



NORTHERN DISTRICTS MODEL ENGINEERING SOCIETY (PERTH) INC.

May — June 2019

# Stars of Sandstone 2019 festival in South Africa

THE Stars of Sandstone Festival is an international festival showcasing heritage transport equipment: trains, traction engines and military tanks are shown in a working environment. If that is not enough, vintage aircraft, cars, motorcycles, steam lorries and even ox-wagons drawn by teams of oxen are on show.

Ken Austin and I were fortunate in being able to join the event during the preview week, which catered for enthusiasts and international photographers.

I volunteered to act as a guard and received appropriate training, receiving a certificate from the South African Rail Safety Regulator to boot.

The event is held by the Sandstone Heritage Trust, which owns, collects and restores equipment such as ex-South African Railways (SAR) 2ft gauge locomotives and some of the largest 3ft 6" gauge Garratts, which are hired out to other operators. Many industrial locomotives, such as the very pretty 4-4-0 Lawley locomotives, as well as the powerful NG (narrow gauge) Garratts were in use. In total there are more than 22 locomotives in use or under restoration on the site.

The property is a working farm, and much of the historic farm machinery is still in use. It is situated in the highlands of the Free State Province in South Africa, adjacent to the Lesotho border. The scenery is spectacular, with a background of high mountain ranges. Lesotho is with good reason known as the Roof of Africa.



The 'Mountain Wanderer' comprising two NG Garratts, heading for the hills. A Sentinel lorry and Chev tourer alongside in the background.

*More photos on pages 3 and 5*

The Sandstone farm has about 26km of 2ft gauge line and includes some steep mountainous sections — challenging to both the drivers and locomotives. One easy run of about 5km in length runs east to a balloon loop towards the Lesotho border. A steep return climb back to the Hoekfontein main station gave some trouble with poor adhesion in the wet conditions encountered on a few days. The Lawley locomotives in particular suffered here.

In the photo below, pink and white Cosmos flowers line the trackside, while across a deep river valley the Kingdom of Lesotho can be seen with the imposing Maluti mountains in the background.

In the opposite direction a steep and sharply curved mountain section even had the Garratts slipping on occasions.

From before sunrise, when photographers' special goods and passenger trains were run to catch the early morning light, until night time, when stargazing specials were run, there was always something to watch.

*(Continued on page 3)*

## Inside this issue:

<b>President's report</b>	2
Steel boilers	5
Steamfest 2019	6
My hobby dream	8
Meetings and outings	10
April run day	11
Soft soldering	12



## President's Report for April 2019

HELLO to all of you — I am a little surprised to be president and writing this report, but here goes.

Firstly I would like to thank Steve Briggs for the time he has spent on the committee and as society president. Steve put in a tremendous amount of time and effort and had a few difficult issues to deal with which he took on personally. Also thanks to Eileen for her support of Steve. I hope you are now both able to relax and enjoy our hobby some more.

The society has achieved a key milestone in having the new "Rules of Association" accepted by the government. We will soon issue each member with a printed copy of the rules (which were previously circulated to all members prior to the March special general meeting). A big thank-you goes to John Turney and Paul James for managing the passage of the rules through the society approval process and the subsequent submission.

John Turney has agreed to give short talks at monthly meetings on some aspects of the new rules and their impact on NDMES. If you have any questions regarding these, please ask.

Following the success of the March general meeting which was held on the morning of our Sunday club run day, we are planning to hold every second general meeting on the club run Sunday morning. We will keep the meetings short: Show & Tell items will be out on the track and on the veranda. We encourage members to bring along models or items of interest to show and discuss and/or seek help from the more experienced members.

You will have noticed that the secretary is sending out an agenda ahead of general meetings. Members who wish to raise issues at general meetings are requested to contact the secretary well ahead of the next meeting so your item(s) may be included in the agenda. Contact Paul James: [secretary@ndmes.org.au](mailto:secretary@ndmes.org.au)

The early agenda is a requirement of the new rules — it ensures that members can if necessary prepare for the forthcoming meeting. Urgent items will of course be addressed as they are raised.

As the attendances at Saturday mornings had dropped off dramatically in the last few months it has been decided to not open every Saturday morning, except for planned activities. We do plan a regular work-bee the Saturday morning *the week before* each monthly public run day to do a grounds clean up. The grounds are yours, so please put aside a couple of hours to help clear leaf litter, prune trackside foliage etc. to make the site presentable to the public.



