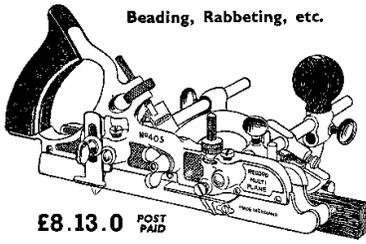


RECORD Multi-Plane

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August 2006

Crosscut

Newsletter of the Witwatersrand Woodworkers' Association

PO Box 129, Parklands 2121

Ad from the 1950s

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Editor: Trevor Pope (tpope@iafrica.com). All written content and opinions are those of the editor, unless otherwise attributed. © Copyright reserved.

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

Clubhouse Open Day on Wednesday, the 9th August from 12h00 to 15h00. The committee takes great delight in inviting you our Grand Opening, to spend some time with us to see our new clubhouse. It is very much a work-in-progress, but we have moved in and we are operating normally again. There will be a gallery of turned and other work to see (some for sale). Old tools will be for sale, and there will projects on display. Boerewors rolls and drinks will be on sale. Families are welcome. The REEA nursery will also be open. See the map below for directions.

Next Turner's monthly meeting is on Monday, the 7th August at 18h00 at the new WWA clubhouse at REEA – see map below. John Speedy will be doing a demo on how to set up a router onto a lathe to cut spiral slots/ grooves into platters, bowls and lids.

News

July General Club Meeting. Dennis Lock (from the East Rand Woodworkers) gave a talk on lessons learned in building a kitchen, which was most interesting.

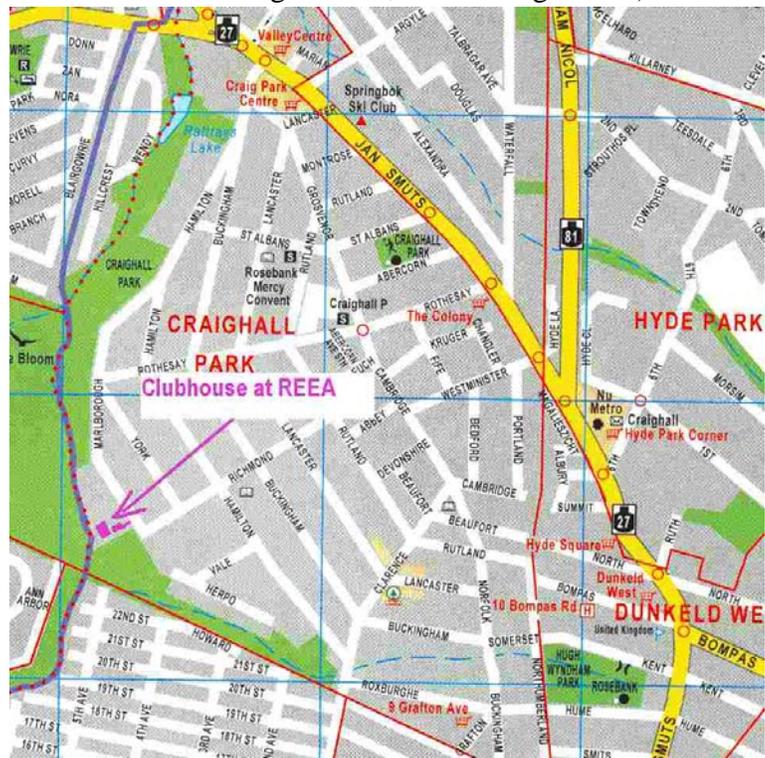
July Turners' Meeting. Chris O'Connell demonstrated a bowl saver. (A bowl-saver is tool that fits onto a lathe to cut out concentric bowls from a single blank, minimising waste.)

From the committee:

New Club Premises. A map showing the location is on the left.

APPEAL FROM THE CHAIRLADY

For our Grand Opening we are planning quite a day and are looking for some additional sponsorship from all our members. I know that many of you take Hardware Centre's motto to heart that '*He who dies with the most tools, wins*' but if you have any tools in your workshops that you no longer use for whatever reason - replaced/duplicated/etc, please consider allowing us to sell them on my stall. Either, a donation, or perhaps a 50/50 split between the seller and the club, any contribution would be very gratefully received.



