



Newsletter of THE PALMERSTON NORTH MODEL ENGINEERING CLUB INC

Managers of the "MARRINER RESERVE RAILWAY"
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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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This Months Featured Model



Report on the November Meeting.

Christmas at the Tasty Restaurant. Christmas is a wonderful time of the year and at our dinner we had a really good turn out with people at the tables talking about all sorts of things. And the food, loved the beef, the duck and the chicken fried rice. Mmmm.

The Shield for Clubman of the Year was handed to John Tweedie. The Shield had been enlarged to make room for more nameplates and thanks must go to Les Fordyce for doing this. I would like to thank Dave Newstead for finding the restaurant and making it happen. A Good night had by all.

Robert Edwards (President)

The Les Moore Trophy

The competition at Christchurch's Canmod 2014 will arise from the land of the Bungy Cord. This requires a device to travel on the raised track -2.5", 3.5" or 5" gauge powered only by a supplied 300mm length of bungy cord. PNME members should start thinking of what sort of device might be competitive.

November 4th Running Day

We had a visitor from Tauranga, Bruce McKerris and his near new 'Phantom'. Once in steam Bruce was shown the way around the track by your Editor who was then asked to take over the controls so Bruce could take some photos on the way around the track. Pictured is your editor, Bruce and his sister who lives in Feilding. I sincerely hope that it will not be too long before Bruce comes down again to visit his sister. The 'Phantom' is very nicely finished and is a credit to Bruce.



January Club Night

The clubs annual BBQ will be held at:
119 Ruapehu Drive
Palmerston North
06-354-7100

Starting at 6pm
on
Thursday 24 January 2013

All family members welcome.

Please bring your preferred beverage and whatever meat you would like to cook for yourselves, plus a salad or dessert to share.

COMING EVENTS

Track running at Marriner Reserve Railway

February 3rd from 1pm to 4pm
February 17th from 1pm to 4pm

Open Weekends

Whangarei Model Engineers
28 - 30 January 2013

Palmerston North Model Engineers
Locomotion 2013 2 - 3 March 2013

Barry's Piper Cub

In mid-December I was out for a ride on my Ducati and found myself near Colyton where the Aeroneers have their radio control flying strip. I called in to see if anything was happening and found Barry there waiting for a few others to fly their models before he took his Piper Cub, (see August 2012 Generator), up for another flight. Unfortunately there was a wind change and it came in directly across the strip. Not to be deterred our intrepid aviator (Barry) took off across the strip, the Cub demonstrating a very

The closing date for the next issue of The Generator is Friday 15th February

short take-off. The landing had to be made along the strip with the wind at right-angles. The 80" wingspan caught the wind, rocking the plane severely, but Barry placed the Cub down quite safely and once the tailwheel touched the ground the Cub tried to 'weathercock' into the wind in true 'taildragger' style, however Barry applied hard rudder and prevented the Cub from 'ground-looping'. Well done Barry, good to watch.

THIS MONTH'S FEATURED MODEL

By Graeme Hall

The Bremen Noiseless Caloric Pumping Engine.

The Bremen Manufacturing Company of Bremen, Ohio, USA started building their Caloric Pumping Engine in 1906 after an earlier patent issued in 1896. Their 6" bore Caloric engine was advertised to lift water from 25 feet below and elevate it to 75 feet above the base of the engine. The engine burned natural or manufactured gas, petrol or alcohol. It was common for hot air engines to be placed in the basement of a house pumping water to a tank located in one of the floors above it.

Today the Bremen is one of the more rare examples of hot air engines.

The Model.

It is approximately 1/6 scale, all fabricated, mainly from aluminium. The displacer cylinder is stainless steel surrounded by a circular firebox on the lower hot end heated by means of a gas burner. The upper end of the displacer cylinder is surrounded by a water jacket and acts as a rod guide for the displacer piston that is lifted by the rocking beam and linkage from the crankshaft. The cast iron power cylinder which is connected to the displacer cylinder by a pressure transferred port; has a close fitting graphite piston, with connecting rods to the crankshaft and water pump.

The fabricated flywheel and crankshaft run on ball bearings to reduce friction to a minimum. Water is pumped from the reservoir tank to cool the cold end of the displacer and then returned to the tank.

This model, although not complicated, requires careful fitting, alignment of linkages and sealing to return compression between the displacer and power cylinders.

The engine runs well, after adjustment to gas jet sizes and replacement of a noisy ball valve in the water pump.

LETTER FROM ENGLAND

By Stan Compton

You may recall that we had a very wet summer over here and most of our local Traction Engine Rallies had to cancel. One based at Welland gambled on a dry autumn and had two bright sunny days for their display. The third day was wet; we are told that this is all due to global warming, maybe it is, but I was able to attend on a really ideal warm day.

Part of the Showground had been planted with wheat that was being harvested with a 'combine'; the weather beaten straw being baled. The land being cultivated with a pair of Fowler ploughing engines, followed by various tractors working the soil up ready for re-planting, the public could see all this, they must have learnt something.

