



NORTHERN DISTRICTS MODEL ENGINEERING SOCIETY (PERTH) INC.

May — June 2018

# Bunbury convention a big success

TO describe the 2018 AALS convention at Bunbury over Easter as anything other than a big success would be a travesty. Co-hosted by NDMES and SWMEA, we had almost 250 registrations from all states in Australia except Tasmania — and we had two from there until illness forced their cancellation — plus two visitors from New Zealand and three from the UK.

Then Ron Collins and Phill Gibbons put the icing on the cake by taking out two of the major awards. Ron lifted The Tullamarine Trophy for the best steam road vehicle and Phill won the Hugh Elsol award for most popular owner-built locomotive.

There were many “pats on the back” for the organisation of the event, none more satisfying than those from Lynn Venning (Penfield, South Australia) and Wayne Roberts (Tullamarine Live Steam Society, Victoria), who have each organised three previous conventions themselves.

While the evening meals were basic in their presentation from an outside van, the quality of the food could not be faulted, with a selection of three choices, plus a vegetarian option, each night. There were also ample supplies of morning and afternoon teas available in the steam sheds.



Eric Hill brought his recently completed 'Bundy 5' locomotive all the way from Wagga Wagga, and was one of several interstate visitors with locos at the Convention. *Photo: Jim Clark*

The red shirts of NDMES members were dominant at the convention, with no fewer than 70 registered and many were on the daily work rosters. In all, there were 131 delegates from WA, 29 from both NSW and Victoria, 22 from Queensland, 17 from SA and two from the ACT, plus the two from NZ and the three from the UK.

*(Continued on page 7)*

Below: Black 5s double-heading: Allan Wallace (SA) and Steve Briggs at Bunbury. *Photo: Tom Winterbourn*

## Inside this issue:

<b>President's report</b>	2
Technical matters	4
Boiler group notes	6
AALS Convention	7
Castledare steam fest	10
Windmill	11
March public run	12



---

---

## Looking at where we're at and where we've been

---

As I write this we had just concluded the best school holiday run ever, in financial terms hence patronage, so a great effort from our Tuesday team in supporting the club and of course thanks to our patrons — see article on page 5. An influx of 56 kids plus carers from the YMCA gave us something to contemplate, but all went well.

One incident, the derailment of Tom's Black Five and the two cars he was hauling through the station departure points sticks in the memory.

It is believed the points switch was moved by some little urchin (not a YMCA visitor, I hasten to add) as Tom was virtually on top of the points. Disastrous result, and there was some difficulty and delay in re-railing the cars and loco and then resuming operations. If that switching theory is correct the children then on the cars would have had no comprehension of the consequences of moving the switch, they were far too young to understand.

At time of writing we have not had the cars turned over or placed on the steaming bay roads to inspect under for damage but this will be required before our next run day. A similar derailment due to an unauthorised point switch change occurred during the February 2017 run day at the station approach points derailing Ron Collins loco's back wheels and tender.

Time to consider an upgrade or change to our current point-switch arrangements I think. Infra-red remotes anyone?

I joined the model engineering club movement in Sydney way back in October 1977 and in the forty years since I guess I would have attended close on some 400 monthly member meetings over that time and something like another 150 or more committee meetings. I have therefore seen plenty of club presidents in action at meetings but never ever anticipated that I would fill the role myself.

Having said that, you soon discover that you still have a lot to learn to find your way, and the workload seems to be more than anticipated, but I am trying to meet that challenge. What is so encouraging about this club is that we have a great supportive committee with some wide experience in the issues that beset any club's management, obligations or responsibilities that go along with opening our gates to the public each month.

I am very grateful to have that support and trust you will bear with us as we all go forward together.

March 14, 2018 marked the eighth anniversary of the first train to ever complete a circuit on our ground

### President's Ramble



By  
John Shugg

level track. The engine was to a Ken Swan "Bridget" design and originally came from another NDMES — the North Devon Model Engineering Society that is, for those of us who can recall the occasion.

The owner/builder was a Nigel Sales and he and his wife joined our club briefly, but then moved from Balga to Melbourne for the broader job market and Melbourne weather, most days more reminiscent of North Devon, we presume!

