



Crosscut

Newsletter of the Witwatersrand Woodworkers' Association
PO Box 411346, Craighall, 2024

◀ Toys, toys, toys – donated at the Xmas braai

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Next General Club Meeting on Wednesday, the 14 December 2011 from 18h00 at the WWA clubhouse at REEA. Bring and braai. Quiz on woods and tools. Tool swop shop. First meeting of 2012 will be the second Wednesday of January.

Next Turner's monthly meeting is on Monday, the 5th December 2011 at 18h00 at the WWA clubhouse at REEA. Informal meeting with a demonstration on the use of the skew chisel by John Speedy. Boerewors rolls will be provided. The first meeting of 2012 will be the first Monday of February.

News

Turner's Meeting

Ari Mansur showed how to build up bowls from rings cut in a single plank. By choosing the angles correctly, Ari can make up conical bowls with a variety of patterns. He showed us how to visualize the end result from a plank laminated with contrasting woods. Some eye-catching patterns are possible from simple arrangements of different woods.

Chris van Heeswijk presented Chinese Elm (*Ulmus Parvifolia*) as the wood of the month. Chinese elm is a common street tree, that originates in China, Japan and Korea. It is now widely distributed throughout the world, to the extent where it is regarded as an invader species in some places.

Main Club Meeting

Greg who owns Cape Wooden Windows gave an entertaining talk, filled with anecdotes on his experiences with wood in the joinery and architectural woodworking business. He has experience with many African hardwoods and their uses. He expressed concern about the over-exploitation of hardwoods in Mozambique as well as elsewhere, with large quantities being exported to the East. Greg mentioned a book that he refers to for information on wood is "Handbook of Hardwoods", 2nd Ed, published by the British Government, ISBN 0-11-470541-0.

REEA Foundation Christmas Market. 03 Dec at REEA from 9h30. Stalls, food, books.

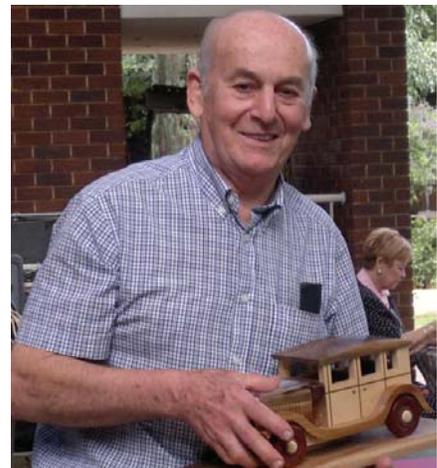
Organised by the Craigpark Ratepayers in benefit of REEA. You will be able run a stall to sell, if you wish. For more information contact: Lynne on 083-226-5228 or 011-4470141 or Daniella on 072-207-8196 or 011-442-7031 or Deona on 011-788-4745



Club Notices:

Year end braai. This took place last Saturday, the 26th November at Greenside High School. The meat was ably cooked by Costa and Rick, the weather held off and an enjoyable afternoon was had by all. Well done to the club committee and the volunteers on day, including the Bullivant family, Jackson family, Peter Middleton and John Conn and many others for putting together the annual event. Barries (See above right) made a model truck for a floating trophy for the "Toymaker of the Year". This was awarded to Eddie Marchio in recognition of his work over the past few years. See right. (Thanks to Steven Barrett for the picture.) ▶

Eddie estimated that about 400 toys were made and donated by members at the braai. These were gratefully accepted by Daphne for the crèches and pre-schools that she supports on the West Rand.