**President's Report**  
By Andrew Manning

Access to the rear of the grounds is still being denied by Westside BMX. We have written to City of Stirling indicating our minimum access requirements. The City have responded and are working to encourage Westside BMX to allow access, all be it limited.

The committee have been working to pull together and update our various operating procedures governing the operation of the miniature railway for the public. The documents include descriptions, responsibilities and training for various roles including Driver, Duty Officer, Guard and Station Master. Also included will be records of those who are qualified to fill the respective positions. Most of these items have existed for a long time but are scattered through various files. We are also working on the NDMES braking policy and specific operating instructions applicable to our track.

After a great deal of debate and procrastination additional riding cars are now under construction. The braking system has been agreed, and will become the standard for all the society's riding cars. Harry Roser generously volunteered to undertake the construction and will progressively deliver them. Thank you Harry.

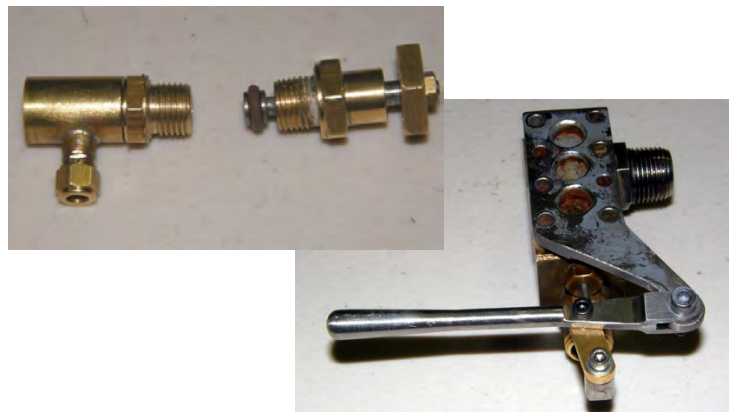
When the ground level track was completed, the last item on the long term plan for the site that had been established some 25 years earlier was completed. Great foresight and an amazing effort by current and former members.

There are still quite a few things that need to be tidied up, but where to next? Do we sit back and enjoy what has been established for us, or do we start thinking about the next 10 or 20 years? Let me have your ideas: what would *you* like out of the Society and its facilities into the future.

Time for me to get back to the workshop and turn some perfectly good bar stock into swarf!

Happy modelling,

**Andrew Manning**



The only Show & Tell exhibits at the April General Meeting were this O-ring valve and the linkage for a Caradoc steam tractor, presented by Andrew Manning. How about bringing in something you have made, a question you have, or a problem you've solved to liven up the meeting?

*Photos: Jim Clark*



## Stars of Sandstone 2019 (cont...)

*(Continued from page 1)*

A Sentinel steam lorry managed an impressive turn of speed, as did a Ford Model T open tray ute. It was interesting to see the Sentinel driver having to lie under the lorry to rake out the fire from time to time. Would not like having to do that in busy London traffic! Cab rides were freely available in the Sentinel, as were footplate rides on the traction engines. Alas, locomotive footplate rides were not possible as the Rail Safety Regulator took a strict interest in the rail operations and deemed footplate rides unsafe.

A newly restored locomotive, a Baldwin 4-6-2 built in Philadelphia USA in 1904, made its debut at the event after restoration. One of the SAR drivers, who used to drive it when it was in railway service, was invited to drive on the inaugural trip — a nice touch.

Air displays took place at intervals during the day, often flying at low level alongside the trains. Planes included a Tiger Moth and Harvards of Second World War vintage. Flights were available for the brave. (Not for me... I have a few locos to finish yet!)

For those interested in military vehicles, a military parade took place and Sherman and Centurion tanks, plus armoured personnel carriers from the military museum were put through their paces, with plenty of smoke, sound and dust. There were a good few military motorcycles on show too, including a BMW sidecar outfit. The Trust has close connections with the Military Museum in South Africa, which provided equipment for the event.

Prior to the mountain loop, the 2ft gauge line runs alongside the Vailima halt on the SAR main line from Bethlehem to Bloemfontein, where the giant Class 25 locomotives used to run. Farm produce used to be transloaded here. The more well-heeled train enthusiasts were smoothly transported to the site in sumptuous accommodation in the renowned South African Railways' Blue Train, which stopped at Vailima halt on the property for three days. Kept fed with first class cuisine, 5-star brandy and Cuban cigars in the lounge car after meals, they even had time to watch the trains too.

