



Crosscut – February 2026

Crosscut

Journal of the Wits Woodworking Association

Toy made and donated at the 2025 braai ◀

Secretary: Kenneth Jackson secretary@wwa.org.za Editor: Trevor Pope tpope@iafrica.com
All written content and opinions are created by the editor, unless stated, and are human generated. © Copyright reserved. Go to www.wwa.org.za for back issues of Crosscut.

Woodturners - Monday, the 2nd February 2026 - from 18h00 at **Made in Workshop**. To be advised.

Main Meeting – Wednesday, the 11th February 2026 from 18h00 at **Made in Workshop**.
Making custom profiles for picture frames using hand tools – Trevor Pope

Don't forget we have the members' free raffle for those attending meetings - prizes normally have a minimum value of R1, 000.00

News

Woodturners – Monday, the 12th January 2026 - from 18h00 at **Made in Workshop**. Herman demonstrated making spatulas on the lathe following a process that Richard Raffan demonstrated in this video:

Richard Raffan turning seven spatulas - https://www.youtube.com/watch?v=E19vV_DHEmI

Herman used Oregon pine banks precut on the bandsaw to reduce waste. He said the handle section should be 20 x 20mm, although his was a bit smaller. First, he turned the handle section to a cylinder and rounded off the end for comfort and appearance. Then shaped the outline of the blade on the

lathe. The final shaping of the blade was done on a belt sander mounted upside down the bench as shown on the right.



Main Club meeting – Wednesday, 14th January 2026 from 18h00 at **Made in Workshop**. Safely using the table saw video by 731Woodworks titled “NEVER Use a Table Saw Like This (Most Beginners Do)”. Graham stated that top of Sandton Clinic's cause for casualty room visits was table saw accidents. This video showed good practise for table saw usage.

<https://www.youtube.com/watch?v=ML7QHnJmyjs>



WWA

KITCHEN GADGET COMPETITION

WIN ONE OF THREE
HARDWARE CENTRE
R500 VOUCHERS



CATEGORIES
BEGINNER
INTERMEDIATE
ADVANCED



JUDGING WILL TAKE PLACE AT THE MEETING ON
11 MARCH 2026

MEMBERS AT THE MEETING WILL
JUDGE THE ENTRIES



messe frankfurt

Calendar of Events for 2026

Summer Challenge – Main club meeting at **MiW** on the 11th March, 2026. A competition to make beforehand and bring a wooden item for the kitchen. This can be turned or “flat-work” – cutting boards, spoons, rolling pins, salad bowls, pepper-mills, and trivets are examples of things you can make.



Please note that **Eco Timber Traders** has moved – their new address is 485

Boundary Road, Northriding, Randburg. (Off Malibongwe near Kya Sands.)

Hobby-X 2026 – Kyalami Grand Prix Circuit – 30 April to 03 May 2026

Reminder – New WWA Account number with **FNB** – **63026931287** – please add this to your beneficiaries list. Please make sure that your payment can be identified by adding your **name**, perhaps cell number and **reason for payment**. Annotations such as “annual subs” or “WWA shirt” without your name are not helpful – Anesh will not be able to trace your payment. Please note that the **Nedbank account has been closed**.

Access times for Made in Workshop for WWA members :

MiW access control for WWA members – all current paid-up members who have attended a meeting have been issued with a bar code sticker to be used to gain access. Please remember to bring your bar code, so you aren't delayed at the entrance.

MiW times for WWA members are as follows

Monday, Thursday, Friday and Saturday 9AM to 12AM. However please take note of the following: WWA members CANNOT just arrive at **MiW** and use machines unless they have booked them with **MiW**. This refers to the bookable machines such as the panel saw, thicknesser/planer, drum sander, spindle moulder as well as CNC machines of any kind. This applies only to the woodworking machines. The other machines require the purchase of a membership at the monthly (30 day) rate – which is a good rate anyhow. Machines such as the bandsaw and the Triton router table need no booking. Henry also requires that all the major machines may only be used if the WWA member is familiar and fully understands the importance of the correct and safe use of these machines. Speak to Graham regarding training and qualification to use machines.



MiW is a **Maker Space**, which means that members are able access the machines which are included in the list above. Access to the other machines and facilities is subject to additional fees as mentioned above. While **MiW** will provide assistance and training where necessary, members are responsible for providing materials and performing the work themselves. Members need to be skilled and competent to use the facilities to do the work. For example, if you wish to use a CNC machine, you will need to manually program the tool path on the machine or import it from a design tool that generates the tool path for you. There may be a steep learning curve, but that is part of the challenge.

Bookings can be made during office hours of 8h00 to 17h00, weekdays by contacting one of these numbers:
Henry – 083-269 9505; Josh – 083-768 7853; or Trenton – 081-365 6039

Schedule for Regular Events

1. Second Saturday of month at 9h00 at **Made in Workshop** – Herman – all things turning related – 083 631 0501 [hermanpotgieteresq AT gmail.com](mailto:hermanpotgieteresq@gmail.com)
2. **Show & Tell** meetings are held at Hardware Centre every Friday Morning at 09:30. All WWA members welcome. Contact Eugene on 0824953394 or eugene@antlerfin.co.za

This list is subject to change, so please consult your *Crosscut* each month for any updates.



Battery Operated tools

Trevor Pope

In the trade and professional user categories, battery operated tools have come of age. Only the most power-hungry tools are not yet available in cordless versions. Even small lawn mowers, edge trimmers, blowers and chain saws are available in cordless versions. These are proving to be quite adequate for smaller gardens.