A lot of train rides have occurred since that date, and a lot of extra track has been laid too since 2010. A recent inspection showed a need to perform some maintenance on some of the initial point work given lost motion and wear in the points changeover mechanism connections, but that is in hand with bushings now being required in the moving bits.

Speaking of maintenance, have you noticed the state of the paint on the far end of the steaming bay timber gable ends and also the station paint work? It's getting to the point of being decrepit and the steel work in the station needs an urgent re-coat too, with a clean down first of course. Always plenty to do, but we cannot just ignore it any longer, so as the weather cools let's put on our old clothes to wear whilst painting. Rollers, brushes and paint will be supplied.

The Tuesday committee has decided that the steel work in most of our picnic tables is rusted beyond economic replacement or repair so you will see the start of that furniture's disappearance. George may well miss the chicanes when riding the mower around but he will no longer have to move or roll the heavy furniture over to mow under, so a plus for health and safety. This may mean our younger patrons will have to sit on blankets, picnic style, but we will watch developments.

At our last Tuesday public run (our best school holiday run yet, patronage-wise) all of our portable tables and chairs were single-handedly put out (and later put away) for patrons by Andy Davies (Thanks Andy!) and we really need some more. Bunnings no doubt will have plenty more.



### New Vice-President

Long-time NDMES member Steve Briggs was unanimously voted in as the club's new vice-president at a committee meeting on May 8.

The post became vacant when incumbent John Shugg took over the presidency following the resignation of Allen Ward in March.

*Photo: Tom Winterbourn*



---

---

## AMRA plans for long weekend of June 2—4

I hope you can all refer to the “Cumulative Summary of Cash Receipts and Payments” presented by our treasurer at our special meeting last month and work out the net income we received from last year’s AMRA operation in June. It worked out to be a net \$1,580 for three days attendance plus set up and pull down time for the exhibits and the railway. Now work out the “man hours” required to bring in that net income... too hard?

We make much more than that operating for say four hours once a month, on the Sunday Public Run Day, in our own grounds.

Now I will be the first to agree that the money side of the equation is not the sole reason we attend the AMRA event each year: There is an element of promotion and publicity for the club, but what is the cost/benefit in all of that? An occasional new member? More patrons too, of course, usually. But promotion by the club on Facebook achieves more in all probability these days.

Some weeks ago the president of AMRA, John Maker, and I had a telephone discussion and I explained to him that this year NDMES would wish to place a 4 x 4 metre display (approximately) of model engineering exhibits (with NO RAILWAY OPERATION), but that Steve Reeves, who is also an AMRA member would be at AMRA HQ and he would discuss table and fence requirements etc. in more detail with John Maker.

I believe this subsequently occurred as arranged. I know that John was disappointed, but he accepted the situation. He has strived to rejuvenate the exhibition

with many interesting new ideas for change.

This display of models only will impact on the number of members who are able to attend as “exhibitors” for NDMES to man the display and thus be granted exhibitors passes each day. No details have been advised yet. The rest of us may well have to join the queue to pay for entry — please bear in mind that AMRA’s own members are charged for exhibition entry!

Priority for our part would favour those who assist with displaying model engineering items and who give their time. In all this are some of our traction engine guys, who will no doubt be happy to provide a show outside the building. That usually draws a crowd of the show’s patrons, many of whom would never have seen steam traction before, let alone in miniature. With no restraint on passing traffic outside the hall, there is not likely to be any prospect of Traction Engine rides being offered, so a stationary display of engines “in steam” is probably the only safe option once again.

Hopefully you will all now dust off models in whatever state of completion and bring them along for display at AMRA on the upcoming long weekend (Saturday, June 2, to Monday, June 4). If displaying a model, please write out a card to add to the model giving some outline of its function if necessary, its build date, cylinder capacity/stroke if relevant and so forth, so when people ask, our display staff can provide sensible answers. Thank you all in anticipation!

