



# Crosscut

With sponsorship from **builders warehouse**

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 Editor: Trevor Pope ([tpope AT iafrica.com](mailto:tpope@iafrica.com)). All written content and opinions are those of the editor, unless stated. © Copyright reserved.  
 Go to <http://mysite.mweb.co.za/residents/tpope/homepage.html> for back issues of *Crosscut*.

**Next Main Club Meeting on Wednesday, the 14<sup>th</sup> May 2008** from 18h00 at the WWA clubhouse at REEA. Demo by Marco Tarantino on the Dremel tools and attachments and the Main Club AGM.

**Next Turner's monthly meeting is on Monday, the 5<sup>th</sup> May 2008** at 18h00 at the WWA clubhouse at REEA. Turner's section AGM and DVD on making a lidded box with a fine finial by Cindy Drozda. ([www.cindydrozda.com](http://www.cindydrozda.com)) The project for May is to take a project that is well finished off the tool and finish it using the minimum of sanding.

## News

**April Main Club Meeting.** Fanie le Hanie from Executool ([www.executool.co.za](http://www.executool.co.za)) in Pretoria gave a talk on cutters and blades. Fanie showed a selection of circular saw blades and he showed the differences between the different tooth grinds and the benefits to be seen for different materials, particularly with Melamine, in avoiding chipping. (Check out the introductory courses on their web site as well.) He was supported by Michael from Austro, who outlined their sharpening service offerings. They have a fully robotic sharpener that can sharpen up to 650 blades a day to very precise tolerances. He proposed providing a batch sharpening service to club members at a 10% discount when a reasonable quantity of blades are sent through – this will be discussed by the committee.

**Executool** can be found at the Montana Value Centre, Corner of Calliandra St and Zambesi Drive, Montana Park, Pretoria. Tel 012 – 548-7425 email: sales (at) [executool.co.za](mailto:executool.co.za) (replace (at) with @)  
 Pierre Grobler introduced himself as the agent for **Tormek** sharpening grinders and jigs for South Africa. He also represents **Arbortech**.

Anton Louwrens who is the chairman of the Pretoria Wood working association introduced himself as well. Visit their new web site at [www.ptawoodworkers.com](http://www.ptawoodworkers.com)

Glenn Lopich (our treasurer) explained the cash flow position of the club. With the present subs, we can expect a small surplus for 2008/9, so to provide a reasonable margin, it was proposed to raise the subs for 2008/9. A figure R250- per year was agreed, and this now becomes payable for the May AGM. (See invoice below). The budget figures are available for inspection from Glenn on request.

**April Turner's Meeting.** Chris van Heeswijk gave a presentation on the wood of the month, Guiboutia Coleosperma, better known as African Rosewood. Next month he will talk on London Plane (Plantanus x Acerfolia)

Buddy Lawson showed his attachment for turning spherical objects (balls) and his method of work holding. Rikem supplied some bottles of their thin CA glue, as well as some samples of their other products for testing.

Lionel ("soft hands") Soekoe gave a talk on sharpening using a grinder and his jigs. He recommends the use of a Norton Global Force grind wheel. It is available in 46 and 60 grit, and in 100 grit if you order 10 from el Carbo. He recommends the use of a diamond tipped dresser for truing up a grinding wheel. Used with his jig, and a 0.2mm feed, he achieves a fine grinding

surface suitable for most purposes. Lionel showed some techniques for sharpening and explained some of the principles.

**From the committee:**

**Keeping out the cold air for winter.** At the main club meeting, you will have noticed that the gaps between the roof and the walls were closed up using Rhino-board. Thanks to Costa and those that assisted him on the 05th April – Barries, Paul Rae, Richard van Dyk and Lynton Dennill. Costa also bought two gas heater attachments on behalf of the club to help take off the forthcoming winter chills. One day, when we have more certainty on our long-term plans and security of tenure, we will put up a ceiling.

**AWSA Congress.** Remember to register for the congress in Pietermaritzburg from the 4<sup>th</sup> to 6<sup>th</sup> July. More details are can be found on the AWSA web site at <http://www.awsa.org.za/Symposium.htm>. The visiting turner is Nick Arnull – see his web site at <http://www.nickarnullwoodturner.co.uk>

**AGM and New Committee.** Notice is hereby given of the annual general meeting for the Wits Woodworking Association that will take place on Wednesday, the 14<sup>th</sup> May 2008 at the REEA Clubhouse at 18h00. Items on the agenda:

- Report from the outgoing chair.
- Acceptance of the treasurer’s report for 2007/8. Approval of the budget for 2008/9.
- Election of office bearers and committee members for 2007/8. Volunteers for all the positions are welcome, as some of the committee will step down. Others will remain, subject to being re-elected, in order to ensure continuity. A list of duties for each member was published in the March 2008 Crosscut, so that volunteers can see what is required. Having fun is definitely part of the job description!
- Address from the incoming chair.

