



## 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 4414

### PRESIDENT

Robert Edwards  
(06) 280-3057  
pnmec-president@trains.net.nz

### SECRETARY

Fin Mason  
(06) 356-7849  
pnmec-secretary@trains.net.nz

### TREASURER

John Tweedie  
(06) 358-0150  
pnmec-treasurer@trains.net.nz

### EDITOR

Doug Chambers  
(06) 354-9379  
pnmec-editor@trains.net.nz

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No 423

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**PNMEC Home Page** [www.pnmecc.org.nz](http://www.pnmecc.org.nz)  
**Email:-** [pnmecc@trains.net.nz](mailto:pnmecc@trains.net.nz)

### 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 difficult. We may even offer you a cuppa.

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 4414

Place  
stamp  
here

**This Months Featured Model**



## Report on the May Meeting.

The President advised the members that we will be attending the Rail-X event at the Barber Hall during the weekend of 23-24 July. We will have some locomotives on display inside and the portable track with the Kerr Stuart 'Wren' locomotive giving rides. Members are invited to come along and lend a hand.

The PNMEC has been invited by Feilding Rail to operate the portable track at their Open Weekend in November so our efforts last year must have been appreciated.

We have received a letter from the Nelson Model Engineers out-lining the rules for their 'Les Moore Challenge'. The challenge is to build a 'Put Put boat' on site at the next Convention using materials supplied by the host club.

**BRUCE GEANGE** showed us two 'Put Put boats' that he had built some years ago. One was fired up and demonstrated in a basin of water.

**MERV GEORGE** showed us two 'Put Put boats' that he and his son built.

**GRAEME HALL** had a single cylinder inverted internal combustion engine on the table.

**PAT O'SHEA** has completed two stationary steam engines, a three cylinder radial and a two cylinder vertical type.

**EDDIE BLEAKLEY** has dismantled the BR 4MT tank locomotive that he recently purchased and he has started the rebuild. He had the rear bogie on the table for members to see.

## June Club Night

The June Monthly Meeting will be held in the Hearing Association Rooms on the 23rd June at 7.30pm.

**Richard Lockett** will present another evening of photos from the **Percy Godber collection.**

The photos are from the very early days of the NZR depicting workshops, locomotives and track and structures.

## Rail-X at the Barber Hall 23 - 24 July

The show is open to the public from 10am-4pm both days.

We need help outside in the car park, running the train, selling tickets and assisting with loading.

We also need help inside manning our static display and talking to the public.

Any help you can give during each day would be great and if you are able to give us assistance with set-up and pack-up that would also be appreciated.

## COMING EVENTS

### Track running at Marriner Reserve Railway

July 3<sup>rd</sup> from 1pm to 3pm  
July 17<sup>th</sup> from 1pm to 3pm

**Rail-X** 23-24 July  
10am - 4pm Daily

**For Sale** a Burnard six inch diameter, four jaw chuck. Modified to suit a Myford lathe. In good condition from the late Don Dudley's workshop. Price \$90

**Plans for Lathe:** (Myford presumably)  
Taper Turning attachment for lathe  
3 sheets

Sawing & Filing attachment  
Boring & Facing Head attachment  
two separate plans

Micrometer Boring Head  
Tailstock Turret  
Collet Set

Screw Cutting Gearbox - 2 sheets  
Combination Milling & dividing attachment  
Thomas Style Dividing Head modified

**Plans for Steam Engines:**

Steam Fire Engine -2 sheets model about 16" long and 6" wide

Hercules Steam Crane -  
base 9"x 3½" height about 9½"

M.E. Beam Engine

Double Tangye Type Mill Engine

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

Diagonal Paddle Engines - 2 sheets  
bore  $\frac{3}{4}$ " stroke  $1\frac{1}{2}$ "

Model Aero Engine - Mate 2cc Diesel

Compensating Gear & Hind Wheels -

Allchin ME Traction Engine (sheet 4 only)

The plans may be seen at the Editor's home and they are available after a small donation is made to Don's wife.

## **This Months Featured Model Garrett 6 ton Under Type Steam Lorry**

By Bruce Geange

This model was first thought of at a Traction Engine Rally held at Tokomaru Steam Engine Museum in 1973. Spotted in amongst the parts collection was the Garrett lorry chassis. Over a period of time I did drawings, noted dimensions and rolled off a film at all the different views I could take. It took a few years to build a rolling chassis with twin brake shoes in each rear wheel drum that operate from the cab. All wheels are fabricated and parts welded. I made aluminium moulds for the curing of the raw rubber on the wheels. The curing was done in the home oven. A copper boiler has been built and I was not really happy with the construction, eventually finishing up in the scrap box. The floor for the cab was cut out from sheet metal and fitted to the chassis in two pieces.

The model sat for some time while more information was sought. The front cowling being the next item made from brass sheet and fitted. Later I was given drawings showing a plan and side view. These showed me a few mistakes that I had made and were corrected. These drawings were blown up to the scale I was building the model. This made things much easier.

The cab has been cut out using second hand Rimu timber then glued, bolted and nailed together. The windscreen came next with a mixture of wood, brass and Perspex. There is a pair of windows on either side with the top ones opening. While working with wood the tray was constructed next and mudguards made and fitted. The tray has four dowel pins that fit into holes on the chassis with a locking pin that slides into the rear of the cab by a lever.