**John Shugg**

## Evacuation access way from picnic grounds

Another project that needs fairly urgent attention is the evacuation pathway for patrons to exit the picnic grounds in the unlikely event that the bridge is ever put out of commission. In the past, branches have spontaneously snapped off the Jarrah trees (the last in 2007) at the foot of the bridge ramp, so statistically the next long dry spell could see yet another episode. Well, that is a gloomy prospect.

But as we invite members of the public into our grounds, our patrons may include the blind, deaf and people in wheelchairs, and if you read the Disability Discrimination Act (Cwlth 1992) you will find that the focus is on providing the disabled with the same dignity and rights of access (or egress) **basically unassisted**, as

the non-disabled. If one of the people with a disability complained of discrimination on access grounds, we may well see ourselves in Federal Court. Likely work directions would follow to remedy the issue.

What I am getting at is that we will need to have sections of the elevated track removable in two places (say 2 metres wide) in the event of an emergency evacuation. Adjacent to the flagpole is the likely location. A concreted pathway from this with GL track level crossings would be needed.

A quick over-centre locking arrangement of pins into matching A-frame elevated track supports might be the answer, but that design should rightly be delegated to our Fab wizards. More anon.

**John Shugg**

---

**For Sale:** Sieg X3 mill motor and control card. \$150

The motor and card were functional when removed from old mill. Motor could use new brushes.

Motor: 240V dc, 600W 0-4000 rpm ZYT 600

Control card: 240V AC input. 240V dc output 4amp  
Sieg ZZQ030103A. Contact Andrew Manning.

---

**For Sale:** Part complete RSM Light Compound Steam Tractor in 2” scale. \$2,000

All major parts of this tractor are complete: Wheels, differential, boiler smoke box front axle. Remaining work is fitting cylinder block to boiler, valve motion, painting and assembly. Contact Andrew Manning.

# Gasket materials

Some time ago I did a little work for a friend on his loco and he supplied the gasket material for the cylinders.

It was a paper looking stuff and it was very tough, almost impossible to tear, so I read a little about it. I Googled it from the name on the material and it is a material for petrol and oil called 'Klingerit AS80'.

So the next thing I did was some tests to see how good it was for loco use. The first test was to leave a piece in water for a month — there was no effect, it still held up OK. This material is only supposed to stand 120°C, so the next test was to put it in the hooded barbie and let it rip and see what the temperature gauge reads when it breaks down. It was OK up to about 150°C, no problems, and we are not going to exceed that at the cylinders.



Engineering Matters  
with boiler inspector  
Phill Gibbons

The recommended material for steam is very brittle 'Klingerit 4500' and quite frankly I mistrust it, so I am going to remake and change all my latest batch of gaskets to AS80 even before the loco goes into service.

However, I am not going to recommend the material until I have done field trials.

I always soak my gasket material in steam oil as soon as I buy it, by putting it into a zip lock bag with some steam oil. I store all my gasket material and spare gaskets long term this way. The supplier for both types is ATOM in Kewdale: [www.atom.com.au](http://www.atom.com.au)

It is available in 1/32" sizes up to 1/8". They also advertise gasket material for high pressure steam with an integral stainless steel mesh which would make it very strong, but it's not in stock. Oh! for the old days when asbestos gaskets were commonplace!

**Phill Gibbons**

## Calendar of Forthcoming Events

<b>General Meeting</b>	Friday	11 May	7:30 pm	
<b>Club Run Day</b>	Sunday	13 May	9:00 am — 2:00 pm	
<b>Public Run Day</b>	Sunday	27 May	10:00 am — 2:00 pm	
<b>AMRA</b>	Sat-Mon	2 June—4 June	Daily	<b>Claremont Showgrounds</b>
<b>General Meeting</b>	Friday	8 June	7:30 pm	
<b>Club Run Day</b>	Sunday	10 June	9:00 am — 2:00 pm	
<b>Public Run Day</b>	Sunday	24 June	10:00 am — 2:00 pm	

