



November 2001

The 2 1/2" G Purley Grange by Phil Gibbons

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Your Committee

President Ron Dale	9246 2835
Vice President Ian Allison	9490 2381
Secretary Andrew Manning	9446 4825
Treasurer John Martin	9448 8843
Committee Members	
Lindsay Adams	9447 4646
Jim Clark Newsletter	9446 5870
Phil Gibbons	9390 4390
David Naeser Safety Officer	9375 7785
Ernie Redford	9446 4513
Steve Reeves	9354 1395
John Shugg	9246 9549
Publicity & Events	
Jim Crawford	9276 5464

NDMES
PO Box 681
Balcatta 6021
Western Australia

Where did it start? The 2 1/2" Grange started about 4 years ago after reading in AME of a small gauge rally at the Sydney Society of



Phil Gibbons takes his fine new Purley Grange for its first run.

Photo by David Naeser

Model Engineers, where about half a dozen turned up but none were runners.

I remember well a regular passenger hauler in this gauge. It ran every month at ILS and belonged to Graham Sturday. 3801 did its turn at passenger hauling hour after hour with one passenger car with driver, plus three or four kids.

A friend, Russell Dunn, phoned me one night while on holiday in the UK to say that there was a complete set of Grange castings and drawings available for £50 - so the idea was about to become a reality.

It was more the challenge to build something that hadn't been done for a long time. From the start it was to be a passenger hauler.

(Continued on page 3)

CALENDAR OF EVENTS

Club Run Day and Public Run Day	Club Track Site Vasto Pl, Balcatta	10:00am—4:00 pm	Sunday 25 November
NDMES Christmas BBQ and Run	Club Track Site Vasto Pl, Balcatta	1:00 pm onwards	Sunday 9 December
Boxing Day Evening Run	Club Track Site Vasto Pl, Balcatta	Proposed — see page 3	Tuesday 25 December
New Year's Day Breakfast Run	Club Track Site Vasto Pl, Balcatta	Proposed — see page 3	Tuesday 1 January 2002
General Meeting	Laurie Strutt Park Elvire St, Waterman	8:00 pm	Friday 11 January 2002
Club Run Day and Public Run Day	Club Track Site Vasto Pl, Balcatta	10:00am—4:00 pm	Sunday 27 January 2001

Note: There may be additional Birthday Runs or other events scheduled at short notice. Contact Jim Crawford or Andrew Manning for latest details.

NDMES Annual General Meeting 2001

The Annual General Meeting was opened by the President Ron Date at 8:00 pm with 29 members present.

The Minutes of the previous AGM held on 13 October 2000 were read, moved and carried as a true record of that meeting. There were no matters arising.

ELECTION OF OFFICERS — The President Ron Date declared all positions vacant and called for the appointment of a Returning Officer. Jim Crawford volunteered and was duly elected.

Nominations were then called for the positions of:-

PRESIDENT — Ron Date was nominated by Dennis Lord, seconded by Andrew Manning. There being no further nominations Ron Date was elected unopposed.

VICE PRESIDENT — Ian Allison was nominated by Ron Date, seconded by John Martin. There being no further nominations Ian Allison was elected unopposed.

SECRETARY — Andrew Manning was nominated by Doug Baker, seconded by John Shugg. With no further nominations Andrew Manning was elected unopposed.

TREASURER — John Martin was nominated by Doug Baker, seconded by John Shugg. With no further nominations John Martin was elected unopposed.

COMMITTEE — The following were nominated from the floor:- David Naeser, John Shugg, Ernie Redford, Jim Clark, Lindsay Adams, Phil Gibbons and Steve Reeves. All were duly elected.

October General Meeting

The October General meeting followed immediately after the AGM. There were no visitors present.

GENERAL BUSINESS — If the Society facilities are to be maintained and expanded there will need to be greater participation by members on weekends and at Wednesday working bees. Please help out!

The Society's re-conditioned trailer was stolen from the site during the week. The BMX club are also having a great deal of strife with vandals at the moment.

MODEL ENGINEERING — Dick Langford displayed progress on machining of the various curves on a cast steam dome.

Steve Reeves – showed point throw over for the ground level track.

Bob Brown – had a tender pump to LBSC design, and donated it to the Society for the club loco.

