



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.mweb.co.za/residents/tpope/homepage.html> for back issues of *Crosscut*.

Next Main Club Meeting on Wednesday, the 14th November from 18h00 at the WWA clubhouse at REEA. John Allen will give a talk on further techniques for joining wood using mortices and tenons.

Next Turner's monthly meeting is on Monday, the 5th November at 18h00 at the WWA clubhouse at REEA. There will be a demonstration of some new products by Hardware Centre. Bring your Christmas Trees to show and donate.

News

October Main Club Meeting. Winston Klein talked about Miniature Modelling in general including furniture, with a focus on miniatures from the 1:12th scale "Dolls House" perspective. He showed some examples of miniature furniture he has made, and explained the techniques used.

October Turner's Meeting. There was a talk on vacuum chucking by Syd Marshal, Dries Blignaut, and Roy Gibbs, who showed different systems used by each of them.

Steven Barrett demonstrated how to turn a Christmas tree. REEA would like to sell some at their market in November and December. Now that you know how to make one, please can you make a few to bring to the next meeting to donate to their market for December and January?

From the committee:

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.)

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. Lunch will be served at 12h30. Due to the rising cost of catering, we will charge a nominal fee again this year. Costs are R25- per member and R35- per spouse or relative, children under 12 free. Tickets must be purchased in advance and will available at the next meetings or from Glenn Lopich (082 442 7792). Each member will be required to bring a salad or pudding – please indicate this on the booking sheet when you buy your tickets. Bring your own plates, cutlery and glasses.

Toys for the braai – don't forget to bring your toys!

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 or 012 361 2756 or At Smit on 012 993 1822,

AWSA Congress 2008. The 2008 AWSA Symposium is scheduled for 4 – 6 July 2008 at the University of KwaZulu Natal, Pietermaritzburg, KZN, with Clyde Neumann and Winston French leading the organising

team. The last two congresses took place in the Cape, which was a bit too far for many Gautengers to travel. Pietermaritzburg is only 5 hours away, so this is a good opportunity. Previously, the Wits Woodworking Association organised the 2005 congress together with the Pretoria club. The 2004 congress took place in Durban. Registration forms are available from the turner's committee members or email the editor. Contact Clyde on neumann@mweb.co.za.

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 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-

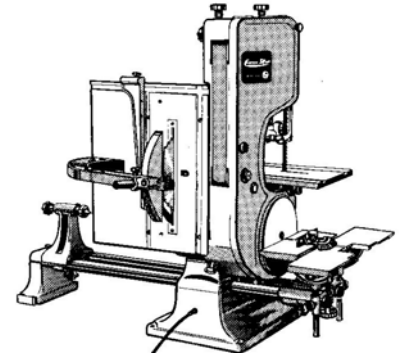
ABAC Compressor. 1.5hp, portable. Offers around R500-

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)



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 – 2 of 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- 3 of 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	tpope@iafrica.com
01 September 2007	11:00	Hand Planes - Setting Up	Winston Klein	011 674 1513	kleins@telkomsa.net
08 September 2007	11:00	Routing	Jenny Tomlinson	072 329 0407	jenny@regency.co.za
15 September 2007	11:00	Finishing	Trevor Pope	083 388 2214	tpope@iafrica.com
06 October 2007	11:00	Table Saw	Jenny Tomlinson	072 329 0407	jenny@regency.co.za
20 October 2007	11:00	Sharpening Plane Blades and Chisels	Winston Klein	011 674 1513	kleins@telkomsa.net
03 November 2007	11:00	Sanders, Grinders and Drill Press	Roger Matthews	082 893 0193	rbmatthews@vodamail.co.za

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

Cyanoacrylate glue – for Wood Workers

Cyanoacrylate is the generic name for superglue. Cyanoacrylate glues are sometimes known as "instant glues" or by the name Super Glue. The acronym "CA" is quite commonly used for industrial grades.

Monofunctional cyanoacrylates were first discovered in 1942, by Harry Coover at Eastman Kodak when searching for a way to make plastic gun-sight lenses. It did not solve this problem, since it stuck to all the apparatus used to handle it, including the expensive lenses in the refractometer. Cyanoacrylates were not patented until 1949. In 1951, scientists at Eastman Kodak accidentally discovered the rapid ambient-temperature cure and superior adhesion properties of CA. The first viable production process did not evolve until 1954. It was patented in 1956 and developed into *Eastman 910* adhesive in 1958.

Chemistry

In its liquid form, CA consists of monomers of cyanoacrylate molecules. Methyl-2-cyanoacrylate ($\text{CH}_2=\text{C}(\text{CN})\text{COOCH}_3$ or $\text{C}_5\text{H}_5\text{NO}_2$) has a molecular weight equal to 111.1, a flashpoint of 79 °C, and 1.1 times the density of water. Ethyl-2-cyanoacrylate ($\text{C}_6\text{H}_7\text{NO}_2$) has a molecular weight equal to 125 and a flashpoint of 75 °C. These are short chain polar molecules. Polar means that they have charged ends, and by making the liquid weakly acid, they are kept apart. Anything that disrupts this polarization will allow the molecules to link together, polymerizing, to form long chains called polymers. Polymerization can be triggered by a change in pH by the addition of a base, or even dilution with water. Once triggered, polymerization proceeds rapidly and the glue sets, joining the surfaces together.