## Know your Society

<b>President</b>	John Shugg	9304 0338	<a href="mailto:jshugg@bigpond.net.au">jshugg@bigpond.net.au</a>
<b>Vice President</b>	Steve Briggs	0400 691 864	<a href="mailto:epsbriggs@yahoo.co.uk">epsbriggs@yahoo.co.uk</a>
<b>Secretary</b>	Tania Mackellar	0498 098 597	<a href="mailto:maykae@live.com.au">maykae@live.com.au</a>
<b>Treasurer</b>	David Edmunds	0432 426 891	<a href="mailto:david_cyprus_edmunds@yahoo.co.uk">david_cyprus_edmunds@yahoo.co.uk</a>
<b>Committee Members</b>	David Naeser	0423 088 703	<a href="mailto:dnaeser@inet.net.au">dnaeser@inet.net.au</a>
	Dave Robinson	0417 943 678	<a href="mailto:dave.robinson10@bigpond.com">dave.robinson10@bigpond.com</a>
	Harry Roser	9525 2125	<a href="mailto:harryroser@hotmail.com">harryroser@hotmail.com</a>
	Tom Winterbourn	0415 682 931	<a href="mailto:twinterbourn@ozemail.com.au">twinterbourn@ozemail.com.au</a>
	Ron Collins	0427 461 279	
<b>Boiler Inspectors</b>	Phill Gibbons	9390 4390	
	Steve Reeves	9354 1395	
	Noel Outram	9525 1234	
	John Martin	9300 2180	
<b>Librarian</b>	John Martin	9300 2180	
<b>Birthday Bookings</b>	Paul Costall	9572 1385	
<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.net">www.ndmes.net</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



## 'Highlight of the school holidays'!

ARGUALLY the best school holiday run yet kept three GLT trains and two on the raised track busy on May 17. The weather was perfect and there was a continuous queue for rides.

One young mother with a child said, on leaving, "it was the highlight of the school holidays" – a comment echoed by other visitors.

It was also a good day from the revenue perspective. The "gate" was helped considerably by a 60-strong YMCA party booking, plus strong support from family groups.

Locos in action were Dave Robinson's big yellow diesel, Tom Winterbourn's Black 5, the Heidi of Tania Mackellar and Scott Andrews, Steve Reeves' battery loco "Ocker" and the Blowflies of Paul Costall and Steve Reeves.

*Article and photos by Tom Winterbourn*



Steve Briggs driving Tom's Black 5 is caught in an unusual shot taken between the shrubs on the embankment.



Tania Mackellar brings Steve Reeves' Ocker into the tunnel.



Dave Robinson is framed by the tunnel entrance with another full load of passengers. (Safety Note: One member of the club stopped other trains approaching the tunnel while the photographer was in the tunnel taking the pic).

## Blowers R Us!



Seen here plotting their new world-wide franchise, Ron and Andrew discuss details of the fan blower kit (over coffee and biscuits, of course). *Photo: Jim Clark*

Andrew Manning and Ron Collins have produced a kit of laser-cut parts that can be built up into a fan blower for lighting up engines (*photo top right*). A simple adapter can be made to fit into any chimney.

The small DC motor has a speed controller that allows the optimum light-up "suck" to be obtained. So far, Tom Winterbourn has used the prototype unit (below right) with good results.

The intention is to have some units available for use by club members (contact Andrew Manning for details) and to make the kits commercially available through E J Winter for people to build their own.





## Notes from the Boiler Group

Peter Smith took some time off work for some intensive boiler sessions at Ron Collins' workshop and has virtually completed the boiler for his 7<sup>1</sup>/<sub>4</sub>" Wombat in less than a week.

He is one of the "early adopters" building the Wombat currently being serialised in AME, using preliminary drawings. At his current rate of progress, he will be one of the first to have his engine in steam, very soon.



Peter Smith is progressing well with the boiler for his Wombat, seen here during the early stages, brazing up the tubes into the firebox.

Right: Paul James completed and tested his vertical boiler some time ago, and is now helping Stan Armstrong with his boiler.

*Photos: Jim Clark*



### How about a Stationary Engine Steam-Up Day?

As there are so many vertical boilers either completed or under construction, how about a club day devoted to steaming them up and running a variety of stationary engines?