**ANNUAL MEMBERSHIP SUBSCRIPTIONS: 2008 / 2009 year**

Membership subscriptions for 2008 / 2009 are due on 1 May 2008. At the April 2008 meeting, approval was given by the club for the increase in subs to R250- per year (still only R21- a month). Please pay the Treasurer before the end of April to maintain continuity of your membership. Post cheques to the address in the masthead of this newsletter. Details for direct deposits are on your *personal* invoice below.

Thank you.

**Kenneth Jackson Secretary**

**Payment of subs.** We have experienced difficulty with the tracking down of all subs paid. Please can members ensure that they pay directly to the treasurer of the main club (Glenn) and that they receive a receipt for future reference. Please send all changes of address direct to the secretary.

INVOICE		15 April 2008
DUE DATE		AMOUNT
1/5/2008	SUBS for the Witwatersrand Woodworkers Association - 2008/2009 year	R250-00
	Direct deposits to: Witwatersrand Woodworkers Association. Nedbank Main St. branch - Code: 197905. Account No: 1979-321833 – Put your name in the comment line, so that the treasurer can identify the source of the payment.	

**Please Note:**

**Toymakers.** The toymakers meet on the first and third Mondays of every month, at 09h00 till 12h00 at the 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 workshops are on the first and third Wednesdays of every month, from 18h00 till 20h00. Contact Winston Klein on (011) 674-1513 for more information.

**For Sale:**

Elektra Beckum PK250 Circular saw, 3.1 kW 220V motor, 250mm blade, 900x1420mm table.	R7500-
Elektra Beckum Planer/thicknesser, HC 260 2.2kW 220V motor	R6500-
Elektra Beckum BAS450 Bandsaw, 1.1 kW 220V motor, 310mm cutting depth, 440mm width, 4 speed,	R9500-
DeWalt DW1510 Radial Arm Saw, 255mm blade, 530mm cut	R9500-
Elektra Beckum SPA1000 Dust extractor, 1000m <sup>3</sup> per hour flow,	R2000-
Induscor ABAC 300/800 5.5 kW/380V air compressor with 300l tank, 800l/min	R9500-
Contact Flemming Ravn on 011-646-3596 or 073-672-0081	

Approximately 110 back issues of "Woodturning" the British Wood turners magazine for sale at R15/copy will be available for sale at the next Turner's meeting - for "pre meeting day purchases" contact Andrew Riley on 083 442 0914

Deep Hollowing – As many turners who have tried it will know, hollowing out deep vessels is difficult and tedious. Many devices have been invented to assist, from home-made to commercial. This web page documents some of the commercial offerings, to show some of the ingenious ideas that people have built: <http://www.svwoodturners.org/Handouts/HollowingSystems/HollowingSystems1.html>

## Solvents for the Wood Workshop

Trevor Pope - 29-Apr-08

You may recall Viv Martin's presentation at the WWA clubhouse last year, where he showed off some products such as the White Spirit that Hardware Centre sell. This prompted me to write this article on solvents. As anybody who has study organic chemistry will know, there is a very large number out there, but only a few that woodworkers will commonly use. There are important differences between them which are useful to understand.

Wikipedia defines a **solvent** as a liquid that dissolves a solid, liquid, or gaseous solute, resulting in a solution. The most common solvent in everyday life is water. Most other commonly-used solvents are organic (carbon-containing) chemicals. These are called organic solvents.

To understand the ability of solvents to dissolve substances, it is useful to understand a little about them. Broadly speaking there are **polar** and **non-polar** solvents. This is useful to know because polar solvents dissolve polar substances better, and non-polar solvents dissolve non-polar substances better. Polar solvents are liquids whose molecules have an unbalanced dielectric charge so that one side is more negative than the other. Examples of polar solvents are water, ethanol, acetic acid and acetone. Polar substances such as salt and sugar dissolve only in very polar substances like water.

Non-polar solvents such as turpentine and hexane dissolve oils and waxes which are also non-polar. Oils and waxes are immune to water, because it is a polar solvent. You can see an example of this in salad dressing, where the oil and water quickly separate.

