



**Newsletter of THE PALMERSTON NORTH MODEL  
ENGINEERING CLUB INC**

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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

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  
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Palmerston North

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**This Months Featured Model**



## Report on the May Meeting.

Fin Mason showed us photos from his trip to England. He was able to attend a Model Engineering Exhibition at Harrogate, the National Railway Museum in York, The Watercress Line, the RAF Museum at Hendon and the Fleet Air Arm Museum at Yeovilton. Fin has had a long time interest in I.C. engines and he was able to photograph a variety of old aircraft engines and aircraft.

After Fin's talk a short DVD was shown on the battery electric loco built to haul repair materials for the 'clip on' structures on the Auckland Harbour Bridge. The loco was built by Ikon Engineering (Dave Giles) and the DVD showed the problems that needed to be overcome.

This DVD will be kept in the PNMEC's library and is available to members who missed out.

### On the Table:

**Bruce Manning** showed us a model of a 1924 Bugatti type 35 that he has bought. Very fine detailing and finished in the traditional light blue.

**Warwick Leslie** showed us the little traction engine he is building. Freelance design and for static display only.

**Brian Avery** had the front bogie for his NZR Kb for us to see.

**Fred Kent** is building the gauge 1 'Flying Scotsman' coming out with a magazine in serialised form. Fred also told us that he has bought a Honda hybrid car and he told us about its performance and economy.

**Robert Edwards** had a section of Stephenson valve gear for the two NZR Fs that he and Terry Jowett are building.

**Terry Jowett** had the newly rolled boiler shell for one of the NZR Fs.

**Ian McLellan** has built a coal crusher to produce coal of a suitable size to be used in his 'Juliet'. Ian says that he has been able to get Number drills from Mitre 10.

**Murray Bold** showed us the latest copy of the new Zealand Garden Railway in which one of Chris Rogers' engines featured on the front page running at Murray's open day.

## June Monthly Meeting

The June Meeting will be held on the 25<sup>th</sup> June, at 7.30pm, in the Hearing Association Rooms, Church Street, Palmerston North.

A guest speaker, **John McDonald** is going to talk to us on knife-making, design and tempering.

## COMING EVENTS

### Mid Week Run at Marriner Reserve Railway

23<sup>rd</sup> June between 10.00 am and 2 pm

28<sup>th</sup> July between 10.00 am and 2 pm

Please contact Doug Chambers beforehand.

### Track running at Marriner Reserve Railway

July 5<sup>th</sup> from 1pm to 3pm

July 19<sup>th</sup> from 1pm to 3pm

### Open Weekends

Hawkes Bay Model Engineers 4<sup>th</sup> - 5<sup>th</sup> July

Tauranga Miniature Railway 7<sup>th</sup> - 8<sup>th</sup> November

## MODEL MEE 2009

We are having another Model Engineering Exhibition in the Leisure Centre, Fergusson Street, Palmerston North over the weekend of August 21<sup>st</sup> - 22<sup>nd</sup>. Members are asked to let a committee member know what they have and are prepared to put on display. All members are invited to put something on show and remember it doesn't have to be finished. Works in progress remind the public that the models are not bought at the 'Warehouse', and that they are made from 'scratch' involving sometimes hundreds of individual pieces.

The closing date for the next issue of The Generator is Friday 10th July

## **THIS MONTH'S FEATURED MODEL**

### **HT-KumaP Harvester**

The HT- KumaP Harvester is a general purpose herb harvester manufactured by some of your local club members! It consists of a power head imported from Japan, stripped down and modified to drive a cutter bar and also power the conveyor. The harvester is pushed along and the reel on the front is ground driven from a front wheel. The reel lays the crop across the cutter bar and onto the conveyor minimising losses over the front of the cutter bar. The cut crop travels up the conveyor and into the collection bag.

The HT-KumaP is used for harvesting such diverse crops as pasture (trial blocks), leafy salad plants, Basil, even stinging nettle, and they are exported to a range of countries.

Merv George (Jenquip)

## **LETTER FROM ENGLAND**

by Stan Compton

For some time now everyone has been asking me, "How's the clock coming along Stan." Now at last after overcoming minor problems, I can now report that it goes!! Quite a thrill to move the one metre long pendulum and to hear the clock tick, and after adjusting it to obtain an even 'beat', to find it kept going.