Talk around the workbench reveals that almost everyone has at least one stationary engine — some have several engines of various sizes, vintages and complexities. Many aspiring model engineers seem to have cut their teeth on a Stuart Turner or a locally produced kit. There are quite a few scratch built engines, taken from plans or magazine articles (*see item below!*)

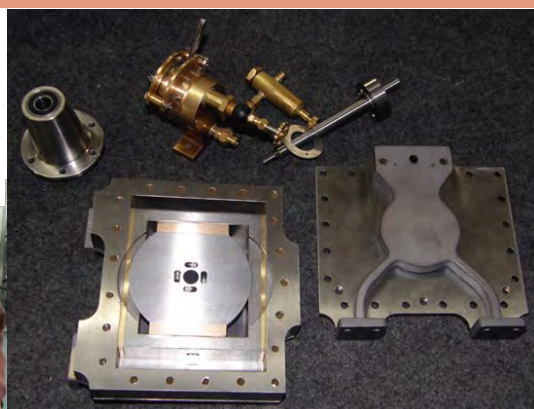
If there is sufficient interest among members, perhaps the committee could arrange one of the designated club run days for this event, perhaps with a BBQ lunch supplied!

## Model Engineering activities



Above: Geoff Wilkinson has almost finished refurbishing the chassis for his "Maid of Kent". *Photo: Steve Reeves*

Below: Phill Gibbons silver brazes the brake cylinders for his new Mallet.  
*Photo: Steve Reeves*



Above: *What is it?*

It is in fact a steam engine, with a square cylinder and square piston, and it's being built by Ron Collins who is always up for a new challenge!

The original idea appears to have come from one John B Root, who filed a patent for a square piston engine in 1863. Watch out for more details about this intriguing piece of model engineering in future issues of Steamlines... *Photo: Jim Clark*



## 62nd AALS Convention

*(Continued from page 1)*

There are no accurate figures available for delegates for each day, as some registered for just one day and others for all days. Booked meals totalled 283, with 92 on the Friday, 108 on the Saturday and 83 on the Sunday.

Congratulations to SWMEA for the work it did in preparing the infrastructure for the convention and the provision of extra turntable bays to help cope with the influx of locos.

There was also an excellent turnout of traction engines — nine in all, with about half from NDMES.

It was also great to have a trade stand from E & J Winter (Bolton Scale Models), operated by new AALS president Ben de Gabriel — see article on page 9. On display on his stand was Ron Collins' recently completed Wombat, the subject of an article in AME and with ready-cut parts now available exclusively through E J Winter.

This excellent loco was sold at the convention to SWMEA member Ray Cooper, of Waroona, for his garden railway.

We were also blessed by perfect weather throughout the long weekend, providing an idyllic atmosphere at Forrest Park Railway.

There were only a couple of minor problems at Bunbury causing negative comments and these were mainly related to the cleanliness, or otherwise, of the portable toilets – which should have been cleaned during the convention, as arranged.

The pre- and post-convention runs were well supported, with very positive feedback from NDMES' two days in the limelight on the Tuesday and Wednesday. The visit to the Bennett Brook Railway and the Perth Electric Tram Society (PETS) at Whiteman Park on the Thursday was similarly popular, with 36 visitors — see page 9.

At NDMES, delegates had the choice of all gauges plus the garden railway and over 50 lunches were served on both days, featuring roast beef cooked in the club's new hooded BBQ.

Toodyay also received delegates from each mainland state on the Friday and several visitors even made it up to Geraldton on the following weekend.

CMR received delegates on the Wednesday before the convention while Katanning welcomed visitors both before and after the convention.

I would like to place on record the excellent job David Edmunds did as convention registrar. The smooth running of the registration process, both with the bookings and the registrations at the



"Look out! There's a train coming!" A motley crew getting a lift behind Ron Collins' Fowler traction engine. *Photo: Jim Clark*

convention, was basically down to him. Also, thanks to Roman Bogoyev for the inter-active website he developed for the convention, particularly for registrations.

Another WA convention? Not my problem! Two is enough!!

