



January—February 2008

Steam Boat News by Bob Tanner

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I wondered how long it would take for my friend Wally Swift to build another steamboat—this is his 3rd steam boat—after his reluctant decision to sell 'Lady Roma' to a local SBAA member. Wally in his generosity very kindly lets me keep my own boat, now re-named "Volatility", in his yard, so of course I get to meet up with him for a regular chat about steamboats and associated topics.

Above: Wally Swift at work in his shed on his latest steam boat.

Photo: Bob Tanner

Although not an NDMES member, Wally is well known here in the West both in the steamboat and hovercraft fraternities.

(Continued on page 4)

CALENDAR OF EVENTS 2008

Public Run Day	Club Track Site Vasto PI, Balcatta	11:00 am—3:00 pm	Sunday 27 January
General Meeting	Club Meeting Room Vasto PI, Balcatta	8:00 pm	Friday 8 February
Special Night Run	Club Track Site Vasto PI, Balcatta	Setup from 3.00pm Run 4:00pm—8:00pm	Saturday 16 February
Public Run Day	Club Track Site Vasto PI, Balcatta	11:00 am—3:00 pm	Sunday 24 February

January General Meeting

The January General Meeting was held on Friday 11 January 2008 at the Society's meeting room commencing at 8:00pm, chaired by Ken Austin.

The full Minutes of Meeting are enclosed with Steamlines as a separate Supplement for members. Some highlights of general interest are reproduced here.

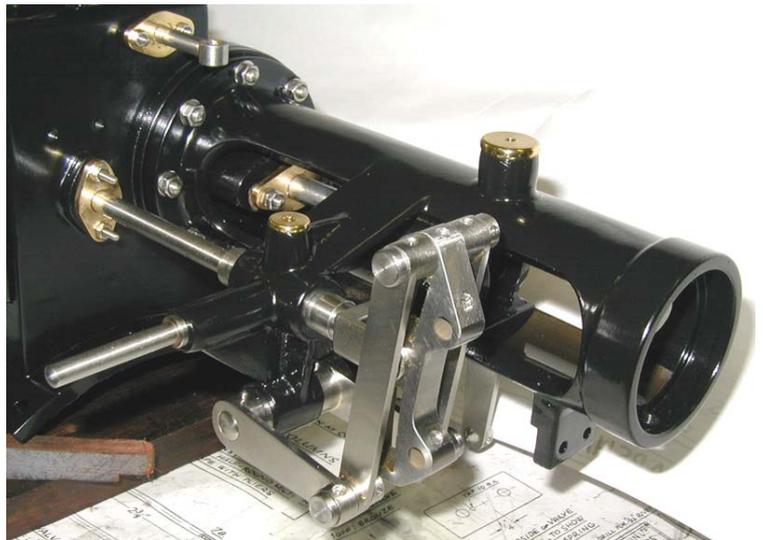
Model Engineering:

Jim Clark – Showed the 3" Alchin cylinder assembly, which continues to grow with the working governor and expansion links fitted. All completed to Jim's very high standard.

Ken Austin – Showed a stainless steel ash-pan for his 4" traction engine. It has been designed to be simply inserted and removed from the fire box. Other 4" builders were very interested.

Andrew Manning – Showed the partly completed connecting rods for the Springbok rebuild. Andrew described the machining process he used. This resulted in Phill Gibbons and Ken Austin describing their respective methods for machining connecting rods.

The formal meeting closed at 8:50pm, and informal discussions continued until after 10pm.



Part of the 3" scale Alchin cylinder block shown at the January General Meeting. This view shows the valve linkages and trunk guide.

Photo: Jim Clark

Coming Events

Those on the Committee please note that the next COMMITTEE MEETING is on Tuesday 5 February at 8.00pm. The regular Calendar of Events is on page 1.

At this stage there are no separate birthday party bookings.

Bore Modifications and Reticulation Works

As detailed in the President's Report on page 3, substantial modifications have recently been necessary to connect our reticulation system to the BMX bore. Here are some photos of the work being carried out.

Below: Ian Huxtable doing some fitting on a bit of polypipe.