Not wishing to cash in our superannuation, Ken and I declined to take the Blue Train, but stayed in very reasonable and good accommodation off-site. We shared meals and a few beers with attendees, photographers and volunteers from all over the world, including loco drivers from Australia.

This was a magnificent event, hailed as the best steam photographic event in the world. The next festival will be in two years' time, and I hope to go again. Perhaps not in the Blue Train, but in the hire car with Ken.

*Article by David Naeser*



A Peckett 0-6-0 Tank—a surprisingly effective engine. Yours truly is in the floppy hat in the second carriage acting as guard.

Right: A Lawley 4-4-0. (Photo specially for Paul Costall, who is building one of these.)



Left: There were many full-size traction engines, working and on display.

Below:  
A line-up of military vehicles.



*Photos by Richard Morris, David Naeser and Ken Austin. Reproduced with permission of Sandstone Heritage Trust.*

See Sandstone website for further photos and videos:

<http://www.starsofsandstone.com/index.php/galleries/stars-of-sandstone-2019>

Also see an article in the latest Heritage Rail magazine by John Titlow, who stayed with us. Further information in:

<https://www.railwaymagazine.co.uk/5913/the-premier-heritage-festival-in-the-southern-hemisphere-stars-of-sandstone-2019/>

# AMRA Update 2019

IT is pleasing to note that members are in support of the coming Australian Model Railway Association exhibition where we as a society are given the opportunity to showcase aspects of our charter.

At our last March general meeting a participation roster was tabled for members to identify exhibits and their intention to assist with manning the display stand. Already several members have volunteered time to help set up, provide models and assist in manning the stand. Although preparation is progressing well, any members wishing to assist and attend are most welcome to do so by adding information to the roster.

This year we are looking at a wide variety of models and projects on display. These will include both static and working models and of course projects in various stages of completion. Other displays will include garden railway equipment and an undercover area set aside for traction engines at the front of the pavilion.

With a display area of 8 x 4 metres on the western wall and next to a large roller door, this should provide ample space including the ability to have vertical boilers and models in steam and also provide access for models running on compressed air.

At a recent meeting at AMRA headquarters, the importance of tagging all electrical equipment was highlighted, as was access to the exhibition area and setting up/taking down requirements. Entry for exhibitors will be via Gate 1. It was pointed out a club badge or suitable society identification should suffice for entrance and free parking. Members attending will be notified of the availability of entry passes in due course.

In conclusion, I look forward to a successful and well attended exhibition which will promote our society in the eyes of the public and possibly create some enquires towards additional membership applications.

**Event Coordinator — Paul James**

## Calendar of Forthcoming Events

<b>General Meeting</b>	Sunday	May 12	10:00 am	
<b>Club Run Day</b>	Sunday	May 12	9:00 am — 2:00 pm	
<b>Public Run Day</b>	Sunday	May 26	10:00 am — 2:00 pm	
<b>AMRA Exhibition</b>	Sat—Mon	June 1—3	Daily	<b>Claremont Showgrounds</b>
<b>General Meeting</b>	Friday	June 14	8:00 pm	
<b>Club Run Day</b>	Sunday	June 16	9:00 am — 2:00 pm	
<b>Public Run Day</b>	Sunday	June 30	10:00 am — 2:00 pm	

