-piece with an interrupted cut, that at a slow speed, it seems too easy to stop the work-piece with a deep cut, whereas at a higher speed, this is not the case. The reason is with the increased energy stored in the rotating object, there much more momentum and energy to carry the tool through each cut and it is less likely to stop. Obviously, on average, you can't exceed the power available from the motor, so this sets a fundamental limit on the maximum rate of wood removal. At higher speeds an interrupted cut will seem much smoother. Doubling the speed stores four times as much kinetic energy in the work piece.

However, remember that if something should go wrong, there is four times as much energy to create mischief should something go wrong, so be extra careful. Stand aside when starting up, and when turning as well, if possible. Use a facemask, or even a fancy combined helmet and facemask (Like the one Triton make) if you think you are at risk.

If you are hollowing out a piece and the wall thickness is becoming rather thin or you are worried about the mechanical integrity of the piece, then as a precaution against bursting, you can wrap some fibre tape around the outside, to resist the tendency to fly apart.