Solvents have varying properties and dissolve substances to varying degrees, and it is important to be aware of this. A good example of this the sticky label problem. When you buy something and wish to remove the sticky label, you have to be careful not to damage the item. Using an aggressive solvent is a quick way to ruin many items. Obviously one should try the least aggressive solvent first, which is water, but most glues are immune to this. You could try alcohol, white spirit, citrus oil or turpentine, failing which perhaps lacquer thinners or benzene can be tried. Lastly something like acetone which is a very aggressive, volatile solvent, can be tried, all the while being careful not harm the item or yourself.

If you are unsure of the properties of a solvent, it is wise to do a little research. The key documents are the Material Safety Datasheets. The manufacturers are obliged, by law, to make these available. Some try claim that the formulations are trade secrets, but this is spurious, as it is very easy for a competent chemist to discover the exact composition using modern analytical techniques. The MSDs contain information on the

chemical properties and the hazards such as toxicity and flammability, which you should heed. It is a good practise that MSDs are made available in the workplace.

Other than water, all the solvents discussed below are organic, meaning that they contain carbon, together with other elements such as hydrogen, oxygen, and sometimes chlorine. It is remarkable that all these compounds contain carbon, hydrogen, sometimes oxygen and chlorine, and they have such different properties. The size and arrangement of the atoms in the molecules determine the properties. Even compounds with the same chemical formula can have different properties because the atoms are arranged differently. These are called isomers. Isomers are compounds that have same chemical formula, but different spatial structures – molecular arrangements. There is a very wide variety of organic molecules, with widely varying properties, so I am just touching the surface here.

**Safety – The only solvent that I can think of that is completely safe in the workshop situation is water.** All the others have risks associated with them, such as toxicity, which I have tried to document below. Some are relatively safe, but almost all are flammable, so fire is a risk, particularly with storage. It is hard to think of a more flammable mixture than wood shavings and some of the solvents below. If these should catch fire, you probably have no chance of putting out the fire. Some of the containers that solvents are sold in are not safe. If you look at some of these on the shelf in the shop, you will see that some are no longer full, and you can only wonder what happened to the missing part. It is a wonder that more shops don't burn down! A welcome exception to this is Plascon who sell their products in robust, reusable bottles with child-proof tops. Well done Plascon!

Here is a list of some the solvents you are likely to encounter in your workshop and their properties:

### Water

This is a well-known chemical compound that is harmless in its pure form, which is just as well as we consist mostly of water. It freezes at 0°C and boils 100°C at sea-level. It expands when it freezes, which is a good thing, otherwise the oceans would all be filled with ice. It has some interesting chemical and physical properties, which are not yet fully understood. However, here we need only record that it is a strong polar solvent, capable of dissolving most salts and numerous other substances to varying degrees. All wood contains water some degree, as do most natural substances. In the workshop water can be used to raise the grain of wood, prior to finishing, as well as solvent for some types of dyes and water-based finishes. PVA paints use water as a carrier.

### Methylated spirits

Methylated spirits (Meths) is also called denatured alcohol. It is sold as such, to prevent human consumption. Meths is a combination of methyl (CH<sub>3</sub>OH) and ethyl (C<sub>2</sub>H<sub>5</sub>OH) alcohols, with at least 10% methanol. Purple dye may be added to make the mixture unpalatable, to discourage consumption. These are weakly polar solvents that have the interesting property of being able to dissolve both polar and non-polar compounds to some degree. Water and alcohol mix uniformly (they are miscible) because they are both polar. Meths dissolves and mixes with a large number of liquids, which makes it a versatile solvent for both polar (salts) and non-polar substances, such as oils.

Ethanol freezes at -114°C and boils at 78°C. It is highly flammable (flash point 13°C) and moderately toxic, so when absorbed in small quantities, it is not harmful.

Methanol freezes around -97°C and boils at 65°C. The flash point is 11°C, so it is highly flammable, but relatively easy to extinguish. However it burns with a dim blue flame, that may not be immediately apparent in bright light. It has similar intoxicating properties to ethanol, however, it is much more dangerous when metabolized by the body, leading to liver damage and blindness. It is absorbed through the skin, so should be used with caution, particular for exposure at occupational levels. Do not use in confined spaces to avoid inhaling the vapor.



Meths is commonly used as a solvent for shellac for finishing. Sometimes the purple aniline dye can be apparent, but this colour can be removed by the addition of a small amount of caustic soda. However this should be done with caution, as the solution becomes strongly basic and can attack some types of plastics, such as the cheap bottles that meths is sold in, leading to a leak and a potential fire hazard (don't ask me how I know this). I don't know what effect it may have on shellac.

(To be continued next month...)