## Know your Society

<b>President</b>	Andrew Manning		<a href="mailto:president@ndmes.org.au">president@ndmes.org.au</a>
<b>Vice President</b>			<a href="mailto:vicepresident@ndmes.org.au">vicepresident@ndmes.org.au</a>
<b>Secretary</b>	Paul James		<a href="mailto:secretary@ndmes.org.au">secretary@ndmes.org.au</a>
<b>Treasurer</b>	David Edmunds	0432 426 891	<a href="mailto:treasurer@ndmes.org.au">treasurer@ndmes.org.au</a>
<b>Committee Members</b>	Charles Coppack		<a href="mailto:c.coppack@ndmes.org.au">c.coppack@ndmes.org.au</a>
	David Naeser	0433 088 703	<a href="mailto:d.naeser@ndmes.org.au">d.naeser@ndmes.org.au</a>
	Peter Smith	0407 472 770	<a href="mailto:p.smith@ndmes.org.au">p.smith@ndmes.org.au</a>
	Suzanne Smith	0410 492 083	<a href="mailto:s.smith@ndmes.org.au">s.smith@ndmes.org.au</a>
<b>Boiler Inspectors</b>	Ron Collins	0427 461 279	
	Phill Gibbons	9390 4390	
	Steve Reeves	9354 1395	
	Noel Outram	9525 1234	
<b>Librarian</b>	John Martin	9206 2325	
<b>Birthday Bookings</b>	Paul Costall	9572 1385	<a href="mailto:costall.paul@gmail.com">costall.paul@gmail.com</a>
<b>Driver Training</b>	Phill Gibbons	9390 4390	
<b>Safety Compliance Officer</b>	David Naeser	9276 8709	
<b>Newsletter Editor</b>	Jim Clark	0407 988 746	<a href="mailto:jimclark@hardwareandsoftware.com.au">jimclark@hardwareandsoftware.com.au</a>
<b>Website</b>			<a href="http://www.ndmes.org.au">www.ndmes.org.au</a>
<b>Society On-site Phone Number</b>		9349 0693	
<b>Society Grounds and Track Site</b>	Vasto Place (off Balcatta Road), Balcatta		
<b>Postal Address</b>	NDMES, PO Box 681, Balcatta 6914, Western Australia		



## Building a steel boiler at home

*(continued from March-April issue)*

BEFORE assembling the firebox, you will need to collect up all the plate work you have previously prepared for it. These include a front with all the holes in it, a rear with the fire hole in, two sides and a top.



They should all be clearly marked, e.g. “side”, “fire side”, “outside”, “top”, “front”, etc. This will make life a little easier for you.

Assembly is as follows: stand one side on a steel bench and hold it in place with a

magnetic square. If you don't have magnetic squares use clamps but check everything with a square before tacking.

Stand the front up next, then the other side, also held with magnetic squares. Now you should have a 'U' section.

Add the top plate and tack weld with at least two tacks for every joint — 10 in all.



Engineering Matters with boiler inspector Phill Gibbons

the rear plate at this time but the fire hole ring can be fitted and welded into the rear firebox section. It protrudes on the opposite side to the stay countersink, as shown in the photo (right).

Next time we will fit the front tube plate and firebox to the barrel assembly.

*To be continued next issue...*

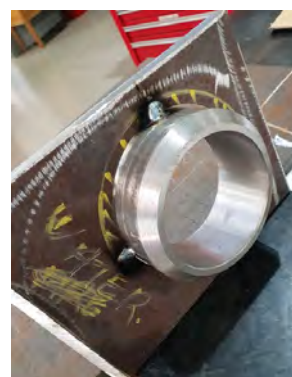
*Article by Phill Gibbons, photos by Steve Reeves*

Remove all the squares and invert the assembly. Check it for parallel and fit a brace to the rear near the foundation ring section. Re-tack the inside with two tacks to each joint.

Next fit the foundation ring sections and tack in place, three tacks for the front and two for each side.

The assembly is now ready for welding, but before you do this, make sure all the stay countersinks are on the fire side of the firebox!

We do not fit



## More Stars of Sandstone...



Left: Baldwin NG 61, built in 1904 and restored by the Trust, made its debut at Sandstone 2019.

Right: The big haul 1901 Fowler road locomotive.



Below: A Tiger Moth taking off with Cosmos flowers on show.



Left: Sunrise photo special, Garratt plus Baldwin NG61. Note the line up of keen photographers at the fence line in the background!



## Oh, the magical attraction of steam!

THE magic of steam brought visitors in their hundreds to Castledare Miniature Railway on May 5 for the annual Steamfest public run.

It was part of a two-day steam-fuelled weekend, with the Saturday (May 4) being a play day for steam enthusiasts, mainly from CMR and NDMES. We provided tremendous support over the weekend, with locos, members, a Model Engineering stand and working traction engines.

On the Saturday, no fewer than 13 NDMES members and four locos took part, including the welcome sight of “garden railway member” Neil Blinco with his recently-acquired 7¼” 0-4-2 saddle tank ‘Jamie’ — a loco that will hopefully be making its presence felt at Balcatta very soon.

Other locos in action were Phill Gibbons’ new Mallet, my Black 5 and Scott Andrews’ Mallet ‘Black Betty’. All performed well.