For building site work in the UK, 110V AC tools were mandatory for safety reasons, and this is now changing to cordless, battery-operated tools. Very good cordless power tools are available at reasonable prices, and the bottom has dropped out of the second-hand corded tool market.



The down-side to the cordless battery-operated tool boom is the lack of standardisation of the batteries. Most battery packs are proprietary, with very few interchangeable between manufacturers. Lithium-Ion battery packs are much lighter, more powerful and have longer endurance than older nickel-cadmium and nickel metal hydride battery packs. However, lithium-Ion packs are more complex and also more vulnerable to abuse. To understand why this is so, it's important to understand how they work internally.

Most Lithium-Ion battery packs for cordless tools are made up of individual cylindrical cells connected as a string. There are different chemistries in the cells, so the exact properties of the cells do vary. Nominally, the cells have an open circuit voltage of 3.6V. As the cells are charged the terminal voltage rises towards about 4.2V per cell. As the cells are discharged, the voltage drops towards the cut-off voltage of about 2.5 to 3.0V depending on the cell chemistry. It is important to operate the cells only between these ranges to avoid damage and for safe operation.

Lithium-Ion cells have very high energy densities and most use inflammable electrolytes. The consequences of thermal runaway in cells are severe – fires that are difficult or impossible to extinguish. A quick Google search will show many examples of fires. In some situations, in confined spaces, such as onboard an

aircraft, these fires can be very serious. Cabin crew are trained to deal with these – usually caused by damaged cell-phone and power-brick batteries.

To safeguard the batteries, electronic circuits are used to protect the cells and manage the charging and discharging processes. The circuit is tailored to suit the battery characteristics. The parameters include the battery chemistry which affects the voltage profile; the thermal characteristics of the cells; their capacity and the actual configuration of the battery that is made of the cells.

A smaller power tool battery with a nominal voltage of 18V will contain five cells of 3.6V each. If the capacity is stated as 2.0Ah, this matches the individual cells' capacity of 2.0Ah each. This battery is a 5S 1P configuration – five cells in series (5S) in one string (1P). This picture shows a single string of cells with the electronic printed circuit board above the cells.

A larger battery with 36V 2.0Ah capacity will have ten cells of 3.6V in one string (10S1P). To get more amp-hours, more batteries are added in parallel strings. So, an 18V 5.0Ah battery will contain two strings of five batteries each (5S2P). And a really big battery, suitable for a lawnmower or chop saw for example, may be 36V 5.0Ah – two strings of ten cells (10S2P).

Batteries marketed as 20V are the same as 18V, the voltage difference is just marketing.



To properly manage and safeguard a battery, the electronics need to:

- Protect against over discharge. This can happen in two stages – cutting off the battery from further discharge, and then disabling the battery if the voltage drops below the safe limit.
- Protect against overcharging. This will disconnect the battery from the charge cycle once it reaches the top limit.
- Balance the cells. This is to protect the weaker cells from damage by over charging and over discharging.
- Prevent the battery from overheating – to prevent battery damage and thermal runaway, possibly even fire.
- Implement a proper charging cycle – to charge the battery rapidly, but safely and without compromising life time.

Ideally, the battery will have all these functions built in and programmed to match the actual battery cells fitted. However, this is expensive, so manufacturers put some functions into the charger and the machine, to avoid duplication and save money on the batteries. Manufacturers make their own design trade-offs. Combined with the physical form factors, connectors and legacy packaging issues there are a multitude of ways that batteries can be designed, which is what we see on the market at present.

Standardisation

The EU is trying to promote battery standardisation. Also, the US DoD is trying to standardise for procurement purposes.

Manufacturers have high margins on replacement batteries, so there is no incentive for them to standardise. They prefer to lock users into their own brands.

This is a good discussion on battery standardisation:

<https://www.large-battery.com/blog/the-truth-about-power-tool-battery-standardization-in-2025-industry-report/>

Bosch has two standardisation initiatives to try to reduce the options:

Bosch 18V Power for All Alliance and the **AMPShare Alliance**. Bosch has signed up a number of manufacturers (30 at last count), but most are not well known. These are 18V batteries with capacities ranging from 1.5 to 6.0 Ah. This picture at the start of the article shows all the brands currently signed up. Confusingly, not all Bosch batteries conform to the standard. Only the GBA 18V batteries from Bosch conform. Bosch also make 12V, 36V, 60V, 120V and 160V GBA batteries. Bosch also has PBA batteries aimed at the DIY market that are incompatible with the GBA batteries – voltages of 10.8, 12V, 14.4, 18 and 36V.

Metabo HPT MultiVolt and CAS System

This allows 18V and 36V tools with some interchangeability between batteries and tools.



The picture shows all the brands signed up to this standard. (None that I recognise...)

What about adaptors?

There are a range of adaptors that can be used to interface different power tools and batteries. I would be cautious when using adaptors because the battery protection circuits are not standardised, so you may be using a battery – tool combination where the battery protection is compromised. If you only charge the battery with the correct charger and use the adaptor to connect to another power tool for use, you should be safe.

Here is an example of an adaptor to use a Bosch battery with a Ryobi power tool.

Standardisation?

Very little, I'm afraid, and even the standards are confusing to me, particularly the Bosch product line. Fortunately, prices have dropped and some very good cordless tools are available, even though all the batteries are different.

