June 2008
No 335

THE GENERATOR

Newsletter of THE PALMERSTON NORTH MODEL ENGINEERING CLUB INC
Managers of the **"MARRINER RESERVE RAILWAY"**
Please address all correspondence to **:- 22b Haydon St, Palmerston North.**

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TRACK RUNNING

This is held on the FIRST and THIRD Sunday of each month, from 1 pm to 4 pm Summer and 1 pm to 3 pm during the Winter. All club members are welcome to attend and help out with loco coaling, watering and passenger marshalling - none of the tasks being at all onerous.

Visiting club members are always welcome at the track, at the monthly meeting, or if just visiting and wishing to make contact with members, please phone one of the above office bearers.

Sender:- PNMEC
22b Haydon St,
Palmerston North

Place stamp here

This Months Featured Model

REPORT on the MAY Meeting.

A very good turn out of members heard **Richard Lockett** give a short talk on milling machines. He dealt with setting the machines up level, and where the turret head can be inclined, how to set it up true to the bed again. He passed on several good tips concerning setting up a machine vice so that it is parallel to one of the axis of the table. Richard also advised that broken milling cutters should not been thrown away as the can be reground into special tools or even boring bars for the lathe or mill.
Richard noted that **Dick Archer** was at the meeting. This had special significance, as back in 1976 Dick had been responsible for instructing Richard in milling operations when they worked together at Industrial Hydraulics.
Graeme Hall had piston for his Offenhauser engine, plus a set of rings, two compression rings and one oil control ring. The piston was approximately 25mm diameter and the width of the rings would have been about 2mm. The oil control ring had little slots, probably a little less than 1mm wide, milled in it. Graeme had made the milling cutter and he displayed it along with several others he had made from Silver Steel, mostly specially shaped for a unusual task.
Merv George had been making some collets but had run into a problem when cutting the slots. The slitting saw grabbed the job and distorted one section of the collet. Next time a piece of aluminium was used to support the collet while the slitting operation was done. This worked well, the piece of aluminium was discarded after the operation.
Ian Stephens had some parts off his Atlas lathe that needed a little attention. Ian told me that he had been offered quite a lot of money for the little van he had made. (see last months Generator)
The offer was declined as Ian has no intention of parting with it.
Doug Chambers brought along the copper boiler he and **Barry Parker** made for the 5"gauge 'Britannia' that Barry bought part built. Doug pointed out that as it has a tapered boiler, sloping and tapered sides to the boiler, it is a very difficult boiler to build not having a straight line as a reference point to work from.

Club Night

7:30pm, Thursday 26 June 2008
Hearing Association Rooms
Church Street, Palmerston North

The cerebral faculties of your committee have once again been put to work and after great trial, exhaustive discussion, and much mental gymnastics, it has been decided that our next Club Night will have the following theme.

Toy Night

Bring along your favourite toy. It could be a model, or a tool, or a teddy bear, or a book, or a bicycle, or something you blow up, or _____

Whatever your favourite toy,
bring it along for show and tell.

COMING EVENTS

Mid Week Run at Marriner Reserve Railway

24th June between 10.00 am and 2 pm
22nd July between 10.00 am and 2 pm
Please contact Doug Chambers beforehand.

Track running at Marriner Reserve Railway

July 6th from 1pm to 3pm
July 20th from 1pm to 3pm

Open Weekends

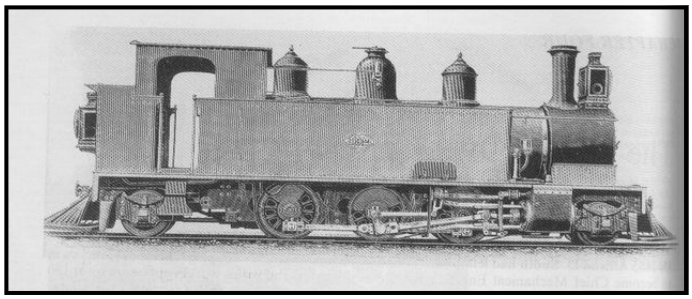
.HAWKES BAY Model Engineers 5th – 6th July

FOR SALE

Brian Wiffin wishes to sell the patterns and plans for his gear hobbing machine. The plans and patterns may be seen at Bruce Geange's home. Please ring 06 357 0566 to arrange a time to see them.
Price to be negotiated.