Above: Andrew Manning manoeuvring some polypipe into place at the joining point to the BMX water line. Photos: Milton Smith

President's Report

by Milton Smith

CHRISTMAS FUNCTION — The Christmas function was well attended and enjoyed by all those present. Several members suggested that in 2008 we might be able to have a function at a restaurant, which gives the ladies a “night off” as well. Several members enjoyed driving locos before tea. An enjoyable feature of the evening was the delightful flute recital by Lisa Costall.

LATE AFTERNOON/EVENING RUN — As a result of the enjoyable running of locos at the Christmas function, it has been decided to hold members and friends run on Saturday 16 February 2008. The grounds will be open from about 3.00, with running to commence about 4.00. To enable the cooling down of locos and/or road vehicles, it is proposed that running should conclude about 8.00pm so that everything can be put away before it gets too dark. As far as eats and drinks are concerned, the barbecues will be available, and there will be no formal time to have a meal. Castledare members have also been invited to attend. It will be great to see a representative rollup of our own members and locos.

MEN IN SHEDS (MIS) — The City of Stirling is proceeding with their plans for this facility. When the shed is built, it will have a permanent manager on site, and in due course an advertisement will be placed seeking applications for the position. The City raised the matter of the location of the shed with us, and negotiations are continuing. One option is to locate the building close to the western boundary at the SW corner.

This allows for a maximum area for asphaltting and parking. It may be possible to relocate the club's workshop to abut the MIS shed, with a trade-off of some of our land. We have suggested that the club's building, particularly the upstairs section which we use only twice a month, might be able to be made available to the BMX as well as the MIS. All this is in the negotiation stage, and we have told the City that any proposals from the City would have to meet with our member's approval.



THE BORE — Our bore has failed and to get it running with a new pump and a reworked or new bore would be very expensive even with a subsidy from the City. The BMX has agreed to allow us to tap into their facility, and this has been started, with the result that the grounds are beginning to look “nice” again. There is still a bit more to do to tidy up the electrics so that we each actually pay for the power that we use. We intend to put in some bayonet style stand sprinkler heads, the ones at ground level are somewhat vulnerable.

GROUND LEVEL TRACK — Tony Jones, Steve Reeves and Ian Huxtable have been working away steadily on building sections of straight track. We are waiting official confirmation from the Lotteries Commission that our grant application will be approved. This advice is expected by the end of February.

PORTABLE 7¼”and 5”GAUGE TRACK — Work is proceeding on this, with some of the pieces coming down from Ken's factory for finishing operations.

Milton Smith, President



Left:

Right:
Ron Date
with lady
passengers

Photos:
Milton
Smith



(Continued from page 1)

Some time ago when visiting him to catch up on things and do some work on my steamboat, I sensed something 'different' was going-on, and a quick glance at the drawing on the work bench confirmed my suspicions – there was his Stuart #1 engine with his small vertical boiler superimposed on the drawing – and I quickly had my answer!

Wally is a 'can do' type of person, and it was during my following visit that I noticed sheets of marine ply, epoxy resin, cloth, micro-balloons, etc. had been delivered to the workshop. The new boat is a simple free-lance design 10ft x 5ft beam, built with an emphasis on keeping the weight down. It was designed to smaller dimensions than the previous boat for easier handling by Wally—well after all he is in his 'eighties'— but you wouldn't think so to see him on the job!

There has been steady progress with construction and assembly to date. He has decided to use his existing vertical fire-tube boiler to steam the Stuart engine, the same combination which was used successfully in steam boat number one. Engine drive is via a chain and sprocket arrangement similar to that fitted in my boat, which is convenient for experimenting with different engine/prop shaft ratios.

This engine is fitted with a condenser unit to limit the quantity of water carried on board. His condenser consists of a 'coil' wound round the engine exhaust pipe. This is Walter's 'combination air/water-cooled' condenser—he is not known for sticking to convention, and often experiments with doing things an alternative way!

Once the new road trailer is ready and the small details on the boat are attended to, we are all looking forward to launch day! Watch this space!!

Although Wally is not an NDMES member, this article provides some general information on local model steam projects that are being worked on outside of the club and the locomotive arena.

Bob Tanner



For the eagle-eyed rivet counters, please note that the ball valve located under the safety valve was used only for the hydro-test, it will not be left fitted on the boiler!:

Photo: Bob Tanner

NEWS ITEMS WANTED

This is the continuing and insatiable call for more items for Steamlines. So far we've had a good cross-section, but I'm running low again as usual.