On another matter THE PROJECTS. The 9th of August is only two weeks away and a lot of work still needs to be finalized. Please try and complete what ever is possible as soon as possible. If you are running into problems I would appreciate it if you could let me know so that we can try and rearrange our resources

Members are asked to bring items to show on the gallery. Turned pieces and other items such as boxes and clocks, even furniture will be most welcome. If we run out of space on the display stands, we will use the benches. If you want to sell items at the open day, please make tags to identify the items with a price. Items without tags will be presumed not to be for sale. To ease the administration of the sale, our treasurer Glen suggests that you make a three part tag. When buyer decides to buy, two parts are taken to Glen who will receive payment and keep one part. The other part will be stamped and the buyer can then take ownership of the item at the display stand. The allocation of the proceeds of the sale is at the discretion of the seller – the whole or only a portion can be donated to the club.

Use of machines. We hope to arrange some fixed open days every month, as we had before at the old clubhouse, when members will be able to use the workshop and machines. This will be under supervision. We will need volunteers who will be suitably trained at a course to be arranged. This will be discussed at the next meeting, so please volunteer.

Beginning Turners Classes. To make the turning courses easier to schedule, the turner's committee proposes that we break up the curriculum into small modules. You will then be able pick out the ones that interest you.

The Introductory Course is a single morning, and is aimed at people who have not turned before. It is adapted from a presentation given at the 2005 congress. In this course, you will learn about the basics of a lathe, sharpening, and about a few tools and their uses. You will rough out a cylinder of wood using different tools and then make a tool handle with a fitted ferrule.

We would like to limit the course to four people at a time, to allow a lathe for each person. The first class is full – it will happen soon after the clubhouse is ready, on a Saturday morning. If there is interest, more introductory courses will follow. More advanced courses will be scheduled in due course.

Woodpro and Austro Exhibitions. Interbuild Africa takes place at Nasrec from the 26th to 29th July, 09h00 to 17h00, 09h00 to 15h00 on Saturday. This includes Woodpro., as well as other building related exhibitions.

Austro used to exhibit at Woodpro, but it became so expensive, that they decided to set up their own at their premises in 1125 Leader Avenue, Stormill. You can attend from the 24th to 28th July, 09h00 to 18h00, and Saturday the 29th July, 08h00 to 14h00. If you are into the industrial side of wood working with big machines, both may be worth a visit.

For Sale:

Kity Spindle Moulder model 627 . 20 mm shaft , 1,1 kw motor , tenoning carriage , assorted cutters. Excellent condition. R5000 . Frans Joubert 011 704 2846/084 574 3500.

Wanted:

Can somebody assist with making a car bed for my son? santosh.komal@liberty.co.za

Oils and Varnishes for Finishing Wood -- continued

Trevor Pope

Varnishes.

Basically, a varnish is comprised of three elements:

- A drying oil,
- a carrying solvent and various resins
- and oils/waxes that will depend on the end use.

1. The drying oil behaves as discussed last month.
2. The solvent assists the application and penetration of the varnish. It was traditionally natural turpentine that is distilled from pine trees, but nowadays mineral turpentine (white spirit) is used. Water based varnishes are becoming more common, as they have safety and environmental advantages, but they may not be organic solvent free.
3. Resins. What mostly differentiates varnishes from each other are the added resins and oils and waxes. As the varnish dries, and polymerisation takes place, these additives become chemically bound into the film. They modify the properties of the final film, providing a mixture of hardness and flexibility. Resins used include amber, copal, rosin and these days mostly alkyd and polyurethane.
 - **Amber** is a fossil resin that was once the gum of a tree that has been preserved for millions of years. It is not used much today.
 - **Copal** and **rosin** are resins obtained from trees such as pines.
 - **Alkyd** resins are created chemically using oils such as sunflower, safflower, soybean, fish, corn or tall oils. These are cooked with acid anhydrides to create polyester molecules. They are widely used in paints and varnishes. There are a variety of sources and levels of quality that are chosen to suit the application.
 - **Polyurethane** resins are also created chemically. There is a wide range of polyurethane resins, with some carefully designed for use in coatings. Single part polyurethane relies on air-drying in common varnishes. There are also two part paints that require mixing before use, but are exceptionally hard and durable.