The closing date for the next issue of The Generator is Friday 11th July

THIS MONTH'S FEATURED MODEL W192



Way back in 1990 with my Allchin Traction Engine nearly finished, the question one asks is "what next'.
Having spent most Saturdays of the previous two years on the construction team building the extension to the Marriner
Reserve Railway I thought that a steam railway locomotive would be the way to achieve some payback.
I'm a bit one eyed so it had to be a New Zealand Railways locomotive.
I started thinking seriously about an F class 0-6-0 saddle tank but there was a couple already under construction by some very capable model engineers.
About this time I purchased the Railway and Locomotive Society's publication "Steam Locomotives of New Zealand" part one by T A McGavin which was my introduction to all the various early NZR locomotives.
Page 44 there's a etching of W W Stewart's, locomotive W192 in a very elegant pose, did some calculations as to its size in 7.25" gauge and was hooked from then on.
Next step was to get some drawings from the fleet engineering office at the Wellington Railway Station as all the old Locomotive design's are on micro film mainly general arrangement drawings and some detail component drawing's.
Patterns were then made for the casting of wheels, cylinders, chimney, horn brackets, saddle and the bogie slide casting in S G iron.
And in no time at all I had a full working model of W192. (Yeah right) editor

Dimensions

Boiler 192 mm dia X 800mm long
3 X 28 dia superheater tubes
18 X 16 dia tubes

Cylinders 55mm dia X 86.6mm stoke
Slide valve
Outside Walschaerts valvegear
Twin Ram axle driven water feed pump
One steam injector
One ejector
Locomotive steam brake
Mechanical lubricator oil pump

W class locomotives 1889 and 1891

The two W class tank locomotives were the first steam locomotives to be built by the New Zealand Government Railways in their own workshops, Addington being the main workshop at that time.
The design of the W's is thought to be the combined efforts of three men, Mr Thomas Rotherham, Locomotive Superintendent, Mr Robert Scott, manager of the Addington workshops and Mr George Pearson, head Draughtsman in the Loco Super's office.
It is believed that the basis of the design of the W was the 2-6-2 Manning and Wardle tank loco's of the Wellington and Manawatu Railway based at their Thorndon depot. The story has it that some NZR gentlemen came one day and ran the tape over it. These loco's also had outside Walschaerts valvegear to which Mr Pearson was very knowledgeable.
The W's used the 2-6-0 J class boiler design and spare cylinder castings which may explain why only two loco's were built.
After construction and trials the loco's were shipped north to the Wellington section of the NZR, which meant working the 1 in 35 grade to Summit at the top of the Rimutaka Incline to which they could haul 120 tons.
In 1902 W192 was modified to work down the Incline which meant having to clear the Fell centre rail so anything low down between the wheels had to go (butchered, springs to mind). W192 also had Westinghouse pump and gear fitted at this time.
With the arrival of a bigger tank loco, class We (modified B class) on this section in 1902 both W loco's went south to the new branch lines out of Greymouth, Dunollie, Blackball and the Fell Inclines up from each at Rewanui and Roa hauling coal out of the Paparoa's down to Greymouth.
Both W's worked here for the next 55 years having a few mod's done over this time ie electric lighting, both being retired in 1959, W192 being preserved, W238 scrapped.
W192 is now housed at Ferrymead in Christchurch.

FOR SALE

26” Chesterman Vernier $150 ,
Small Ryobi bandsaw $50 ,
Small and old air compressor $20 ,
Three sets of rollers for placing under locomotive driving wheels while setting valves or trial steaming , will suit all gauges $50 ,
7 ¼” passenger trolley with coal bunker $100
Model submarine kit, untouched, all parts including RX servos $500
Kit for a high speed drilling machine $50
Three ¾” x ¾” hand pumps $100 each.
Moore and Wright micrometers
1” $30
1”to 2” $40
3”to 4” $50
4” to 5” $60
5”to 6” $70
Aerografo ES/RV spray painting gun Air consumption 60 cubic litres per minute.
Brand new, still in the box.
To view Please Ring Chris Rogers 06 3561759

AVIATION CORNER

You don’t often read much on aviation in these pages but probably most of you don’t realise that Necia Parker (Barry Parkers better half) has been learning to fly radio controlled aircraft. At present she is content to let her instructor do the take-off and landings but Barry says she is growing more confident all the time. Now their son, Bradley is learning too so quite a bit of Barry’s time is spent repairing the training aircraft after minor accidents.

Necia with her current training model

LETTER FROM ENGLAND

By Stan Compton

One of our members purchased a ‘Romulus’ locomotive that steamed quite well with it’s commercially made steel boiler and gave no reason to suspect that anything was amiss. The hydraulic test performed well with no leaks. The pressure gauge had been removed to have its calibration checked. The steam test was carried out to check the safety valves and the gauge glasses functioned well, returning to show the correct water level speedily after the gauge glass blow down was closed.
When I asked to have the ashpan and grate removed I was told they were not removable, examination in through the firehole door with a light and a mirror showed no problems, but there was one revealed later.
On the next Running Day a leak appeared in the fire-box when the boiler pressure had reached just 30psi. I told the driver to drop the fire.
Next day I was taken to examine the boiler now out of the frames. I found the inner firebox walls to be bulged. On test drilling I found that there was only 1/8” of metal where the original was ¼”. The reason was soon obvious, the wash-out plugs on the sides of the water legs were concealed by the frames, so I realised that this boiler had never been properly washed out.!!!! The water legs were solid with crud built up over how long ? The engine was about twenty years old and I was assured the boiler had been replaced five years before, which I now doubt. Unfortunately the only certification was from the previous club, the owner had died and his teenage daughter had been running the engine.
A new boiler has been ordered; the moral of this is, never trust anyone, look for yourself.
Editor’s Note. Marine inspectors have told me that it was very common for full-size locomotive boilers, ships boilers and stationary boilers to fail shortly after hydraulic and steam testing, the testing evidently strains the boiler bringing on a premature failure in areas previously weakened.