**Tom Winterbourn**

*(more photos on pages 8 and 9)*



Ron Collins won The Tullamarine Trophy for "best steam road vehicle" at the convention. He was not at the Sunday presentation night, so was presented with the trophy at Balcatta by immediate past AALS president David Proctor on April 3. *Photo: Tom Winterbourn*



## 62nd AALS Convention (cont...)



Left: Jack Soames (SA) set some new records for speed and endurance on the elevated track, seen here with partner Danielle Hall at Bunbury.



Above: Traction action! Photos: Jim Clark

## Post-Convention at NDMES Balcatta



Left: Danielle Hall (SA) and her Gauge 1 0-4-2 "Jack" with Warwick Allison (NSW) at the Balcatta garden railway.



Above: AME Editor Brian Carter (NSW) and Shane Ferris (Old) wait for their lunch at Balcatta on April 3.



Left: Mark Bowring drives the "Teddy Bear Train" with owner John Steadman (Vic) behind.

Right: Stu Martyn holds court with his Stanley Steamer at Balcatta.



Right: Harvey Dart (SA) with his "new" 0-6-0 at Balcatta.



Left: Warwick Allison (NSW) with his 3½" 'Canadian National' 0-6-0.



All photos: Tom Winterbourn



## Trains, buses and trams at Whiteman Park

BENNETT Brook Railway pulled out all the stops for the 2018 AALS post-convention run at Whiteman Park on May 5. Delegates gathered at Village Junction Station and, right on time, the special train arrived with convention delegate Clive Woodward at the controls of 'Planet 7'.

Members enjoyed the special train ride, including a photographic run past at one of the stations and with an abundance of wildlife in a natural habitat. After arriving at Mussel Pool station, delegates walked the short distance to



Run-past, Bennett Brook Railway style! Convention delegates line up in formation for the run-past of the BBR train at Whiteman Park on April 5.



Left: All aboard! One last photo opportunity before ex-Sydney tram 1017 leaves Whiteman Park Village for the run to the PETS tram barn for a walk-through inspection of the 30-plus trams there.

BBR's workshops for a conducted tour. Locos being overhauled included two South African Railways NG15s, the largest conventional locos built for a 2ft (610mm) railway.

Delegates then boarded a Bus Preservation Society of WA vintage Mercedes bus for the short ride to the village café for lunch.

A most enjoyable day!

*Article and photos by Tom Winterbourn*

## A long way to go for a long weekend

E J Winter, one of Australia's longest-standing model engineering supplies businesses, provided a trade stand at the AALS convention in Bunbury over Easter.

Current proprietor and keen model engineer (and now AALS President) Ben de Gabriel was one of several attendees at the AALS convention who made epic road trips to attend. He loaded up his van in Bathurst with a large range of stock items, then picked up friend and Wagga Wagga member Les Mouat from Canberra at the beginning of the week. They sharing the driving, taking four days to cross the country, and arrived in Bunbury in time to set up the E J Winter trade tent (which was also crammed into the van) for the duration.

With a seemingly bottomless supply of model engineering bits and pieces, the E J Winter tent was well patronised throughout the weekend. Quite a few visitors spent more than they had intended! However, as Ben said, "Two weeks on the road, driving across the country, attending the convention then driving back, was never going to be a profitable operation — but it is all about showing what sort of customer service we can provide to model engineers in Western Australia!"

Despite various invitations to extend their stay, Ben and Les were back on the road heading east as soon as the convention finished — to attend the scale running day at the Orange society (Ben's home club) on the following Saturday.



Ben de Gabriel (right) and Les Mouat (left) outside the well-travelled E J Winter van and display tent at Bunbury. *Photo: Jim Clark*

Ben's drive and enthusiasm is to be admired, and his commitment to providing excellent customer service is certainly demonstrated by his attendance at this year's convention in Western Australia, as well as by his friendly and knowledgeable advice.

So if you need some parts for your next project, try E J Winter first, you may be pleasantly surprised by the wide range of quality items they now have in stock and the prompt delivery options available.