Because the presence of moisture causes the glue to set, exposure to moisture in the air can cause a tube or bottle of CA glue to become unusable over time. When the bottle is not in use, replace the cap, to exclude any moisture that may cause setting. Alternatively, to prevent an opened container of glue from setting before use, it must be stored in an airtight jar or bottle with a package of [silica gel](#) to absorb moisture. Storing CA glue in the fridge reduces the reactivity and retards setting. However, before using CA taken from the fridge, give it time to return to room temperature.

In the right conditions CA glue sets quickly, often in less than a minute. A normal bond reaches full strength in two hours and is waterproof. Accelerators can trigger setting in two or three seconds, with some loss of strength. Over-use of accelerators can cause a white haze to appear on the surface.

Acetone, which is sometimes found in nail polish remover, is a commonly available solvent capable of softening cured cyanoacrylate. Nitromethane is also an excellent solvent. Methylene chloride found in some paint strippers is the most effective but is toxic.

Pure CA is very thin, such as sold by Qualichem as the product Magic Wood. For other applications, additives can be used to thicken the glue to provide better gap filling properties. Other additives can improve flexibility, shock resistance, UV resistance, etc.

Uses – accelerators, gluing, filling

Cyanoacrylate is a strong glue, particularly when used to bond non-porous substrates or those that contain minute traces of water. It is also very good at bonding body tissue, and while this can be a bothersome (or even dangerous)



side effect during everyday use, some varieties are used in medical applications.

Curing (polymerization) is triggered at the interface of the glue to the material or substrate and then proceeds into the glue, as long as the conditions are right. In a thick layer, the conditions in the centre may not be suitable, where it may remain uncured. This means that thin glue sections are best – less than a ¼ mm.

Turners like CA glue because it sets quickly and then can be cut or sanded. Very few large pieces of wood are crack free, so CA glue allows wood that a cabinet maker would put on the fire to be turned. Fill the cracks with wood dust and then apply thin CA glue such as Magic Wood. Narrow cracks can be reinforced and soft wood strengthened to improve the mechanical integrity of a piece. Spigots for gripping in a chuck can be reinforced with a layer of CA glue.

Bear in mind the type of finish on the wood, as CA glue can spoil the appearance of some woods, but not be noticeable on others. It is best to apply it to cracks while turning down to size, so that any surface staining is removed. It obviously penetrates more into end grain and that is where cracks are more likely to be found, so bear this in mind when refining the final shape of the piece. You may want to experiment with glue and the finish you plan to use to see if it likely to spoil the appearance.

If applied to cotton, cyanoacrylate undergoes an exothermic reaction rapid enough to cause minor burns if spilled on clothing, although this reaction is not powerful enough to be noticeable unless it involves more cyanoacrylate than any non-commercial use would reasonably call for. You will notice a similar reaction with wood dust or shavings that are also essentially cellulose. The large surface area and residual moisture promote rapid polymerization and emission of heat.

CA glue has a low shearing strength, which has also led to its use as a temporary adhesive in cases where the piece can easily be sheared off at a later time. Common examples include mounting a work piece to a sacrificial glue block on a lathe and also tightening pins and bolts.

One non-adhesive use for CA is as a forensic tool. Fumes from warmed CA can develop latent fingerprints on surfaces. The invisible fingerprint residues react with the CA fumes and atmospheric moisture to become visible and can then be recorded. This technique was shown in the films [Beverly Hills Cop II](#), [National Treasure](#), and frequently features in the television series [CSI: Crime Scene Investigation](#) and its spin-offs.



CA glue doesn't bond well when it is cold, ie below 10 °C. At room temperatures, to speed up bond and improve gap filling, an accelerator can be used. These are usually in the form of a liquid that is sprayed onto the glue or one surface before the two are put together. Even water can serve as an accelerator. Remembering that a change in pH can cause polymerization to start, a simple solution of bicarbonate of soda in water can work as an accelerator. Other accelerators may contain isopropanol, heptane, acetone, perfluorocarbon or propylene based glycol ether. Most of these are polar solvents, which seem to disrupt the polar arrangement of the monomers, triggering polymerization. There are a variety of formulations and applications of CA, so different combinations may work better than others.

Low temperatures cause CA to become brittle. CA bonds can be weakened (allowing disassembly) by placing a glued object in a household freezer for several hours.

CA has its limitations. It is not as strong as epoxy – it can be brittle and doesn't work well with oily woods. Its main virtue is its quick setting time, improving productivity.

Continued next month...