◄ Phil Irons

March 2016

Crosscut

Newsletter of the Witwatersrand Woodworkers' Association

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Next Turners Meeting on **Monday, the 7th March 2016** from 18h00 at WWA clubhouse at the Living Link Hall. The homework for this meeting will be a turned Finial. Herman will be donating a bottle of wine for the best finial on the day. The subject for the meeting is Carbide Tipped Turning Tools with live demos. Will members who have Carbide Turning Tools please contact Herman to enable him to set up a plan of action for the meeting. Wood of the month – Coral Wood

Next Meeting on **Wednesday, the 9th March 2016 – General meeting** from 18h00 at WWA clubhouse at the Living Link Hall. 'Haal Uit en Wys" PowerPoint Presentations by Matt Hoffman/Clive Stacey/Members

News

1st February 2016 - Turner's meeting.

Herman spoke about the AWSA congress that he attended in September 2016 in Cape Town. Phil Irons, (See http://www.philironswoodturning.co.uk/) who has visited South Africa before, was the main presenter. Phil also conducted some master classes that Herman attended. Herman showed pictures of the congress presenters, instant gallery and demonstrations. He shared some of his insights he gained from Phil Irons and what he gained from the master classes. Herman showed pictures of a technique that Phil demonstrated, that probably falls into the category of "Don't try this at home". Phil used surgical spirit to "flambe" a green vessel in order to dry it enough for finishing! Some of Herman's pictures can be found at www.treesbankturnery.net

Suggested project for the next turner's meeting is a turning with a finial adornment. This can be any design that incorporates a finial such as a box or urn.

10th February 2016 - Club meeting.

Wood of the month – Karee. Chris told us that the family of Karee trees, of which there are many species, was previously known at Rhus. Now they are known as Searsia, after a professor Sears at Harvard. The particular species that Chris spoke about was Searsia Pendulina, also known as the White Karee. The tree has been naturalised in the USA, where it is called African Sumac. The wood is hard, suitable for turning and furniture making, although it is rarely available in suitable lengths for the latter. It is pale when harvested but may turn deep red on exposure to light. The individual varieties can be difficult to distinguish, and they do hybridise, which complicates matters further.

How to cope with wood dust. Herman spoke about the hazards of wood dust in the workshop. He noted that most of the hazards of wood dust relate to occupational exposure, which is continuous exposure for many years. However, wood dust can still cause allergic reactions, so exposure to dust is best avoided. Herman discussed the use of dust masks and dust extractors. He showed some of his workshop setups and the problems and solutions he encountered. Some alternatives to a fixed installation were also discussed. A reusable dust mask from DustBeeGone.com was shown, however at $40, this is unfortunately out of most people's price range.

Disposable dust masks that include a frame and valve from Würth were mentioned as an alternative (Reflex FP2 mask). www.wurth.co.za

More on dust: If you Google dust control, and cyclones, you will probably come across Bill Pentz' web pages. Bill gives an excellent, factual review of wood dust control issues and his solutions to them. Bill developed serious heart and lung problems triggered apparently by an allergic reaction to wood dust. It was so severe, that he could tolerate almost no dust in the air without life-threatening consequences. This lead to him taking a no-holds barred approach to dealing with wood dust. He was unable to find any systems on the market that were effective in reducing dust to the levels that he could tolerate. He documents his journey and technical solutions on his web site, which makes for interesting reading. (http://www.billpentz.com/Woodworking/Cyclone/index.cfm)

One of his basic assumptions is that everybody has a fixed duct installation for dust collection in their workshop. To make this work, and ensure that the pipes don't block due to dust settling out, he works on minimum air flow velocities which are quite high. The air volumes he works with are also high. This leads to a large capacity system, with a 3 to 5 hp motor, which is costly to install and to run. For the average hobbyist, such a system is probably overkill. One or two smaller systems with flexible hoses will probably do the job for a hobbyist. However, the advice on filtering is well worth following. His advice to exhaust the dust after separating the chips is sound in our climate, providing you can do so without creating a nuisance or impacting on other people. Effective filtering, even with a high-performance cyclone of his design is difficult, as most filters that remove dust down to 1µm soon clog up.

Club Notices

Piet Smith (Peppermills) and Simone van Vuuren (Pens) with be demonstrating at the Albertskroon Workshop on Saturday 12th March.

The AGM will take place on Wednesday 11th May 2016 at The Living Link.

There will be no Turners and Toymakers meetings on Monday 2nd May.

Turners jackets. These are available for collection at the club meetings. Some of the name tags were not supplied and material for pockets is still outstanding – these will be collected and be available at the next meetings.