How about a few words and photos showing your current project? An article about somewhere you've been?

Or a short article on how you solved some workshop problem? Please email your material to:

jimclark@hardwareandsoftware.com.au

or post c/o Secretary, PO Box 681, Balcatta, WA 6914

A Grate for "Andrew G. Trigg"

by Milton Smith

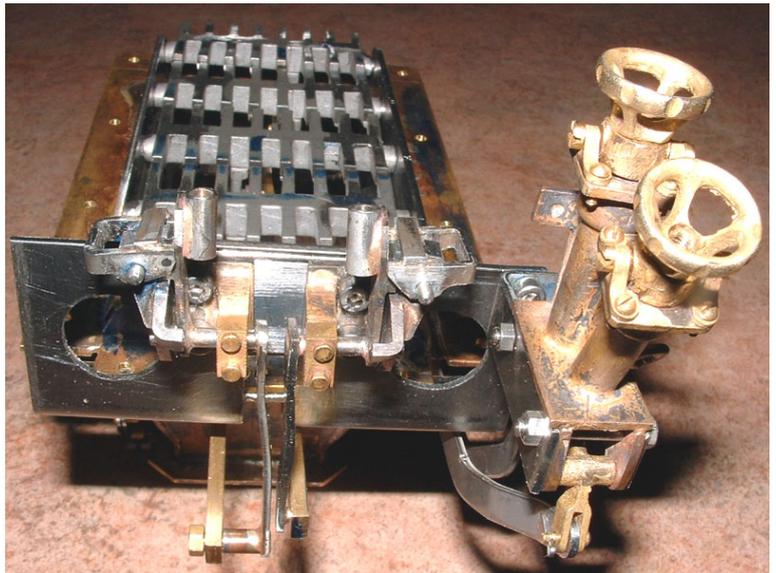
As most members know I have been building a version of "Simplex" which I have named "Andrew G. Trigg." The design has been much modified to the extent that it is now a 2-6-0 tender engine with a Belpaire boiler. The tender is finished but has been modified from Ernie Winter's drawings of the NSW Railways C38 class. It is slightly shorter and wider, and the bogies are also slightly shorter. One of the features is the use of extruded aluminium araldited onto the footplates to produce an acceptable chequer plate.

Several years ago whilst reading Doug Hewson's articles on the BR Standard Class 4 2-6-4 tank locomotive I saw the drawings of the grate and ash pan that was to be fitted to that model, and decided to modify it to suit "AGT." It was fortunate that one of my earlier modifications to Martin Evans's original design was the raising of the boiler by about $\frac{3}{4}$ ", thus allowing room to place the ash pan and grate under the boiler.

The assembly has three separate systems:

1. The rocking grate
2. The damper mechanism
3. The ash dumping mechanism

The rocking mechanism is quite complex and fiddly, but it works. Doug Hewson supplied 4 sections of cast stainless steel grate, and these are linked together to rock/shake in 2 groups of 2. In the original they were in 2 groups of 3.



The damper mechanism is controlled by two hand wheels set up on a pedestal, which is a beautiful lost wax brass casting. The bending of the coupling rods which are made from stainless steel strips (kindly cut for me by a friend of Ernie Redford) proved quite difficult compared to the test ones that I made using mild steel. Another interesting exercise was the drilling of $\frac{1}{32}$ " holes through the $\frac{1}{16}$ " brass rivets which hold the rods in place.

The dumping mechanism was fabricated from stainless steel with both dump doors being coupled.

The grate is permanently attached to the boiler using 3mm stainless steel cap head screws. The ash pan door mechanism has to be attached after the boiler is fitted. It is all a tight fit. The only casualty has been the brake rods. On the drawing that I made it clearly shows that they foul the ash pan dump door mechanism. This problem however is solvable.

The photos show various views of the completed but unpainted ash pan and grate.

Milton Smith



Top left: The dump doors viewed from underneath.

Right: The damper hand wheels.

Bottom left: The dump mechanism.

Photos: Milton Smith



The Zig Zag Railway

by Jim Clark

The Zig Zag Railway just outside Lithgow in NSW was originally built in 1869 to bring the railway line down off the Blue Mountains plateau to Lithgow and the western plains. It consists of three steeply sloping tracks in the shape of the letter 'Z'. Getting trains up and down was very laborious and it was not long before a new, longer tunnel was bored through the cliffs making the zig-zag section redundant.