By selecting the ratios of oil and resins, the final properties of the finish can be determined. So-called “long-oil” varnishes contain more oil and are more flexible and weather-resistant when set. “Short-oil” varnishes contain more resins to give a higher gloss, but are less elastic and better suited to interior applications. For outdoor applications, resistance to ultra-violet light is important, so an inhibitor can be added, however this is only partially effective. Pigments are the only really effective UV protection, and then we are talking about a proper paint! Plan on regular recoating of varnished wood that lives outdoors, various adverts notwithstanding.

Most varnishes contain alkyd and/or polyurethane resins. Alkyd varnishes are clear and dry to a flexible film that can be easily over-coated, whereas polyurethane varnishes are much harder and more durable. With polyurethanes, you need to be careful about over-coating – if you don’t follow the instructions, you can have adhesion problems between layers.

The alkyd or alkyd/polyurethane varnishes are good general-purpose varnishes, combining strength, flexibility and ease of recoating. The polyurethane varnishes are more suitable for

high-wear surfaces, such as counter tops and floors, but can be inclined to crack and peel. Adhesion is not as good, and careful application is required to avoid problems.

After application varnish will tend to smooth out or “flow” to level out brush marks and form a smooth, shiny surface. Some varnishes have additives to enhance this. If a shiny finish is not desired, silica is added to give a matt finish. This is inclined to settle out, so be sure to stir matt varnishes properly before application.

Spirit Varnishes and Lacquers are finishes that are carried in a solvent and don't usually set irreversibly on application. Examples of these are **shellac** and **nitrocellulose lacquer**. Shellac contains a resin that is dissolved in alcohol (what we would call methylated spirits in South Africa). Shellac is used for so-called French polish. Both set after evaporation of the solvent, which is rapid, so application is fast, and suits production well. However, both can be removed by applying the carrying solvent. This is in contrast to varnish, which is immune to turpentine once set.

Some lacquers are derived from natural sources such as the lacquer tree. More commonly, nitrocellulose lacquer is made from cotton reacted with sulphuric and nitric acids, and dissolved in lacquer thinners. It is used in sanding sealer. Shellac and lacquer can produce wonderfully clear, polished finishes, which is why they are popular. However, for general use they are not as durable as varnish.

There are some lacquers that do set. **Pre-catalysed lacquer** has a drier added that causes hardening after application. Drying is slow but the resulting finish can be quite durable. **Catalysed lacquer** is a two-part mixture. It is mixed with a hardener before application. Once dry, it is hard and durable, as well as having the clarity of a lacquer. It is impervious to most solvents. It is very popular for commercial furniture, and is usually sprayed on.

Wax is a solid at room temperature, but it can be softened by heating or adding solvents, to make it easier to apply. There are a large number of natural and synthetic waxes. In woodworking, we usually encounter beeswax, carnauba and paraffin waxes. Furniture polish and shoe polish are blended from a combination of these waxes and a solvent added to soften them. Beeswax is soft, paraffin wax is firm and carnauba wax is hard, so by blending these, the right properties for the application can be realised. After application, the solvent evaporates and soaks into the material such as leather, so the wax becomes harder. Wax can be removed by applying the same solvent, so it is reversible finish. This means that for antique preservation, wax is OK. Applying the wax may modify the existing finish (including all the accumulated grime) if it is not resistant to the solvent used in the wax, but otherwise, it is very safe. Wax is not a very durable finish – it is water resistant, but not water proof. To remain effective, wax needs to be reapplied periodically. To prevent rust on tools and machinery, cheap floor wax works really well. It is easy to apply and completely reversible, so even for antique tools, you need have no worries.

Some consumer furniture waxes contain silicone for a nice shine, but avoid these, as silicone can contaminate finishes causing non-adhesion, and it is very difficult to remove. Don't use oils and waxes that contain silicone on your tools and machinery as they may contaminate your work pieces and cause finishing problems.

(Sources: Wikipedia, Fine Woodworking articles, American Woodworker article, Practical Woodworking article.)