From the committee:

1. Members are encouraged to bring friends/neighbours/relatives to our meetings with the view to increasing membership.
2. Members are requested to advise the committee of demos/subjects they would like to see covered at the Saturday Workshop meetings.
3. We have secured the services of the local security company in Albertskroon to be present when we lock up in the evening – on this basis we can commerce Wednesday Workshop meetings subject to a member volunteering to open the workshop and supervise the meetings.
4. DVD's of Ernie Campbell's Workshop 1 book are ready to be handed out to new members (those who have joined the WWA during the last 12 months) other members may purchase them (to cover costs) at R10.00
5. Members are encouraged to donate items they have made for raffles at our meetings.

Association of Woodturners of SA – annual congress 2016.

AWSA has proposed a date for the 2016 annual congress on the long weekend of the 6th to the 9th of August. They have been in contact with the well-known Glenn Lucas as a possible visiting turner. As Cape Town hosted the last two symposia the AWSA committee has decided to offer this year's one to be held and organised by another willing region. George has been mooted as an alternative located at the former Saasveld forestry college.

Eric Thornton can be contacted on Ph +27(0)215583708 Fax +27(0)215591781 Cell +27(0)824654237 E-Mail notnorth@mweb.co.za

Spring Challenge. Set down for Sat, 10th September at Albertskroon. As before, there will be two competitions, a Milking Stool made beforehand and a turning challenge on the day, something that can be made on the lathe in a few minutes – still to be decided – possibly an egg cup. (Google "egg cup races") Last year, it was a honey-dipper. Steven Barrett will co-ordinate. More details to follow.

Regular Events:

Toymakers. The toymakers meet on the first and third Mondays of every month, at 09h00 till 12h00 at the Albertskroon workshop. Meetings will be cancelled if they coincide with a public holiday. Contact Eddie Marchio on 011-678-8062 or rm22 AT mweb.co.za for more information.

Wednesday workshop. 1st and 3rd Wednesdays, from 17h30 to 20h00 at Albertskroon. Contact John Allen on 083 457 4801 or Clive Stacey (See below)

Ken's Saturday Workshop. Ken Bullivant holds a Saturday workshop at his house in Boksburg. The location is 13 Franklin Avenue, Comet, Boksburg on the first Saturday of the month from 09:00 to 12:00. They decide on an annual project and work throughout the year making it. Individual projects are discussed and problems solved. Ken also offers private lessons too. Contact Ken on 082 809 0020 if you wish to take part.

Friday Morning workshop - Winston Klein will be convening a workshop at the Albertskroon work shop on the 1st and 3rd Fridays monthly from 09:00 t0 12:00. Contact Winston at 072 553 5045 or kleins AT iburst.co.za (Winston previously ran the Wednesday workshops at the clubhouse until Grant took over.)

SPIRIT OF THE WOOD - WOODTURNERS

Offering Woodturning lessons, One-on One Training, Classes and Club, Willing to assist persons with limited physical/intellectual abilities. Contact Johan Kramer on 083 251 0183 or Johankramer300@gmail.com

Saturday meetings

1. Second Saturday of month - Eddie will open the workshop – 011 678 8062 rm22 AT mweb.co.za
2. Third Saturday of month – Clive will open the workshop – 083 407 8008 stacey AT netactive.co.za Clive will also open the workshop during the week "BY ARRANGEMENT"
3. Fourth Saturday of month – Graham will open the workshop – 082 900 0242 grahamcr AT mweb.co.za

Please can the conveners complete the attendance register on the bar counter, so we can gauge attendance?

Gluing and screwing – is it enough?

Glued and screwed joints are widely used for simple workshop furniture, but are not always accepted for fine furniture. Used correctly, they are perfectly strong, even if they are not always aesthetically pleasing. Recently, I came across a table where glued-and-screwed was not up to the job. I was asked for advice on the repair of a friend's coffee table. One of the legs had come off.

The table was made by Fechters in Knysna, reportedly about 40 years ago. The wood appears to be Australian Blackwood (Acacia

Melanoxylon, which is quite similar to Stinkwood (Octea Bulata) in appearance.

The picture shows the legs which are cantilevered out from the two central columns. The legs are quite substantial, but inspection of the piece showed that the leg to column joints were inherently weak, and poor execution had made matters worse. You can see from the pictures that the leg-to-column joints are likely to be a point of stress even if executed correctly. There is a lot of leverage exerted on the joint from normal loads on the table. The end grain of the legs was glued to the side grain of the column, and reinforced with two screws through the column into the end grain of the leg. To make matters worse, the fit of the joints was poor with a significant gap in the centre. In addition, it appears that the column was prefinished with an oil finish, prior to the legs being attached, and the glue surface was not properly masked off.