It lay abandoned until 1972 when a group of volunteers began relaying track and purchasing rolling stock. It now operates as one of the region's major tourist attraction. Trains operate every day, usually two or three times a day, more in peak holiday times. At present, steam locos operate weekends and Wednesdays, railmotors and diesel locos on other days. Most of the steam locos are old Queensland rolling stock, recovered from Queensland Rail or from sugar cane railways.

There is a very interesting lever and rod operated signal box at both Top and Bottom Points. While the loco changes ends for the next leg of the trip, passengers are free to wander about the siding and if you look sufficiently interested, the Zig Zag staff are happy to show you around inside the signal boxes and answer questions. The stops at each point are quite short, so you do need to be quick. The volunteer staff are friendly and ready for a chat, and happy for you to take photos pretty much anywhere, within reasonable safety limits.

I believe it is also possible to arrange a footplate ride with the crew, although that wasn't possible the day I was there. The whole trip down and back takes about an hour and a half, and is a really interesting train ride with excellent views of the famous sandstone viaducts and a



Above: The train crossing one of the elegant sandstone viaducts.

Below left: A very small and happy Train Driver (no, there really was a Big Person actually doing the driving) . Photos: Jim Clark

ride through a 500m long tunnel section just out of Clarence Station at the top.

For serious photographers, there is a very scenic walking trail (with convenient picnic tables for lunch) from Clarence all the way down the gorge to Bottom Points. You can buy a return-only ticket at Clarence, walk down and catch the train back up. The walking trail has several really good vantage points where you can capture the loco slogging back up the steep gradient or crossing the viaducts. If that's not enough, there are access points along the road near the top tunnel and lots of photogenic opportunities around the yard at Clarence Station.

You definitely need to set aside most of a day to really do this interesting piece of history justice, especially if you want to take advantage of the walking trail and do the full train trip as well. It's a good idea to arrange your schedule well ahead and check with Zig Zag Railway so that you are there on a day when they are running steam. The Zig Zag is just outside Lithgow and is an easy half-hour drive from any of the tourist towns in the Blue Mountains (Katoomba being the main one), or from Bathurst. There are lots of other interesting attractions nearby, such as Jenolan Caves, as well as all the arts/crafts/history of the Blue Mountains area, so it can easily be integrated into a more 'touristy' itinerary to maintain domestic harmony. I highly recommend the Zig Zag Railway as a must-see destination any time you are in NSW.

Jim Clark



7¹/₄" Rail Construction Report

by Tony Jones

I will make a brief description of the rail jig, which is constructed from RHS and laid out like a large table with 45 cross bars of 25 x 25 x 2.0 RHS spaced at 150 mm to give the spacing of the sleepers. Over these bars slides a 300mm length of 30 x 30 x 2.5 RHS with two lock screws to hold it in place when lined up in the profile required. At the moment we are set for dead straights. This sliding sleeve has the square blocks welded vertically on its centreline to contain the screwed, pointed dowel of the location plate. This has dowels to fit the tie bars which are then in alignment with the crossbars.



When we started in November there were insufficient location plates and we were also short of sliding bars. I scrounged some 30mm RHS and Ian Huxtable cut them up and drilled them to take M10 pinching screws. Now we have a full complement of jig plates and it is easier now that all the gear is in good working order.

Saturday 8 December we spent 4 hours assembling one rail section, it looked a bit better than number 1. Sunday Steve Reeves was in attendance and gave me break from welding. Rail no.1 was welded each side of 3 rails, that is a total 240 welds, now we are welding only 120.

Tuesday 11 December was a case of finishing off the welding and setting out the next set of rails.

Saturday 15 December was a damp day and we had to protect the welder with a plastic sheet. Another rail was finished and the next set put into place. We found we were out of the 25 x 10 third rail, which meant I had to go to DiLena Metal first thing Monday morning to order 4 lengths. They sent 25 x 8 by mistake, so we were held up again. It eventually turned up on the 19th. When I was at DiLena's I had noticed earlier that they had boxes of welding rods going cheap, \$20.00 a box of 3.2g so I said yes please. Well, when I opened the pack it became obvious why they were cheap. They had been subjected to the damp somewhat, sometime. A bit difficult to use but give good results.