David Naeser – formers for flanging up boiler plates.

Ron Date returned to the chair and the meeting thanked Jim Crawford for his role as Returning Officer.

GENERAL BUSINESS — George Strickland, the Society patron, had apologised for not being able to attend the AGM. He has stated that he would be pleased to remain patron of the NDMES.

Changes to the Constitution as proposed by John Shugg and circulated prior to the AGM were considered. See September Steamlines for details of the proposals.

Each of the two changes was considered separately, the first relating to inclusion of a provision for public run days, was moved by Doug Baker, seconded by Dennis Lord and the motion was passed unanimously.

The second proposed change related to the appointment of boiler inspectors and a senior boiler inspector.

There was a great deal of discussion on this proposal, specifically with respect to the position of senior boiler inspector. It appears this requirement was originally included to ensure cascading of AMBSC information to all Society boiler inspectors.

Neither the motion nor several attempted amendments succeeded in being acceptable to the Meeting. It was then agreed that the society boiler inspectors would make a proposal to a future General Meeting.

With AGM business concluded, the October General Meeting continued as minuted below.

Andrew Manning

minutes of meeting by Andrew Manning

Doug Baker – described progress on his marine steam engines. Presentation made to the Society of locos received by Doug from a deceased estate. These locos were given into the care of Dean Brennan and Ed Brown for completion and on-going stewardship.

Phil Gibbons – Discussed the challenges of making a built-up crankshaft and silver soldering same.

Andrew Manning

Subscriptions Reminder

If you haven't paid your 2002 membership subscription yet, it was due and payable as of the October meeting, so please let Treasurer John Martin have your payment as soon as possible.

Please post your cheque made out to NDMES to The Treasurer, PO Box 681, Balcatta, WA 6021.

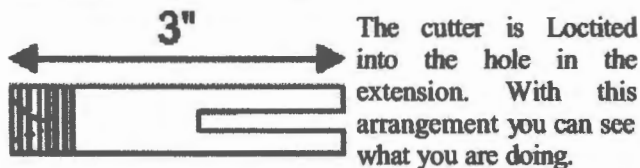
2 1/2" G Purley Grange by Phil Gibbons

(Continued from page 1)

It was a pretty straight forward project with the exception of a few parts. The blueprints were very sketchy in places so I assume there was a serial in ME.

Making small parts on a big lathe and mill was difficult. I had to buy a magnifier light, a 4" grip-true chuck and a 2" 4 jaw chuck.

The small cutters for the ports etc. (1/16" dia.) had to be mounted in extensions so that I could see the job under the Autolock (See sketch).



The cutter is Loctited into the hole in the extension. With this arrangement you can see what you are doing.

Port milling with the 1/16" dia. cutters was done taking only .005" cuts. Cylinders are gunmetal fitted with aluminum bronze rings. They seem to work well.

The loco is fitted with slip eccentric valve gear. The chassis was air tested with a small Arb 12 volt compressor and ran sweetly.

Lubrication has been a problem. You just can't fit a conventional mechanical lubricator inside the chassis so it is fitted with hydrostatic lubricators, which on its first outing *didn't* work.

The boiler was completed in about a week. It is built to the English drawings with only the stay spacing altered to suit our Boiler Code.

All copper is 1/16" and there are 5 x 3/8" dia. fire tubes with 1 x 5/8" dia. superheater flue. We are lucky to have Bob Brown as a Boiler Inspector, as he has built and run a 2 1/2" gauge a few years ago. With Bob's help no problems were encountered.

The boiler is not lagged so your workmanship is on display under a thin layer of paint. It is all silver brazed with SBA 245. Tender and plate work was straight forward, all done in 1mm plate.

The engine is fitted with an axle pump of 5/16" bore and 5/16" stroke. The tender has a 3/8" bore x 1/2" stroke hand pump.

The main pipe work on loco and tender is all 3/16" O.D. thin wall tube .012" thick. Most of the fittings are oversize, but this is a plus as you can't tell when the axle pump is on - there is so little pressure rise in the pipes and fittings.

The first track trials had a lubricator failure, hopefully this is now rectified. Future Run Days will tell.