The following suppliers contributed prizes to the raffle, as part of the fundraising for the braai:

Academy Brushware	FEW	Leuco Tool Industries	Somta Tools
Afmit Tools	First Cut	Maple Street Timbers	Spectra Spray
Asax Agencies	Gedore Tools	Matus	Sprayon
Austro	GPC	Metabo Power Tools	Stanley Works
Benoni Mica	Hafele	Mistry's Pine Furniture	Startel
Benray - DeWalt	Hamilton Brushware	Pepper Mills for Africa	Stevens & Co
Black & Decker	Hardware Centre	Prosono International	Toolquip & Allied
BMG Technologies - Gorilla Glue	Harold Theunissen - WODOC	Qualichem	ToolsGlobal
Builders Warehouse	Harris SA	Richem	Topline
Bulldog	Hitachi	Ritachem	TransTool
Cape Windows	Hoffmann Woodworks	Robert Bosch	TritonLeo
CCL	Home Handyman	Ross Tools	Vermont Sales
CGR Agencies	HP Will	Rutherford	Webco
Country Woods	Ingco Power Tools	Saint Gobain Abrasives	Woodfinish Management
Disa Hardware	Irwin Industrial Tools	Sams Creations	WoodStar
Eurasia	Klingspor Abrasives	Shield Chemicals	
Fevicol	Lasher Tools	Skillcraft Agencies	

Werner Heise mentioned that Tibor Penzes died at the beginning of November at age 72. Tibor, who some of the early members may remember, lived in Parys.

Saturday Workshop. Ken Bullivant previously held the Saturday workshop at the clubhouse, but when we moved from Helpmekaar, he decided to move it to his house in Boksburg. Currently 5 of our members attend these meetings and more are welcome. The location is 13 Franklin Avenue, Comet, Boksburg on the last Saturday Monthly – possibly changing to 2nd Saturday from 09:00 to 12:00. They decide on an annual project and work throughout the year making it. They also make toys, several of which were displayed at the braai, and individual projects are discussed and problems solved. Contact Ken on 082 809 0020 if you wish to take part.

Please Note:

Toymakers. The toymakers meet on the first and third Mondays of every month, at 09h00 till 12h00 at the clubhouse. **The last toymakers meeting is 21st November and we restart on the first Monday, 6th February 2012.** Contact Eddie Marchio on 011-678-8062 or renato AT 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. **The last meeting for 2011 will be the 7th December. We will resume on the 18th January 2012.** Contact Winston Klein on 011-674-1513 for more information.

Some of the toys donated at the braai.





Advances in Grinding Technology for Woodworkers - continued

Trevor Pope

Alternatives to Grey Stones

Variations on Aluminium Oxide (Al_2O_3) – white, pink, red, and blue wheels. Different formulations of Al_2O_3 in different colours have different advantages. These are small differences, and you may not notice the differences in practise.

White wheels are Al_2O_3 with very little ceramic binder, so they are very friable, which means they wear away rapidly with use, and are not inclined to glaze up. They are “cool” grinding, and less liable to burn edges. They do need more frequent dressing.

Pink and red wheels have chromium oxide blended in to increase the toughness of the grains, so they wear less than white.

Blue wheels such as the Norton Globalforce (SG) wheels are so-called micro-crystalline wheels. These were mentioned last month – they are also available from other sources such as www.peterchild.co.uk They are claimed to be cooler cutting than white wheels and last up to 5 times longer

Silicon Carbide. SiC wheels have the same structure as Al_2O_3 wheels – an open ceramic bonded matrix of SiC grains. The main difference is that the SiC grains are harder. Known by the Norton trade name of Carborundum, These wheels are usually green. Even though they are shown on the same line as Aluminium oxide (Al_2O_3) in the Mohs table, in practise, SiC is sufficiently harder to make a difference. SiC wheels tend to glaze up when grinding softer



materials such as steels because the lower pressures do not displace the worn grit. Wet/dry or so-called water papers are made with SiC grits to make them harder wearing than Al₂O₃.

Diamond.

Diamond is the hardest natural material known and is positioned at 10 on the Mohs hardness scale. This means that only diamond will scratch diamond, and diamond will scratch everything else. Diamond wheels and plates consist of a grit bonded to a metal base using an electroplated metal such as nickel. The size of the grit determines the grade. These products are expensive, but given the extreme hardness of the diamond grits, have a very long life, if used correctly.