The Saturday turnout of NDMES members included Steve Reeves, Steve Briggs, Paul James, Clive Jarman, Linda Jennings, Clive Chapman, Neil Blinco, Phill Gibbons, Scott Andrews, Tanya Macarthur, Peter Maschette, Richard Turner and Tom Winterbourn. A few of those present are pictured here. *Photo: Steve Reeves*

The Sunday public run was probably the busiest I have seen at CMR, with the queue for rides extending from the loading lane, up to the ticket office and then back along the top of the station to almost the station exit ramp.

All available steam locos were pressed into use and after I had done four runs with two carriages behind my Black 5, I was asked by duty officer and organiser Craig Belcher to hook on to the six-car wooden red set. I ran with the two-tonne-plus trailing load for the remainder of the run. Such was the demand for rides that I ran for four hours straight without a break!

The Sunday run started out using the wetlands track to Wilson Park, but in order to try to ease pressure in the station, Craig switched to using the shorter Fern Road bank route.

Unfortunately, Craig had to let a couple of big diesels on to help with the passenger backlog, taking a little away from the Steamfest’s “steam only” concept.

Outside the station, the NDMES Model Engineering display stand attracted considerable attention, as did the traction engines of Ron Collins, Paul Costall and Lindsay Lockhart. They had a willing audience, helped by the queue for train rides which extended back past the display area. Despite the threat of rain over both days, the weather turned out to be perfect and I for one revelled in the challenges of the day. Overall, the weekend could only be described as an outstanding success.

*Article by Tom Winterbourn*

Right: The model engineering display stand manned by Paul James and Steve Reeves attracted quite a bit of interest.



Left: Some impromptu rides for small visitors on the driver’s seat of Paul Costall’s Fowler, assisted by Sue Smith.

Right: Big traction engines were mixing it with the cars in the carpark area. Here Peter Smith is having a drive of Ron Collins’ Fowler.

*Photos: Jim Clark*





## Notes from the Boiler Group

PROSPECTIVE new member Gerard Attrill, who is currently building a boiler for a traction engine at the Wednesday Boiler Group, brought along this interesting pressure-controlled 2-stroke engine with a fuel vapour carburettor — *see photo at right*.

Instead of a conventional carburettor, air is bubbled through the fuel tank at the lower left, creating a vapour-rich mixture for the engine. An ingenious double ball valve controls the intake and exhaust. Gerard's engine started easily and ran well, apart from some minor troubles with the spark plug, which Gerard had also made himself out of bits and pieces.

This engine is to a design by Jan Ridders — for more information on how this engine works and about his extensive range of other novel engines, see the following website: <http://heetgasmodelbouw.ridders.nu>

**Jim Clark**



Above: Gerard Attrill's 2-stroke engine.  
Photo: Jim Clark.

## More infernal combustion engines!



THE proliferation of internal combustion engines continued in April with two hit-and-miss engines being demonstrated by Richard Turner (*in photo, at left*) and Clive Jarman (*at right*).

Richard's engine was recently purchased off eBay and required quite a bit of work and adjustment by him to get it running reliably, which it certainly does now.

Clive made his engine from scratch several years ago from published plans.

It's always interesting to see and hear this type of engine in operation.

**Jim Clark**



Above: Garth Caesar applying the heat...  
Below: The chassis is coming along nicely.

## A very small boiler indeed!

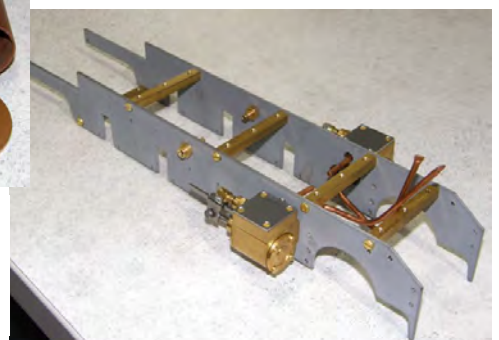
FROM some very large steel boilers recently under construction, we go down to the smallest boiler built to date at the Boiler Group — for Garth Caesar's 45mm garden railway loco.

Garth is following a design by Tom Cooper for a narrow gauge 2-6-0 loco. He is using a combination of bought-in parts such as the piston and valve assemblies, together with frames which he has had laser cut, and of course the boiler, which he is currently building.