It has been quite a learning curve, often I was not sure what I had to do, but now I realise it is basically very simple, but the indexing to cut accurate gears is very important. Like wise all the gearing must be quite free and plenty of end-float for the arbors (spindles to you and I), and even the ends of which must be highly polished. Now I can finish the rest of the motion including making up the unit to drive the 24" exterior dial.

Compared to the complication of the construction of the nine cylinder Bristol 'Aquila' radial, sleeve-valve engine, built by Brian Perkins who drove up to our clubroom recently to give us a talk on its construction, the turret clock is old technology.

When we saw all those parts laid out ready for assembly, it gave us food for thought. Making cast iron piston rings is a challenge. Brian uses a method I discovered of turning, boring and parting off continuous cast, cast iron, worth every penny.

Polished or lapped to the correct width, then broken instead of slitting, carefully sprung apart and with packing to create the gap, clamped lightly and the whole brought to a dull red and left to cool. I have forgotten what Brian used to paint on the ring to prevent oxidation, but I have heard of typists correction fluid when brazing copper boilers to contain silver solder, so that would probably be suitable.

You would not read about it!!!! We have a clock high above the town library that was installed over

one hundred years ago. It strikes the hours and kept good time. The other day it stopped and the usual serviceman was unavailable, so Peter, one of our members was asked to look at it as he is an expert on old clocks. He told me that the old clock machinery never gave any trouble, just the odd dead pigeon caught up in the works.

But some time ago the old clock that had been working perfectly was converted to an electric drive and this eliminated the need for someone to wind the clock weekly. Disregarding that Peter offered to do the job free of charge, but when he got up into the clock tower he found that all the mechanical drive for the clock had been removed from the frames and an ominous hum was emitting from the electrical control gear!!

All Peter could do was cut the power off at the main switch and report back to the authority concerned.

What a pity the original clock was not left complete as a stand-by, but typical of modern thinking, if it is old, get rid of it. Forgetting that the clock known as 'Big Ben', which is actually the Bell, is still in use even though it had a casting fractured some time ago and was repaired successfully.

Peter told me that his assistant goes to a Stately Home nearby to wind up their clock every week, no charge is made but a bottle of whiskey appears every Christmas!!!!

Going back to the talk by Brian Perkins on the Bristol Radial Engine, what impressed our members was the quality of his working drawings when viewed on a screen. He knew how the engine was built so drew everything up to scale. When he had the chance to show his engine, opened up showing the timing gear train (48 DP) to the Bristol Works people alongside the full-size engine, they could not believe his was an identical engine scaled down.

More problems with the 'kitset' King Arthur being built by one of our members. He struggled for three days trying to connect up the steam line to the ball valve throttle and in the end he brought it to me. It was the same problem that his GWR 1400 had. The bushes in the smokebox tubeplate and backhead had been brazed in to the very tidy boiler but no one had thought to check that they were in line to allow the steam pipe to be fitted. It was 3/8 of an inch out of line in the horizontal plane and 1/4" out in the vertical plane. Luckily I still had the 5/8" x 26 TPI screwed brass rod I had used to align the GWR 1400's boiler bushes. This time I drilled and tapped the threaded end to take a 5/16" rod as an indicator and then I got my wife out into the workshop to sight through the dome bush while I got my knee up



to the boiler shell and heaved to obtain a line up!!!! Later on it was found that of the steam valves supplied, one was not drilled correctly preventing the passage of steam. When they were fitted into the manifold the pipes could not be fitted. Short bushes had to be made to bring the steam-valves more to the rear, these are only some of the problems found during assembly.

### A HOT AIR ENGINE

Your Editor saw this Ryder – Erickson hot air engine at the Napier Hot Rod Club’s ‘Show, Shine and Swap’ meeting held at Meeanee Speedway on the 3<sup>rd</sup> May 09. It was pumping water and running absolutely silently.



### FOR SALE

A Myford Lathe, early 1950’s model. One owner and has had very little use. There is a 3 jaw and a 4 jaw independent chuck, faceplate, and a Jacobs Chuck. There are various tool holders and the lathe is mounted on a steel bench.. Price \$1300-00 Phone Howard (07)576-5471 Tauranga.