There was so much to see, heavy trucks down to a 'Reliant' three-wheeled van with a motorcycle engine and front forks out front. The original before the type you will know from the B.B.C. TV series 'Only Fools and Horses'. I admire the men who restore vehicles just so they can display them driving around the Rally Ring.



Similarly with cars. I found a 1927 'Morgan' three wheeler fitted with a J.A.P. engine, very similar to one I bought in my youth. So basic, two speed, I showed someone the final-drive chains, one each side of the rear wheel, each selected by a 'dog clutch'. A pre-War 'Rolls Royce' and a 'Bentley' saloon car, both with custom built bodies, what shallow wind-screens cars had in those days. A 1957 'Rover' two seater sports car looked a bit special and a 1939 'Morris' Series E tourer looked just like new.

Having worked on 'Gardner' diesel engines in my youth, I was delighted to see a 1927 'Gardner' reversible two stroke marine engine mounted on the chassis of a truck, idling quietly

for all to admire, made in the days when England was the workshop of the World.



The Rally site is owned by the organisers, hence the wheat crop, and this year a standard gauge railway track, correctly ballasted making it permanent, had been laid with an industrial locomotive to run on it. Next year we should see it hauling passengers.



With over a thousand items on display, I can only mention a few, the model tent had a large variety of models from toy displays up to 5" gauge locomotives and traction engines but an unusual display of pen-nibs caught my eye. Birmingham used to supply the World years ago and I learnt that there is a pen-nib museum set up in the centre of the city, the variety of pen-nibs cover many different uses such as italics, mapping and music.

Have any of you heard of a WW2 amphibian aircraft called a 'Walrus'. I think it had a Bristol 'Pegasus' radial engine mounted on the rear of the main spar. Although designed by the same man who designed the 'Spitfire', the 'Walrus' was an ugly looking thing but its capability of landing at sea to rescue pilots who had been shot down earned it a place in history. It was also used as a spotter aircraft by Naval ships being launched by catapult and then recovered after a landing on the sea by crane. I heard an interesting story from the son of a medical officer who was on HMS Norfolk during the infamous

convoy to Russia, PQ 17. The 'Walrus' pilot had just taken off when he realised the convoy had been ordered to scatter as an attack by a German Battleship was expected. HMS Norfolk was working up to full speed and the concerned pilot asked for orders. He was told to find a cargo ship who can pick you up out of the sea and land you in Russia. This he did but he ended up in a different part of the port to HMS Norfolk. The Russian authorities would not give him any petrol so he couldn't fly back to his own ship. He was ordered to destroy his "Walrus" by fire. There is a 'Walrus' on display at the Fleet-Air-Arm Museum at 'Yeovilton' in Somerset. The Museum is well worth a visit, they have on display the hull of a 'Concord', the faster than sound passenger jet liner that cost the taxpayer a lot to develop. Only wealthy people could afford to fly to the USA in it but we learnt a lot of new technology from it.

Ludlow is a town on the Welsh Border, the castle still has habitable parts in good order privately owned. On the first and third Sunday a 'flea market' attracts a lot of visitors, a lot of china on sale but also goods of every description. I was tempted to buy a very old alarm clock and the tool stall is always worth visiting. Books, records, jewellery you never know what will be on offer. I was told of a man who set up in a market elsewhere making things out of coins. His workbench was a straight-back dining room chair, his vice was clamped to the top rail and used by sitting backwards on the chair. He used an 'egg-beater' drill to make a hole in a coin, and then he proceeded in this case to cut out a ship with a jewellery saw. Once polished and fitted to a chain it was a saleable item.

Visitors

On Friday the 28th your editor received a phone call from Sharyn Burling, the late Jim and Jean Curtis's eldest daughter. She explained that she and Kevin had a lot of family members staying and that they were coming over from Dannevirke to Palmerston North on the Saturday and would there be any chance of us running the Santa Fe F7 for them. Sharyn's father Jim had started the F7, but after he passed away the F7 was completed by Roger Corlett, Doug Chambers and David Signal. I said that we certainly would be happy to run the F7 for them. A few phone calls arranged for some extra members to help and Robert Edwards said that he would bring

down the Heisler and arrange for some of his extended family to come down as well. Fortunately the early rain cleared and rides were given to all the visitors. After the engines and passenger cars had been put away the mowers were put into service as the grass and weeds had 'taken off' due to the rain after the Christmas period.



That evening I couldn't help but feel so pleased that Jim's family still take a great interest in his engine.



Completing part-built locomotives

By Doug Chambers

I have been asked in the past to write articles on how to machine various components for live steam locomotives. I have declined to do this as I am not a trained fitter and turner and have directed the members to solicit help from a source more qualified than me to answer their questions.

After completing nine locomotives that have been started by other model engineers, and starting the tenth, I feel that perhaps I have learnt enough 'the hard way' to be able to pass on some advice which may help someone else who is thinking about completing someone else's unfinished project.

Often on 'Trade Me' we see partly built locomotives advertised for sale. Usually from a

deceased estate, or someone who has got to the stage where a boiler is required and the builder felt that the construction of a boiler was beyond his capabilities. Or the builder has just lost interest in the project.