Tuesday 18 December started as a wet day and the welder was carried down inside the steaming bay for safety reasons, however the weather picked up and it was business as usual. I was assisted by George Palmer and we straightened bar and loaded the jig and set out the 7.25" rails. We clamped the straightest bar to a length of 1200 x 25 RHS and proceeded to weld the outside edge only before moving the RHS along for another section, then we backtracked to do the inside alternately. We found this procedure keeps the rail straight.

The busy part of this job is moving the clamps along in sequence, the faster the clamps move the faster I can weld. We completed this rail without the third rail and took it off the jig. This day was the first time we used heavy spacers provided by Ken Austin. These were modified by Ian Huxtable to give more clearance. They will definitely be most useful when the third rail is dropped into position. Gauge is checked as we go with a spacer that I made in the beginning. Two more rails were set out on the jig before knock-off time.

Now for the squib I will throw amongst the crowd. To use fishplates or not to use them is the question, what is the school of thought for connecting the rail sections together? All the latest literature I have been given to read about other clubs is that the modern way is to fully weld all the way. It is my humble opinion we should do so. However there is the older school of thought that says its better to bolt on fishplates.

Well let's look at how the full size traditional method worked, the old bull nosed rail was shaped on its sides and into this hollow fitted the fishplate so that the rail could slide longitudinally but not dip when wheels passed over it. As a youngster I frequently watched the Castles and Manors pass my 'nose' at 100 mph and saw the rail dip as the load changed from one rail to the next. Whichever way my 'Ganger' Uncle tightened those nuts they still dipped.

You may well say we have to look after expansion on a hot day. But do we? There are about 8 lengths along the back straight, that's 48m before a bend. The temperature differential could be 45°C, but as we have painted the rails silver this reflects some heat. Looking further into this, the metric coefficient of linear expansion for steel is:

$$A = 13.0 \times 10^{-6} \times (T_1 - T_2) \times \text{length in metres} \times 1000$$

$$\text{Let } T_1 - T_2 = 40^\circ\text{C, Total rail length} = 48\text{m}$$

$$\text{Substituting, } .00000013 \times 40 \times 48 \times 1000 = 0.2496\text{mm}$$

Come on guys this is nothing, if we had 100km in one straight line we would have a problem as they do on the Nullarbor. So let's fully weld and be done with it. Who wants to make little plates and tip the rail on edge to drill holes in the rail and then later see the joins rocking up and down? However I've asked for your opinion and majority rules.

Tony Jones



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Paul Costall, who is 6' 4" tall and therefore not entirely suited to the low seating arrangements, driving Ron Collins' Ruston Proctor traction engine at Bunbury.

In the background is JD Giddens on Clive Jarman's traction engine with Linda Jennings as passenger.

Photo: Jim Clark



WANTED

Simplex or similar — castings and/or drawings, or part built, for a basic 0-4-0 or 0-6-0 tank engine as a starter project. If you might have something suitable, please contact Geoff Windsor on 9247 2178 or 0448 877 010.

POSITIONS VACANT

Painters — We need to wire brush damaged areas on the storage container, then prime and paint the whole container. Volunteers are needed — please contact Andrew Manning for more details.

Grounds Maintenance — At this time of the year the leaf fall is beginning to build up to dangerous levels with respect to fire risk. It would be of great assistance if members could come down for an hour or so and help rake up and move the litter. We have all the kit you will need, just bring your own gloves. Come down any Saturday or Tuesday morning.

The Traction Engine shown in the photo above is my Ruston Proctor Light SD Steam Tractor. It is single cylinder, has a copper boiler and the scale is 4" to the foot ($\frac{1}{3}$ full size).

The engine was commenced in 1989 and completed in 1992, with a construction time of about three years. I was able to make the time available because I was not self employed at that point.

Its first début was at Wilson Park in June 1992. The traction engine was exhibited and run until about 1998 when work, family and other commitments resulted in the engine languishing in the shed for the next eight years. It was taken out of its forced retirement in 2006, and the boiler was tested and re-licensed for the Sandgroppers Meeting at Bunbury that year.

Its second recent public appearance was in October 2007 at the Sandgroppers Meeting in Bunbury.

Ron Collins

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