Phil Gibbons

NDMES Driver's Licences

We are progressing with implementing locomotive drivers licences for Society members qualified to drive. To date some 20 training booklets have been issued and completed answer sheets have been received from about half of the potential drivers. Some candidates have had considerable previous driving experience and we have been able to issue licences to those whose experience exceeds the minimum requirements - and who have handed in correctly completed answer sheets. Accordingly, licences were issued to four members at the recent General Meeting.

Driver's Licence No.001 was reserved for a member whose experience and contribution to the society could serve as an example to others in the club. As such, Licence No.001 was offered to Doug Baker who graciously accepted it. Licences were also issued to John Shugg, Ernie Redford and Ed Brown. Congratulations to Doug and all new licencees on being the first to qualify for the new NDSME driver's licenses! We hope this is the start of a trend and that soon all members will be qualified to drive on public running days. So please, let's have your completed questionnaires returned to me or another committee member.

David Naeser

NDMES Christmas BBQ Run

The Society's official end-of-year Christmas function will be a BBQ and member's only run following a private Run Day booking for the Lathlain Play Group on Sunday, 9 December.

The Play Group is booked 9:30 am to 12:00 pm, so please come early to help out and then stay on for the Christmas BBQ and run, from 1:00 pm onwards.

BYO grog and BBQ food, the BBQs will be hot and the fridge cold. If you have a loco to run, bring it along and let's have a really good turnout of locos circulating on the track, just for our own enjoyment for a change.

Other Member's Run Days

Some other members-only Run Days have been proposed over the Christmas/New Year break.

Boxing Day BBQ and Evening Run — starting from about lunchtime Boxing Day and on into the evening for those who feel like it.

New Year's Day Breakfast Run — traditional early morning get-together — don't forget the champagne!

Let the Committee know if you are interested. Final details will be published in the December newsletter.



Northern Districts Model
Engineering Society Inc.

Track Site:-
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Balcatta
Western Australia

All correspondence to:-
PO Box 881
Balcatta
Western Australia 6021

<http://www4.tpg.com.au/users/jimclark>

President's Report — a New Year

by Ron Date

Society objectives for the next year are already in place and they *follow on from the last year as set by the previous Committee under different leaderships.*

To consolidate these, the Society needs your commitment in whichever way you, the individual member, decides you can help.

In simple terms we are irrevocably committed to the new clubroom/workshop project and all the pros and cons of that. To quantify those into "what ifs", try thinking about these:-

1. If we were not complete the building in a reasonable time how would the Council react?
2. If we were to cease Public Run days, how would that affect (a) Our financial situation; (b) the Council's view of our activities; (c) Your views on both, and what you think we are about?

Being an entirely voluntary organisation, we need to determine what is a sustainable level of involvement in our hobby, both collectively and individually. The total of your *individual contributions equals the Society's capability.*

So at the next General Meeting let's hear what you will do, so that hopefully everyone will have a definite role to play and we don't have a lot of dodging and weaving every time the Society needs something done.

FOR SALE

7 $\frac{1}{4}$ " FS 480 WAGR — Drawings, frames, wheels, axles, tender frames, cylinder set, smoke box & chimney.

6" dia. 10g copper tube 1.97m long. Asking half book price, will cut if required.

5" MAID OF KENT — wheels, frames, axle boxes, odds and ends.

3 $\frac{1}{2}$ " TICH — Kit of all parts, the construction book and drawings. Partly made up.

3 $\frac{1}{2}$ "/5" TRACK — raised track similar to the NDMES portable track, $\frac{3}{4}$ of a circle, bolt together sections.

Contact Noel Outram on 9525 1234 for more details on any of the above items.

You are the Society, it is your Society whether you are a new or a long-term member. It is up to all of us. *So get out of your comfort zone occasionally!*

On the topic of portable track use, consider whether we should continue attending outside events come what may, or should we target specific events only, e.g. AMRA, or only those that make us big dollars? Acceptance of these events can only continue if and when enough people commit to do them.

Safety issues need to be addressed. Some of these were going to be done by various members who obviously have forgotten, but on looking through minutes of previous meetings and on the memory of previous years, we are just about all in that category, so no names no pack drill — let's just nail them in priority order. Some of these are as follows:

- Fire safety
- Fence to overbridge
- Overhanging bushes
- Old engine in picnic area
- Track condition
- Track at traverser into steaming bay

Ron Date

POSITIONS VACANT

Some specific tasks that you could help with:

- Painting roof trusses in steaming bay (All you need is a wire brush, ladder and elbow grease)
- Cleaning junk out of steaming bay
- Repairs to bridge decking
- Ground level track work — see Ernie Redford.