### FOR SALE

A Southbend 9” lathe about 50 years old. There are both 3 and 4 jaw chucks. The lathe has had little work and is in very good order. There is no electric motor with the lathe The owner is keen to see the lathe finish up in the hands of someone who will appreciate it. Price \$1000 ono Phone Don Jamieson (06)353-2218

### A 7¼” GAUGE STEAM LOCOMOTIVE

By Bren Campbell

In 1956 the urge to build a 7¼-inch gauge steam locomotive with riding trucks and portable track converted to action and by 1961 became operational hardware that visited many venues over six years. The locomotive was loosely

based upon a New Zealand Railways Baldwin built 4-6-0 tender engine. The chosen track gauge being close to one sixth that of our standard 3’-6” became the scale for the model. The object of the project was to create a small locomotive displaying the character of a full-size engine. The necessity for portability by car trailer limited the amount of rail track that could be carried which on completion came to 210 feet (64m)



consisting of thirty 7-ft (2.134m) lengths that laid out in an oval comfortably fitted around my house at the time. The radius of the end curves was too tight to accommodate a sixth scale 4-6-0 locomotive so the design was modified to a 2-4-0 yielding the flexibility of a four-coupled engine. The leading axle was mounted in a swivelling pony truck. While the engine was built to



free-lance concepts its visual features were to scale proportions. The boiler was of locomotive pattern formed from 3/16 inch

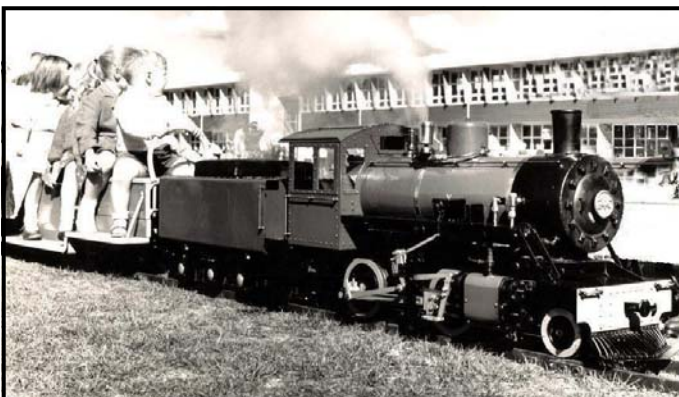
(5mm) steel plate with copper fire tubes and superheater flues. The cylinders were 2¼ inches (57mm) bore by 3 inches (76mm) piston stroke with 1 inch (25.4mm) diameter by 1 1/8-inch (28.575mm) travel piston valves and the driving wheels were 7 inches (178mm) diameter. The fire grate measured 9 inches (229mm) by 4 inches (102mm). Fuel was kerosene fed by a steam atomising scent spray type burner aimed through an aperture below the normal fire door. Carbonettes were used to stabilise the fire. Boiler feed-water was by axle driven pump while travelling and injector while standing. The tender rode on two bogies and carried 8 gallons

(36 litres) of water and 3 gallons (14 litres) of kerosene as well as providing the riding truck for the driver.

The engine and tender weighed 563 pounds (255 Kg's) of which the engine accounted for 391 pounds (177 Kg's) with 317 pounds (144 Kg's) on the driving wheels and 74 pounds (33 Kg's) on the leading pony truck. The driving axle suspension was compensated so that axle weight distribution was not affected by track irregularities.



There were two 7 feet (2.13 metre) long riding trucks each weighing 196 pounds (89 Kg's) carried on bogies. The seating was central plank with footboards. Each length of track weighed 41 pounds (18.5 Kg's). The colour scheme was hawthorn green boiler, cab and tender. Black smoke-box, chimney and underframes with red headstocks. The passenger trucks were grey seatboards and footboards with red side panels. All of the wheels were edged with aluminium paint.



Raising steam from cold was achieved with a wood chip fire with draft induced by a hand-cranked extractor fan fitted on the chimney. After a few minutes when steam pressure showed 2 pounds per sq. inch the chimney fan was removed and the blower and

kerosene burner were opened up. 12 minutes from light up was the normal time required to attain the working pressure of 90 PSI. When first placed in service the ability of the boiler to maintain full pressure on load was fairly poor and much heat was wasted in the smoke-box which scorched the smoke-box and chimney paint. This was rectified by fitting a feed-water heating coil of copper tube around the inside of the smoke-box. The engine then became a very free steamer even under full load.

The burner steam and fuel jets were finely metered with long taper valves.