## Big public support for Castledare steam fest

IT'S old technology, but there's no doubting the pulling power of steam. Despite rain in the morning and the threat of more rain throughout the day, Steam Fest at Castledare Miniature Railway on May 6 saw large crowds lining up to ride behind steam locos at this steam-only event.

Up to a dozen locos were used on trains, which sounded impressive climbing Fern Bank. NDMES had a heavy involvement, with the steam traction engines of Ron Collins and Paul Costall demonstrating another form of traction from a by-gone age. Tom Winterbourn and his Black 5 also operated without incident throughout the day.



A smokey scene in the station as 'Black But' departs with a full train.



Left: Tom Winterbourn on his Black 5 approaches 'Stanbridge' bridge with a lightweight load!

Below: Steve Reeves coasts alongside the river driving Tom's Black 5, with some happy campers in tow.



Above: Preparing for the day ahead: From the left, Paul Costall, Suzanne Smith, Steve Reeves, Peter Smith and Ron Collins.

Other NDMES members present were Suzanne and Peter Smith, Steve Reeves and Allen Ward.

Before the busy Sunday public run day, there was a play day on the Saturday, followed by a BBQ meal.

*Article and photos by Tom Winterbourn*

## Loco transport trailer and stand for sale



John Wilson has recently sold his loco and these photos show two items he has for sale which are now superfluous to his needs.

Asking price of \$750 (new \$1,500), hardly used. For details please contact:

**John Wilson Mob: 0411 228 436**





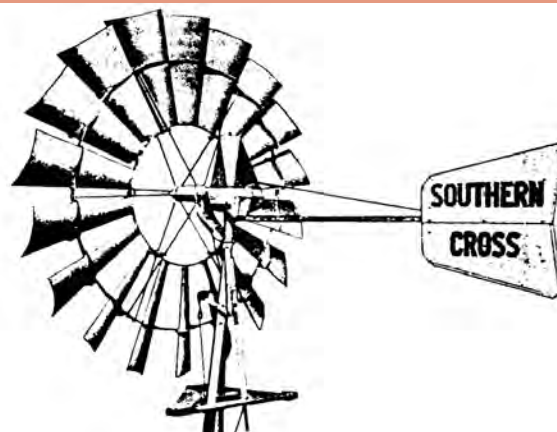
## Building a $\frac{1}{3}$ scale Southern Cross windmill

AND now for something completely different!

I have always liked windmills – they are an iconic part of the rural landscapes that I have lived in or near during various times in my life. Unfortunately, they are now fast disappearing with the modernisation of agriculture and the advent of solar powered bore pumps.

The Southern Cross windmill design originated in 1903 at the Griffiths Brothers foundry in Toowoomba, Queensland, which had been operating since about 1871. It was designed by George Griffiths, the son of the original foundry owner John Griffiths.

Following the success of his all-metal windmill design, the foundry began specialising in windmills and water supply equipment and adopted “Southern Cross” as a trade name.



I decided to build a model of a 30 foot Southern Cross ‘FA’ pattern tower with an 8 foot diameter ‘IZ’ pattern head, as this combination seemed the most visually appealing to me, and I think it has been one of the more popular Southern Cross versions for practical reasons.

Scaling this unit down by  $\frac{1}{3}$  would give me a 3 metre tower with an 800 mm diameter wind wheel, to nearest metric round numbers. Following from the original, the scaled down pumping stroke would be 50 mm. The geared head of the model has a reduction of 3:1, the same as the original.

The thing that turned my thoughts into reality was my recent purchase of a TIG welder. I thought a project like this would be an ideal training ground to learn how to weld on the job, rather than playing around welding endless boring test pieces.

I was right – a very large number of welds of many types were needed, and although I wouldn’t claim to be a good welder I’m certainly a lot better at it now than when I started!



To be continued...