You would not believe it; I recently steamed the ‘Rail Motor’ I had completed for a club member, I always test a lubricator on a pressure gauge to prove it will still pump oil at low speed and both functioned well. One failed during the steam test, there were no check valves fitted on the oil line so the pumps were cranked to put a pressure on before steaming up. Consequently one suffered steam condensing in one pump, displacing the oil.
I had advised the fitting of one Jim Ewins type pump but the advice was ignored.
Someone else showed me a lubricator, fitted with

roller clutches, these operated at slow speed but not when speed increased. It was obvious what the reason was, the housings for the roller clutches were too weak to take the two thou pre- load specified by the makers, I offered to make new ones to prove that roller clutches are reliable.
Why is it we lose our memory as the years tick by ? The new 'Hunslet' did not steam as well as my first one. I had completely forgotten that I had not fitted a choke in the chimney!!! With a grate area of 18 square inches a choke of one inch and a sixteenth is called for. The blast nozzle of 9/32" needs to be raised up to 2" from the choke and lo --- a different engine.
I am making a new choke plus a tapered liner (4 degrees) for the chimney of a 'B 1' known as 'Springbok.
The engine had to be forced to fill the 1 3/8" chimney as built, this burnt out the grate regularily.

One of the makers of injectors in the UK has his initials J C stamped on his product; on meeting the man once he told me he makes batches of 300 and tests every one, a most boring job. His wife goes with him to various track runs and is a very capable driver, with such a light touch she can win efficiency
competitions.
When I asked him how he got a wife who liked to drive his locos he said, " You should have married a tomboy!"
His article, published by "Polly Engineering" on injector problems is worth reading. (The article was published in the May Generator)

There was another sale of vintage motorcycles in the town recently; worth going on a viewing day and to chat to other men who remember the old days when our roads were empty.
Looking at a 1932 Rudge Special brought back memories of overhauling Rudge gearboxes, all bearings were needle-rollers, no one else did this, trouble was they varied in length and had to be sorted carefully or the final assembly was impossible.
At the last work-day we heard a group of motorcyclists arrive at the Waterworks Museum next-door, about twenty machines from a 'Norton Comando' up to Harley Davidsons and modern Japanese models. There was a Gilera 500cc with two front wheels, each on a separate, rear pivoted swinging arm with wheels smaller than average. We were told it handled well, but it looked very odd. All of the riders were older men, all wearing expensive riding gear, but they had no interest in listening to the memories I had of my early days on motorcycles, unlike the older men at the auction who all had stories to tell.

I needed a spare boiler test pump so I made one designed by Gordon Smith and published in 'Engineering in Miniature' December 2001.
A superb design with a spring loaded poppet delivery valve seating on an O ring. This ensures that if pressure drops during the test, it is not the pump. With a trunnion in the short piston, the force is applied correctly, this method could be used with advantage on a mechanical pump.

I am now building another hot air engine, we put a display on every year at a local traction engine rally, anything that ticks over pleases the visitors, but a complete locomotive is of no interest.

Due to the price of scrap metals available from China, thieves are stealing manhole covers !!!!

MARRINER RESERVE

Two weeks ago a team of workers lifted up about 14 metres of track just below the 'Levin' bridge where

the rail had to be built up to compensate for some gradual subsidence. This much was achieved on a

Thursday. Friday saw boxing fitted up to match the correct grade and on the Saturday the concrete was poured. A fortnight later the rail, now recoated with cold galvanising paint, was re-laid.

SUBS NOW DUE

As you all know Subs now are due. Those that receive the newsletter by snail mail and are in arrears will have an invoice attached. Those that receive the newsletter by downloading will have already received an email version.

May Club Night

Richard showing us how to align a mill vice.

Graeme's piston, rings and the cutter used to cut the slots in the oil ring

17 + 18 May 2008 - Thames

3 Members of PNMEC with their partners attended the weekend

Early Saturday Morning at Grahamstown Station

Steve James giving lessons on his new Ew loco

Mr Sandman taking another load of passengers out around the track.

Prefect weather,
Good company,
Excellent catering,
and great fun.

"We will be back"

The above photos were stolen from Sereena's online photo album.