It has a single flue tube and while it's a lot simpler than larger boilers, it still needs the same care and attention to detail to ensure compliance with the Boiler Code. **Jim Clark**



Above: All the component parts (including the smokebox!) needed for Garth's loco boiler.  
Photos: Jim Clark





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## My hobby dream

OUR story starts with my lifelong connection with trains as my father worked for the WA Government Railways as a signals safe-working technician, which exposed me to many situations where I came in contact with trains. As a young boy my Mum would sit me in a special seat my Dad had made on the back fence of our railway house in Kalgoorlie which backed on to the shunting yard next to the station. Many hours were spent watching the wagons being moved in and out of the goods shed.

All my life I have had an HO model train set, so as my own children started to grow up, out came the train set from my childhood, at that stage about 20 years old. I am now into my third set up, this time for our grandchildren. Of course, they all have a Thomas character and Popa has Thomas to stop any squabbling. I still have some of the original rolling stock but all track is of the modern era, all set up with the Thomas theme in mind. This is still an ongoing project but I am fortunate that my wife Suzanne is helping to finish this project as I have recently been distracted by a Wombat.

I've wanted to build a live steam engine for many years but thought maybe best to leave that for when I retire. Well, a friend told me not to wait and advised me to check out the Forrest Park modellers in Bunbury as he knew someone who was involved with them. So while staying in Bunbury at Easter 2017 we visited the track on their public run day and I introduced myself and my intention of building an engine. Before I could move, along came Steve Reeves and a hour later all was sorted. Steve explained the Wombat project in detail and I was hooked. I could not believe my luck on finding such a group as the NDMES.

So the Wombat story begins. On an NDMES public run day in May 2017, we met Tom Winterbourn and were shown around the club grounds. Tom introduced us to Ron Collins and he invited us to his workshop.

I was offered the drawings to build a Wombat and as I am a fitter machinist, I was asked if I would check the drawings as I proceeded to build the engine. This explains why I am in front of the construction series that is happening in the Australian Model Engineering magazine.

With the construction underway and my wife and I having been accepted to join the NDMES, Suzanne and I were wondering what to drive on the track while I was building Wombat, as the estimated time to build is about 2-3 years. Solution: Buy Suzanne a diesel locomotive for her birthday as she loves trains and the boys from the diesels in the club had taken her under their wing and she was hooked on driving.



So Suzanne chose her engine from Abbots Modelling in England. It arrived in flat pack form and out came Suzanne's tool box and she set about assembling it with a small amount of help — *see photo above*.

So 15 months down the track we are progressing OK as you can see from the photos, with help from club members who are always ready with advice. We are learning many new skills as we go and making mistakes. But I can see light at the end of the tunnel as I start planning the last major components for Wombat. I just need to finish so I can take my grandchildren for a ride on the club's magnificent track.

*Article and photos by Peter Smith*



## A useful drilling jig

This article is to give an insight to a little drilling jig that might prove to be handy if you are trying to drill a cross hole through the centre of a rod. I am sure similar jigs have been described before, but here it is again should someone not be aware of it.

I needed to drill a 2mm hole in a number of silver steel link pins for my Phantom loco. I needed six pins to be drilled at 11.4mm offset from the flange of the pin and another four drilled at 17.4mm offset.

I had some ½ inch square 12L14 steel and cut it to 30mm long.



I placed it in a four jaw chuck and centred it. I drilled a 4.86mm hole (gauge 11 drill), to suit the diameter of my link pins, all the way through, then countersunk the hole — see photo at left.

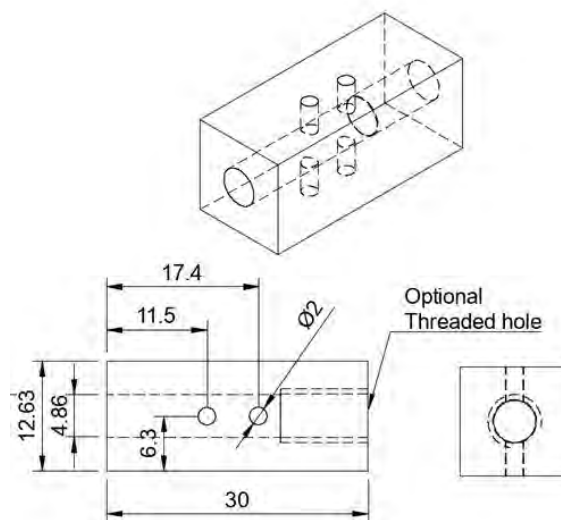
It is important to drill this hole exactly in the centre of the square bar as it will aid with ensuring the cross drilled hole will be right in the centre of your rod.