If a boiler is offered with the locomotive try and ascertain if it has had an official hydraulic test and are there any records held by a club. If not then you could have trouble getting the boiler certified.

All right; you have bought a locomotive chassis and it is nearly ready to run on compressed air. What do you do first? Although it will break your heart to do so, I recommend that you completely dismantle the engine and chassis first and check each component against the plans. That is going to take some time but it will pay off in the long run.

I was asked to complete a very well made 5" gauge 'Pacific'. The chassis was almost ready to run on air and it had been painted as work progressed. I was most unwilling to dismantle the engine as it was a very complex design and it looked well made. However, having been caught before, I completely dismantled the chassis and found some serious errors of judgement and machining that would have caused much heart ache after steaming had been attempted. Incorrect materials used and the length of eccentric rod taken from the plan rather than from the job meant that setting the valve gear accurately would have been impossible.

One fault I have found with nearly **all** the axle driven boiler feed pumps I have checked has been that balls that act as valves have been arranged to have far too much lift, remember the lift should be 1/5 the diameter of the ball. The worst I have seen was a 1/4" ball having 5/16th lift. If you don't have that right the pump will not be able to supply enough feed water to the boiler.

Do not assume that because the wheels are on the axles that they have been a good press fit or that they have been 'Loctited' on. It's best to remove them and check the fit and check that they are properly quartered. At the same time check that the coupling and driving wheel crankpins are all the same distance from the centre of the wheel. A simple jig should be used to get this right but I have come across some that either the drill has wandered (probably when a jig was not used) or they were incorrectly marked out and not jig drilled.

After refitting the wheels to the axle (don't forget the axleboxes) it is a good idea to fit Scotch Keys. Drill a hole, half in the wheel and half in the axle. Then make a tight fitting pin and drive it in, or better still fit keys.

Check the diameters of the wheels and the profiles. It may be necessary to take a few fine cuts to get them perfectly true.

If the engine has Stephenson's valve gear, after you have got the gear set up right, lock the eccentrics one at a time, remove the grub screw and drill into the axle to make sure that the eccentric is securely located. Use Loctite on the grub screw when you replace it and get it as tight as you can. It will really ruin your afternoon if an eccentric slips. My own preference is to use a long grub screw and fit a lock nut as well if room permits.

We all make mistakes and often we are able to compensate for the error by adding or subtracting a little more elsewhere. However the original builder is probably not going to be about to answer your questions so you have to be able to try and follow what he has done to compensate for errors that he made.

I have often thought that it would be easier to start again from scratch, making my own errors.

As you get into the project, you can see the parts that the original builder has struggled with. You can sense his frustration and almost hear the odd curse as the job comes along. Nothing worthwhile has ever been achieved without pain so carry on and make your own mistakes.

As with all locomotives, the first 'steam up' at the local track comes along with a great deal of pleasure. For me personally I feel that the engine pulling me along has come from the best efforts of two model engineers. One who perhaps did not live long enough to see his engine finished and in steam, but wait a minute, someone just tapped me on the shoulder and said "She is steaming well" but there are not any passengers behind me for the trial run!!!!

Tauranga Open Weekend 2012

By Richard Lockett

The W hadn't been up to Tauranga for a couple of years so as it's a nice part of the country to visit and the club runs a tidy operation in a pleasant location at Memorial Park on the estuary edge close to the city centre, off I went. The railway is in the process of being

lengthened with large embankments built up extra high to preload the ground before a final contour to height due to the soil conditions being so close to the estuary.

Work on the foundations for one of two bridges has commenced and concrete track bed has been laid on a portion of the new formation. I drove up on Friday afternoon and was able to get an early start steam up on Saturday morning. I spent the day hauling passengers around the park and enjoying good weather. An exhibition of club member's projects was held in the foyer of an adjacent hall, traction engines

featuring prominently with two well crafted examples of the Durham and North Yorkshire in 2" scale and a still not painted 1.5" Allchin.



Sunday saw more passenger hauling with the W. A highlight of the day was an unexpected fly past of the recently restored Mosquito Aeroplane. It went directly overhead and then put on a show over the harbour towards the Mount unfortunately just out of our vision because of the large trees in the park but what a great sound two Merlin V12s make.

For the first time the Tauranga club were using their passenger trolleys that have been fitted with continuous vacuum brakes. These were being pulled behind a Phantom steam loco. They worked well until the fireman couldn't keep the boiler pressure up and the stored vacuum in the trolleys started to apply the brakes. This in turn dropped the loco boiler pressure down even further and the train ground to a halt, as it is intended to do.

The W was able to push the train for a couple of hundred metres before having to give up as the brakes really gripped hard. This is why a vacuum limiting valve needs to be on the train pipe in the loco tender or on the driver's truck so as to allow for a degree of boiler pressure fluctuation before the brakes kick in. You may just have to allow for a bigger piston diameter to counter the reduced vacuum to give the braking force desired.

Many thanks to the Tauranga Model Engineering club for a fun weekend .