Diamond plates can be used to flatten Al₂O₃ stones. Grades of diamond plates offered are typically Coarse (220 grit, 60µm), Medium (325 grit, 45µm), Fine (600 grit, 25 µm) and Extra Fine (1200 grit, 9 µm). The extra fine grit gives a high quality edge that will satisfy most people. The next stage is 2000 grit equivalent abrasive, which is available on special order. 2000 grit can also be had as a ceramic stone, Wet and Dry paper, or a Japanese Waterstone, if you need it but most people won't need to go this fine.

A variety of smaller diamond plates and files are offered for sharpening bits such as Tungsten Carbide (WC) router bits. Diamond coated bits are also offered for Dremel type tools, discs for angle grinders and core hole cutters for masonry, at very reasonable prices these days.

Diamonds can be used cutting or grinding almost any material, including tungsten carbide. There is one exception – high speed cutting or grinding of steel. Because the carbon in diamond is soluble in iron at the high temperatures and pressures found right at the cutting edges at high speeds, the carbon in the tool dissolves into the iron substrate of the work-piece, so abrasive wear becomes unacceptably high.

So don't use diamond for high speed machining of steel, use cBN (see below).

(Despite advertising by the jewellery trade, diamonds are not forever – they are extremely durable – but there are conditions when they deteriorate rapidly – high temperatures – above 400°C should be avoided.)

The 200mm diameter wheel on the right is suited for fitting to a Tormek, which is a slow speed grinder. Its selling point is that it does not require truing or dressing. One example is from T&J Tools (See

<http://www.mamut.net/controls/shop/shops/12/8/default.asp?wwwalias=TJTOOLS&gid=47>) at £165-. Peter Child also offer one.



In the early days, diamond dust left over from cutting and polishing of natural diamonds was used for abrasives, but these days, most of the grits used are of synthetic origin. Synthetic diamond grits have more consistent properties and sizes and are readily available. The grits are attached to the substrate, such as a cutting disc by electroplating, such as with nickel. The nickel is relatively soft, so it wears away exposing the diamond grits to do the cutting.

CBN

Just below diamond on the Mohs scale, we find cubic Boron Nitride between 9.5 and 10. cubic Boron Nitride (cBN) describes the crystalline form of Boron Nitride. With hardness just below diamond and with superior heat resistance properties, cBN is able to machine ferrous metals, without the wear problems that diamond has. For this reason, cBN wheels are being offered for high speed grinders for machining steel. The cBN grit is embedded in a plastic substrate – a so-called resin wheel or electroplated onto the surface like diamond wheels. The example on the right is offered by T&J tools (See

<http://www.mamut.net/controls/shop/shops/12/8/default.asp?wwwalias=TJTOOLS&gid=47>) at £117-. It is 150mm diam x 25mm wide and suitable for direct fitting to a "high-speed" grinder. High speed means 2800 rpm.

Peter Child offer a similar product in 150 x 40 and 150 x 20 sizes at £110- and £81- respectively. (See

www.peterchild.co.uk)

The cBN wheels have the advantages of extreme wear resistance and dimensional stability of diamond wheels, but they are intended for machining hard ferrous metals.

They have a flat face on the side as well as the circumferential surface. They are made very precisely, so the exact bush to fit your grinder shaft must be ordered.

There is only a single layer of cBN crystals, so you can't true up the wheel by dressing it like you can with a conventional wheel! Apparently, because they are so accurately made and balanced, there is almost no vibration. cBN wheels are not recommended for materials other than hard steels. Softer materials such as mild steel and some stainless steels can be problematic, as they can be inclined to clog up the

gaps in the grit and removing them is almost impossible. You can't dress the glazed surface away as you would with a grey wheel, because you would remove the single layer of grit. Grind these materials with an ordinary grey wheel, as they are unlikely to be heat sensitive. Because the grit layer on a cBN wheel is very thin, rough treatment with a sharp edge can remove the grit layer, so gently does it.