Steamy Night Out...

Everyone interested in STEAM, whether it be in the form of launches, locomotives, stationary engines or models, and their l-o-n-g suffering partners, are invited to an informal Christmas get-together to be held at the Flying Angel Club in Fremantle on Saturday, 24 November.

There will be a BBQ at \$16.00 per head and steam videos will be shown afterwards.

Please contact Doug Baker on 9341 1630 before 21 November for details and booking.

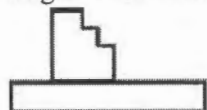
Check out your Society's Web Site at <http://www4.tpg.com.au/users/jimclark>

How To Do It – Making Eccentrics

by Phil Gibbons

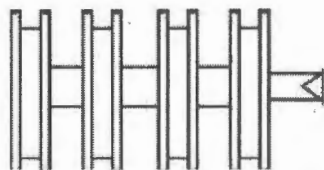
The editor is always looking for articles, so I propose a “How Do I Do It” column. To kick it off I will describe how I manufacture eccentrics quickly, and more importantly, all to the exact same throw.

The procedure is the same whether you have 1 flange or 2. Chuck a piece of bar long enough to turn and part off all 4 and enough to grip by the full length of the chuck jaws. This is important so as to avoid dig-ins and broken tools.



Hang the bar out far enough to turn and part off all 4 without moving the bar as shown here.

Turn the finished O.D. of the flange. If they are single flange, don't centre the end of the bar, turn the O.D. of the eccentric, part off, flange oversize face the next one. Repeat for all other eccentrics.



If double flanged, put a very small centre in the end of the bar (not deep). Turn the bar with centre in it as shown in this sketch.

Part each eccentric $\frac{3}{4}$ of the way through the bar. Leave one side oversize by $\frac{1}{32}$ " and the other by $\frac{1}{16}$ ". Turn and finish the groove as described below.

Tip: To get a mirror finish on steel, use a HSS tool to rough out, use the same tool to finish but first regrind or touch up the tool and hone the cutting edge lightly. Use a very fine stone.

To cut the groove, put the lathe into its slowest speed: you may even have to pull the belt by hand. The slower the better - use raw cutting oil and plenty of it, or heavily oiled coolant. Take very small cuts in depth. You should be able to plunge cut with a full width tool.

Do all 4 to the same dial reading. The actual \varnothing is not important as long as it is within .005" to .010" of the drawing size, but they must all be the same. So if you go undersize on one, machine the rest to suit.

Face to size on one side and part off. Repeat 4 times.



Next a jig is required in steel, brass or iron - at least $2\frac{1}{2}$ times the eccentric width and $1\frac{1}{2}$ times \varnothing round.

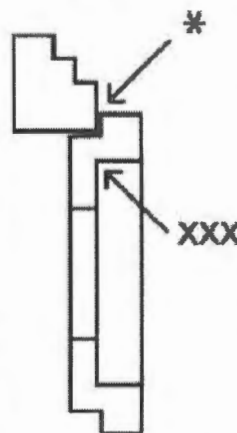
Machine the O.D. true up to the chuck jaws. Turn a step around $\frac{1}{4}$ " long and about $\frac{1}{4}$ " deep as shown here.

Reverse the jig in the chuck. This time use a 4 jaw and hold the jig by the step you just turned. Set it to run out by twice the eccentric throw on your drawing.



Example:

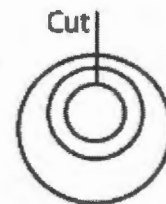
Dial gauge should read at Jaw 1: 0" at Jaw 3: 0.500"



Set Jaws 2 and 4 read the same. Set using the previously turned \varnothing marked "*" in the sketch below.

Now bore the recess marked 'XXX' to suit the finished \varnothing of the eccentrics, plus .001" - .003" oversize in depth. Bore a slightly smaller hole right through the jig to allow it to be squeezed.

Take the jig from the lathe and cut a slit through the thinnest part of the jig as shown at right.



Now put an eccentric in your new jig and the jig into the 3 jaw chuck.