When the table was brought in for repair, one leg was off, a second was loose, a third joint was cracked, and only the fourth was still sound. The picture shows the glued joint face of one leg – not much glue contact area.

Fortunately, the screw holes were covered with neatly made plugs which were easy to prise out. The glue used appears to be Cascamite, which is a water-proof glue with some gap filling properties. It is also quite brittle, so a sharp knock was all it took to dislodge the plugs. With the plugs removed, and the screws withdrawn, the loose two legs were removed. A light tap with a mallet was all it took to dislodge the fourth.
Upon inspection of the glued joints it was apparent that a mismatched radius between the column and the ends of the legs meant that a significant gap appeared in the middle of the joint. The gap was only partially filled with glue, so the actual glued surface was only a fraction of the joint area. The end-grain to side-grain joint was thus further compromised by the reduced glue area.

How to repair the joints and ensure against future failure? It was apparent that regluing and screwing, even with proper mating surfaces would not be a long term solution, due to the end grain glue surface. Although screws provide additional reinforcement, this probably wouldn't be enough. Larger, longer screws may help, but a more substantial joinery solution was required. If this was a Shaker-made table, the legs would be joined to the columns with sliding dovetails.

It was decided to insert dowels. These would provide side grain to side grain gluing strength. Within the space available, it was decided to fit two 10mm by 40mm dowels in between the two screws. A custom-made doweling jig was made to suit the geometry of the leg and column. Using a scrap block of Ash, two 10mm drilling guides were inserted.
(The drill guides used are called drill bushes and made of hardened steel. They are available in a range of metric sizes from Toolquip, at about R50- each. They could probably be used to replace missing guide bushes in doweling jigs if you need them.)

Grooves were cut in the face of the jig to locate the ends of the leg and the column onto the jig, as well as holes to locate the jig to the existing screw holes. This was to allow holes to be drilled into the column and matching holes into the ends of the legs to locate the dowels.

With the jig clamped to the column, the dowel holes were drilled. Then the holes into the ends of the legs were drilled. This was done carefully as small errors would mean that the legs would not be straight. A ruler and level were used to line up the bushes to the parts.

The screw holes for the detached leg stripped when the joint failed. Also, it was not expected that the screw holes would line up once the dowels were in place, so all the screw holes in the legs were drilled out over-size, and plugged with 6mm dowels, glued in place. When the legs were refitted after the dowel joints were made, new screw holes were drilled. Standard drill bits were not long enough to reach through the column, so I dug out my longer drills, and these were almost long enough. (Long drills are available from Toolquip in common metric sizes – they are not used often, but are essential for deep screw holes.)

On each leg, the existing screws were 4.5 x 50mm. There was limited space for a larger screw in the upper screw location otherwise the screws would stick out, so the same screws were reused. A larger screw of 5 x 60mm was used in place of the smaller existing screws. The lower screws are the critical ones as they are in tension, directly in proportion to the loads on the table. The smaller ones were nearly strong enough, so it is hoped the larger ones will serve, together with the dowels. The picture shows the existing screws, with the bent one from the detached leg. The larger screw is shown above. You can see that the dowel holes are drilled. The plugs for the screw holes can be seen above the screws, with remains of glue still visible on them.

The old glue was cleaned off the joints and the geometry corrected to reduce the gap to a minimum. Once the screw holes were re-drilled, the screws were seated, lubricated with wax, prior to gluing. This was to check everything lined up prior to gluing. Trial dowels were used which are slightly sanded down so that they could

be inserted and removed by hand. The joint surfaces of the columns were scraped to remove the oily finish.
The end view of the leg shows the two 10mm dowel holes and the plugged and redrilled screw holes. The face has been trimmed using a plane and gouge to match the curvature of the column.

Once all the joints were trimmed and straight, the glue-up was done. The joints were disassembled, normal size dowels were coated with glue and tapped into the columns.
The legs were glued and then the screws inserted and tightened, pulling the joints closed. Due to the shape of the legs, clamping would have been difficult, but not impossible, so only the screws provided clamping. Normal white glue was used, and is expected to be strong enough.
Picture left below shows the trial dowels in place and the boundaries of the joint marked with a red marker, so that the surface could be scraped clean prior to gluing. A cabinet scraper was used to remove the finish prior to gluing.
The picture right below, shows the legs glued and screwed onto the column and the plugs reinserted with a spot of glue to hold them in place. Some masking tape was applied below the joint lines to make dealing with glue squeeze-out easier.

Although the leg joints are now much stronger, it was suggested that the table be treated with care, as the joint design is not inherently strong.