Next I placed the drilling jig in the vice on my mill and found



its centre via an edge finder and DRO. I set the desired offset length to 11.4mm with the edge finder and DRO and drilled a 2mm hole all the way vertically through the drilling jig. Without adjusting anything else, I

then drilled six link pins. I just placed them in the end of the drilling jig and held them there with my thumb over the end of their flange. I placed a drop of cutting fluid in the hole before drilling each link pin. When they were all done, I moved the table of the mill further over to 17.4mm offset and drilled another four link pins. Drilling the pins was quick, easy and worked a treat.



Another option, should you need to drill round rod with a cross hole at varying set-backs from its end, is to tap the longitudinal hole of the drilling jig and set a grub screw in it. This will allow you to set any desired offset for your cross-drilled hole via the grub screw.

I hope this little drilling jig might help you one day. It made life easy for me! The sketch and pictures might help to explain the text.

**Article and photos by Keith de Graauw**



The complete set of finished link pins, with the drilling jig in the foreground.

## Squaring up thin pieces in the milling vice

It's quite easy to mill two sides of a thin piece parallel, but more difficult to get the third side at right-angles, as a standard square won't fit between the vice jaws. Richard Turner's simple home-made T-square (*photo below*) solves the problem, and is shown in action in the right hand photo.

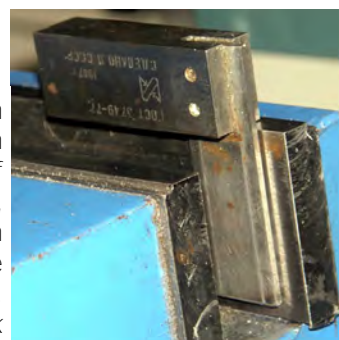


Following Richard's idea, Jim Clark cut down the blade of a spare engineer's square to suit his own machine vice, and this serves the same purpose.

**Thanks to Richard Turner for this handy hint.**

Right: A cut-down square now fits on top of the jaws of the machine vice, allowing thin material to be squared up easily.

Photos: Jim Clark





## Sunday Club meeting and run day

SUNDAY 10 March saw a change in format with the monthly General Meeting following on from the Special General Meeting that was held on the Sunday of the club run day, instead of the usual Friday night.

The business of the meeting was dealt with swiftly and there was plenty to look at before and after the formal proceedings, as shown in the photos. A hot dog lunch was provided and there was time for a leisurely chat and to have a look round the facilities in daylight, a pleasant change from the usual Friday night meetings.

The committee have decided to continue with this format every alternate general meeting, so the May general meeting will be held at 10am on Sunday 12 May. Hopefully quite a few members will be able to attend despite the clash with Mother's Day. See you there!

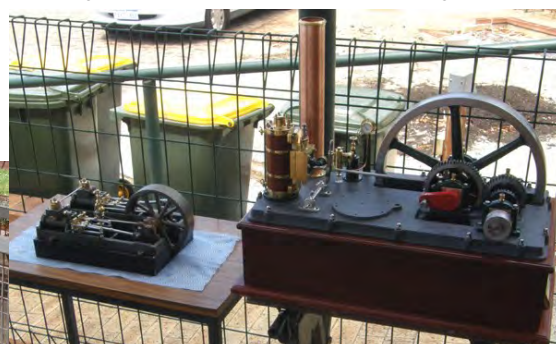
*Article and photos by Jim Clark*



There was a good turnout of boilers and steam engines.



Left: Clive Chapman and Andy Davies hard at work producing the traditional BBQ hot dog lunch.



Above: Some engines under construction. On the left the twin Victoria being built by Andy Davies and on the right a large beam engine by Jim Clark.



Left: Charles Coppack, Laurie Morgan and Richard Turner on the Garden Railway.



Left: Jaco de Lange enjoying laps round the track with 'Bridget'.

## A day out at Forrest Park



I recently attended the April run day at the Forrest Park railway in Bunbury.

I took both 'Majestic' and 'Sarah Jane' to do some double heading. Peter and Sue Smith also attended with their family and helped out.

A great day was had by all — we were the star of the show!

*Steve Reeves*

Left: An unusual double header!