With the jig slit in between two jaws, tighten firmly to grip the eccentric. Drill through the eccentric and bore to a tight push fit on your axle \varnothing .

Easy now! If the eccentric moves in the jig it is near impossible to get it back right, so no rough stuff.

Face the eccentric to the correct width and remove jig from lathe, but before removing the eccentric from jig, scribe a line from the jig slit to the centre of the bored hole - we will use this later when we drill the eccentrics for grub screws.

Repeat for the other eccentrics. All will be as accurate as your 3 jaw chuck. A .002 or .003 run-out will not matter.

This series of articles is for beginners, but some old dogs may learn a few tricks too. If anyone has a machining query, please contact me and we will try to get a regular column going.

Next month we will deal with the drilling and tapping.

Phil Gibbons

Humour Corner

contributions provided by members during the year...

With the approaching holiday season, we will publish some of the humorous items supplied by members during the year. Thanks to all those who have been on the lookout for engineering related 'funnies', the following is courtesy of Phil Frost.

New Fire-Fighting Agent Meets Opposition "Could kill people as well as fires"

Imperial Chemical Industries (ICI) has announced the discovery of a new fire-fighting agent to add to their existing range. To be known as WATER (Wonderful And Total Extinguishing Resource), it augments, rather than replaces, existing agents such as dry powder and Halon, which have been in use from time immemorial. It is particularly suitable for dealing with fires in buildings, timber yards and warehouses.

Though required in large quantities, it is fairly cheap to produce and it is intended that quantities of about a million gallons should be stored in urban areas, and near other installations of high risk ready for immediate use. Halon and dry powder are usually stored under pressure, but WATER will be stored in open ponds or reservoirs and conveyed to the scene of the fire by hoses and portable pumps.

ICI's new proposals are already encountering strong opposition from safety and environmental groups. Professor Connie Barrinner has pointed out that if anyone immersed his or her head in a bucket of WATER, it would prove fatal in as little as 3 minutes. Each of ICI's proposed reservoirs will contain enough WATER to fill half a million two gallon buckets. Each bucketful could be used a hundred times so there is enough WATER in one reservoir to kill the entire population of the UK. Risks of this size, said Professor Barrinner, should not be allowed, whatever the gain. If the WATER were to get out of control the results of Flixborough or Seveso would pale into insignificance by comparison. What use was a fire-fighting agent that could kill people as well as fires?

A Local Authority spokesman said that he would strongly oppose planning permission for construction of a WATER reservoir in his area unless the most stringent precautions were followed. Open ponds were certainly not acceptable. What would prevent people falling into them? What would prevent the contents from leaking out? At the very least, the WATER would need to be contained in a

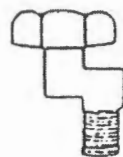
steel pressure vessel surrounded by a leak-proof concrete wall.

A spokesman from the Fire Brigades said he did not see the need for the new agent. Dry powder and Halon could cope with most fires. The new agent would bring with it risks, particularly to firemen, greater than any possible gain. Did we know what would happen to this new medium when it was exposed to intense heat? It had been reported that WATER was a constituent of beer. Did this mean that firemen would be intoxicated by the fumes?

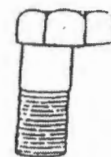
The Friends of the World said that they had obtained a sample of WATER and found it caused clothes to shrink. If it did this to cotton, what would it do to men?

In the House of Commons yesterday, the Home Secretary was asked if he would prohibit the manufacture and storage of this lethal new material. The Home Secretary replied that, as it was clearly a major hazard, Local Authorities would have to take advice from the Health and Safety Executive before giving planning permission. A full investigation was needed and the Major Hazards Group would be asked to report.

Jim Crawford brought this extremely useful range of bolts (available in all Model Engineering sizes) to our attention, courtesy of a UK manufacturer:



For mismatched holes



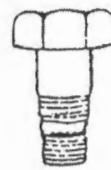
For holes too near the edge



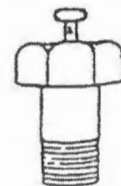
For holes not drilled straight



For holes counter-sunk on wrong side



For holes drilled too big then right size



Hammerhead Bolt For those hard-to-start holes

No model engineer's workshop should be without a full set of these! A few more published next time.