One of the black and white photos shows the loco soon after completion at work with a full load and the others are later views. Coloured photos show the Walscheart's valve gear, mechanical cylinder lubricator and feed-water check valve. On the opposite side is the feed-water injector beneath the cab and the chimney blower pipe connection on the side of the smokebox.

## Brian Wiffin's New Workshop.

R Lockett

On the way up to the Thames Small Gauge Railways open weekend I had the pleasure of staying a night with Brian and Margaret Wiffin at their new digs in Matamata. This allowed me to break the long journey north and to check out Brian's new workshop and machinery as his previous equipment all went as a going concern when he sold up in Dannevirke.

A new small Lathe and a large Drill Mill were purchased from Chevpac in Auckland and fitted into the attached double garage, both these machines fitted with varispeed electric motors.

Extra accessories are being manufactured such as a rear toolpost for the parting tool and extra toolholders to carry the vast amount of tooling which Brian likes to have at his disposal. Having previously the luxury of a Colchester Lathe Brian can't







get used to the position of the apron wheel on the new lathe so a large slab of Cast Iron was cast at the Milson Foundry to form a new apron with the wheel position shifted to the other hand. The new shop should be a lot warmer than the shed in Dannevirke so progress on the clock should be swift.

## Hereford Railway - 9 May 2009

John Robinson (WGRG)

May's running day for the Wellington Garden Railway Group was held in defiance of the weather forecast at Murray Bold's Hereford Railway in Palmerston North. Even driving up from Wellington for the afternoon, as we passed through rain I had my doubts, but what a pleasant surprise to find the Palmie sitting in a pocket of sunshine that stayed with us all afternoon.

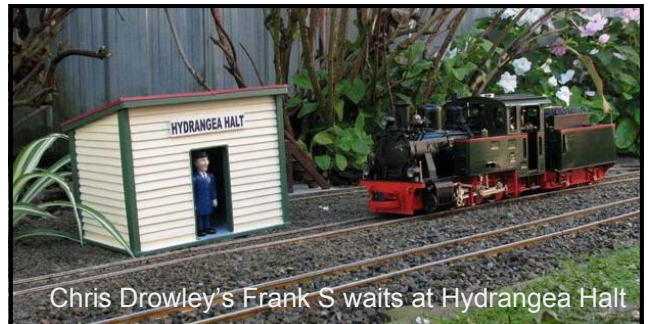
This was, as a group, our first visit to Murray's railway. With the incentive of the running afternoon hanging over him Murray had rushed ahead some of those "round to it" jobs, including replacing a considerable number of failing wooded sleepers with the new plastic sleepers from Auckland. As a result the railway

ran near faultlessly, well rewarding the great turnout of Groupies and attachments, some 30 or so all told. Okay let's get on to talking about the railway. Alongside a deck off the lounge and Murray's work room is a modest size track



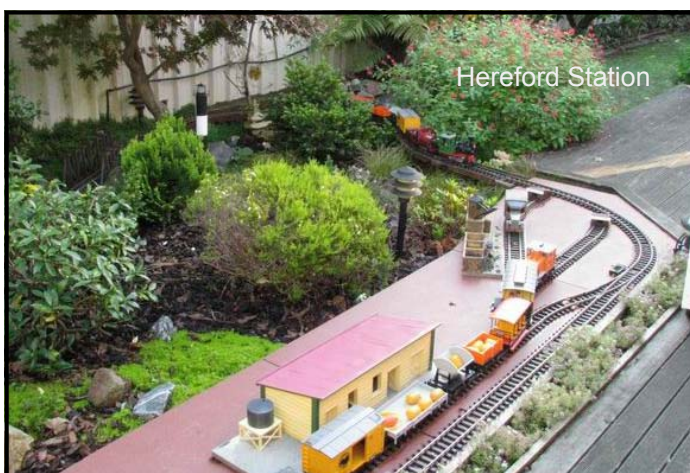
Chris Rogers Live Steamer "Vincent"

powered loop with the main station Hereford. Branching out from here, via a triangular junction runs the unpowered mainline which continues across the back of the section then runs for some distance down the side of the house, looping around a garden shed, pausing at Hydrangea Halt, before rejoining the single



Chris Drowley's Frank S waits at Hydrangea Halt

track mainline back to the deck loop. Generally Murray runs live steam or battery power, he's quite nifty with the Picaxe control system for his battery powered stuff.



Hereford Station



Busy Yard

Thanks to John Robinson for the photos and article. Ed