Above: A Bunbury member is building a battery electric loco based on the diesel shunter used at the Collie power station. Photos: Steve Reeves



## Another enjoyable day at the office!

AFTER a somewhat slow start, we had another busy and enjoyable monthly public run day on April 28, accompanied by perfect weather.

There were two GLT steamers in action, Tom Winterbourn's Black 5 and the club Heidi, along with Dave Robinson's big yellow diesel and Allen Ward's 5" 'Waterloo'. On the raised track were the Blowflies of Steve Reeves ('Blowfly'), Paul Costall ('Firefly') and Paul James ('Bushfly'), and Steve's battery loco 'Ocker'.

All locos ran well, apart from a momentary injector air lock on the Black 5.

Duty Officer was Phill Gibbons, which explains why he didn't have one of his steam locos in action. Also missing was Ron Collins' 0-4-0 Heidi, which is undergoing overhaul and shortly to re-emerge as an 0-4-2!

Lesley Hodges and Sue Armstrong again capably handled the kiosk, as did Andy Davies and Clive Chapman at the BBQ and the 'Two Ronnies' (Collins and Casotti) and others in the station. **Tom Winterbourn**



After an absence of three months, Tom Winterbourn's Black 5 was back in action and is seen here about to enter the tunnel.

*Photo: Steve Briggs*

Right: Steve Briggs takes a turn on Tom's Black 5.  
*Photo: Ethan Giddens for Steve Reeves.*



Right: In his usual laid-back style, Paul Costall driving his Blowfly 'Firefly' climbs past the main loco shed.  
*Photo: Steve Briggs*



Top: Steve Reeves on the elevated track with 'Blowfly'.

Below: Ed Brown enjoying a drive on the club Heidi.

*Photos: Ethan Giddens for Steve Reeves*

Right: Sue Smith has a full complement of passengers as she takes Dave Robinson's big yellow diesel up the back curve out of the station.

*Photo: Steve Briggs*





## Tips for successful brass plate work

SEVERAL people have asked about the best ways to solder or braze brass plates, such as when building tenders and cabs. Here are a few hints and tips which I have found work well for me when making up brass plate work — I hope they are useful to you.

Of course, the worst thing you can do to a thin sheet of brass larger than about 50mm square is to bring an oxy torch near it – it will wrinkle up like a pappadum in a microwave! (How do I know this? – don't ask!)

So, although silver soldering or brazing is out, soft soldering using plumber's or electrician's solder does a good job instead. Most lead/tin solders melt at around 200°C which will not distort the brass. However, soft solder is nowhere near as strong as silver solder and needs to be used in combination with other fixings such as rivets.

Traditionally, electrical solder is an alloy of lead and tin (typically in a 60/40 ratio) because this alloy has the ideal melting point and conductivity required for soldering copper wires.

With the introduction of RoHS (Restriction of Hazardous Substances), solder now has to be lead-free. A range of lead-free solders are available and these are fairly exotic alloys comprising mostly tin, a little copper and often some silver.

The downside is that lead-free solder generally has a higher melting point and, like cadmium-free silver solder, it doesn't flow quite so easily, making it a bit harder to work with.

If you want to use a lead-free solder, you will need to do a little bit of experimentation with some scrap pieces of brass to work out the best flux to use and the right amount of heat to apply for the solder you are using. Choose a resin-cored lead-free solder if possible, as it will contain a flux compatible with the particular solder alloy.



The cab that I made for my 5" gauge Britannia, all riveted and soft-soldered construction. The copper colour comes from being cleaned up in acid pickle, when copper in solution in the pickle gets self-electroplated onto the brass.

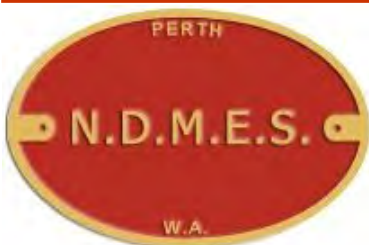
Personally, my preference is to use the old-fashioned leaded 60/40 solder with a resin core. People may still have stashes of this around the place. Obviously, you need to use it with care.

The secret to successful soft soldering is to pre-tin all of the mating surfaces. The items can then be dry assembled and they will just need to be re-heated with a little extra solder applied to each joint get it to flow together nicely.

Next time we will go into detail with some of the procedures that I have used to build both the Britannia cab (shown above) and a fairly complex BR tender.

*To be continued in a future issue...*

*Article and photos by Jim Clark*



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