*Article and photos by Jim Clark*

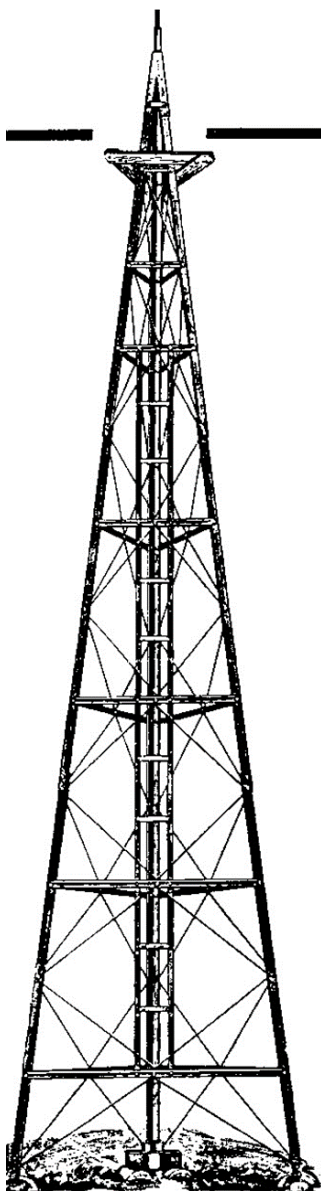


Illustration shows “FA” Pattern Tower for “IZ” Pattern Windmills (including Stub Tower for Windmill).

The Southern Cross windmill was extremely successful and it became one of the most recognisable rural brands in Australia. It was extensively exported to Southern Africa and the Middle East, and also into Britain and the USA during and after the Second World War.

Most of the associated business at the Toowoomba foundry site ceased operations in the 1990s, however, a limited range of Southern Cross Windmills continue to be produced by the Southern Cross division of the Pentair mining and agricultural group.

So why build a model? Windmills are quite popular as garden ornaments, but unfortunately even the best of these is little more than a toy and generally so poorly built that they don’t survive outdoors for long. I wanted more – a proper working replica, that would be capable of reliably pumping water for many years to come.

I have had the idea of building a windmill for a long time, and I had accumulated quite a bit of research information, including Southern Cross catalogues and brochures showing the various combinations of towers and mill heads and wind wheels that have been available during the past 100 years.

*(Illustrations from a USA agent’s catalogue circa 1950)*



## March public run day



Steve Briggs on Tom Winterbourn's Black 5 thunders over the steel girder bridge spanning the tunnel exit lines.



Two 5" gauge locos on different tracks: Allen Ward and his battery-powered "Waterloo" alongside Steve Reeves and his gas-fired "Blowfly".

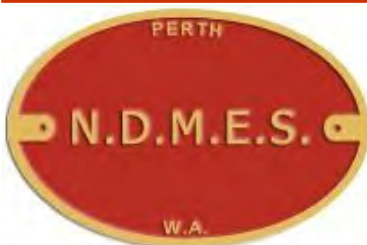


The morning after....! Tania Mackellar relaxes in the station with some BBQ lunch, with hair still manicured following her daughter's wedding the previous day. No sooty driving face on this occasion!

Right Peter Smith seemingly makes his way through the lush outback driving Ron's Collins red Heidi.

Below right: The expression never changes! Noel Outram with his battery-operated diesel.

Below: "Thank you very much!" Peter Smith takes lunch from Phill Gibbons.  
*All photos: Tom Winterbourn*



Northern Districts Model Engineering Society (Perth) Inc.

All correspondence to:-  
PO Box 681  
Balcatta  
Western Australia 6914  
[www.ndmes.net](http://www.ndmes.net)

## DISCLAIMER

Steamlines is the newsletter of the Northern Districts Model Engineering Society (Perth) Inc. and is published by volunteers for the sole purpose of disseminating news and information relating to the hobby of model engineering for the personal enjoyment of interested parties.

Any statements made or information given are the personal opinions of the individuals credited and do not represent the policy, procedures or position of the Society or of any other organisations on any matter unless they are specifically identified as being formal statements on behalf of the Society or such statements are credited to an elected representative of the Society's Executive acting in their official capacity.

Any photographs published may have been taken out of context or posed or edited or modified to enhance their entertainment value or visual appeal and do not implicitly or explicitly depict the standard operating procedures and safe working practices of the Society. Copyright remains with the original authors and photographers and the content must not be reproduced in whole or part for any purpose other than the personal entertainment of the recipient.