The model was really starting to look like a steam lorry by now and the thought of making it an electric drive and radio controlled was looking more and more promising. A 12 volt geared motor had been purchased and a mounting bracket made then fitted to the chassis of the

lorry. An old war surplus differential (from a gun sight I think) has been modified and fitted to the output shafts after carrier bearings were made. Chain sprockets fit on each end of the shafts with a chain to each rear wheel. There is a one to one gear drive between the motor and the differential.

The water tank came next, being constructed mainly from tinfoil and detailing added. The top has been left open to allow a 12 volt battery to fit inside. Mounting brackets were made and the tank fitted to the rear of the chassis after painting. This was followed by the building of a dummy water pump and fitted to the left side of the chassis. Pipes were run between the tank and pump. A new imitation boiler was built mostly from tinfoil with brass fittings added. The gauge glasses came from a biro insert. The cab, tray and boiler were painted next and left for a while to harden. A servo motor has been fitted under the cab floor and connected to the tie rod for control of the steering. The servo wires were lengthened to come back to where the electronics are mounted. An imitation engine and differential housing were made and fitted. A local signage firm produced and fitted the wording on the front of the cab and the water slide transfers on the sides were downloaded from the internet and printed at home. The wiring of the components was completed and the lorry had its first run around the section without any problems. Two bike lamps were obtained from a bike shop and dismantled. The lenses were machined to a smaller diameter and fitted into a cylinder with mounting brackets and secured under the floor. Wiring was run to a central point and connected to separate batteries. A red 10mm LED became the taillight. A switch operated by the transmitter controls the lights. Upholstery to the seats and mirrors have been added to complete the cab.

## **LETTER FROM ENGLAND**

By Stan Compton

War reparations is a term we rarely hear mentioned these days, it all happened such a long time ago after the two World Wars. After the first one the German Government was so screwed down, the country ended up with hyper-inflation and this is one reason it all began again in 1939. When I went to work at Massey College, as it was known then, all the machinery in the faculty workshops was of German make, bought cheaply on the dockside in Wellington as

it was unloaded from the ship from Germany. I recall being invited to work at the factory of the company known as BSA in Birmingham. I knew the foreman who was responsible for construction of the BSA 'Bantam' and that he was having difficulties with the jigs used to build the frames. The design was of East German origin from the DKW factory and superior to what was produced in Britain pre-war. I have recently learnt that the same design was offered to the USA, produced and named 'Hummer', and that it was also offered to the USSR as a 'Moskva'. Also of interest is the work done by Walter Kaaden for the Racing division of MZ which led to a greater understanding of the 'expansion box' exhaust. However the advantage gained by Walter Kaaden for the MZ two strokes was lost when MZ's top rider Ernst Degner defected to the West during the Swedish Grand Prix. Degner, once free of the East German repressive society, went to work for Suzuki where his knowledge was put to use resulting in many World Championships for the Japanese firm. When I was seventeen I was asked to find out why a pre-war British two-stroke would not run properly. I stripped the engine down and found the exhaust port blocked with carbon leaving just a 1/4" hole. How it ran at all I don't know, but after clearing it all out there was no difference. It was hard to start and it had no power. It was years later that I found out that those engines had plain bushes in the crankcase; these would wear causing loss of crankcase pressure and poor performance.

I read about a young woman who bought a BSA 'Bantam' and learned to ride it. She then decided to ride it across Canada but could not bear to leave her pet-dog behind. She found a wooden box large enough for the dog, bolted it onto the rear carrier and succeeded in her quest.

There was one British two-stroke motorcycle that was built pre-war which was very reliable. It was the Velocette GTP. I had one for years. It had an oil pump controlled from the throttle long before the Japanese copied the principle. By now you will have realised that motorcycles have played a large part in my life so please bear with me.

On the news recently we have heard about teams of women rowing a boat across the Atlantic Ocean, but the team that crossed the Pacific Ocean only rated a small clip of their safe arrival in Cairns. Full marks to them for their

success.

We learn so much these days on TV about living conditions in foreign countries, for example the result of a virulent mosquito bite on babies born in South America. No wonder there is a problem when we are shown stagnant water lying everywhere in the cities. This reminds me of being in charge of a motorcycle pool seventy years ago in a Naval Base in South India. I was able to provide a 'Norton' side car outfit to a young Medical Officer who had obtained a knapsack sprayer, to be filled with old engine oil and pumped onto marshy land over a four mile radius of the base. We all had tropical sores to treat but no malaria, a credit to that young Medical Officer.

I have my 'Warzburg' clock running now with a 3kg weight it will only run for twelve hours but being an alarm clock that is enough, before rewinding by pulling the arms on the windlass to lift the weight up. All credit to the original builder back in 1400 who arranged a peg on the hour dial that contacts a 'trip lever' freeing the alarm crank handle allowing the small weight to drop and operate a swinging bell, I assume to wake the monks up !! Even on my model this part actually works, much to my surprise. You may wonder why I chose to build such an ancient device. It was simply to satisfy a challenge to me. There is a long letter to 'Model Engineer' recently from someone in 'Tasmania' who questions why don't we dispose of our old machinery and take advantage of modern methods with programmable machinery and produce our models more efficiently. Firstly he forgets the cost and also that once you are retired time no longer matters and much satisfaction can be gained by making something with one's skill on an old 'Myford' lathe and bench drill. I also had a background in engineering but I have spent the last fifty odd years building models with the basic methods so despised by our correspondent. He admits he hates filing and I grant many courses for apprenticeships often spend much time on the correct use of a file but recently I was complimented on the shape and finish of the gear teeth on the 'great wheel' of the 14 century clock whose tooth-form is so different to a modern one.

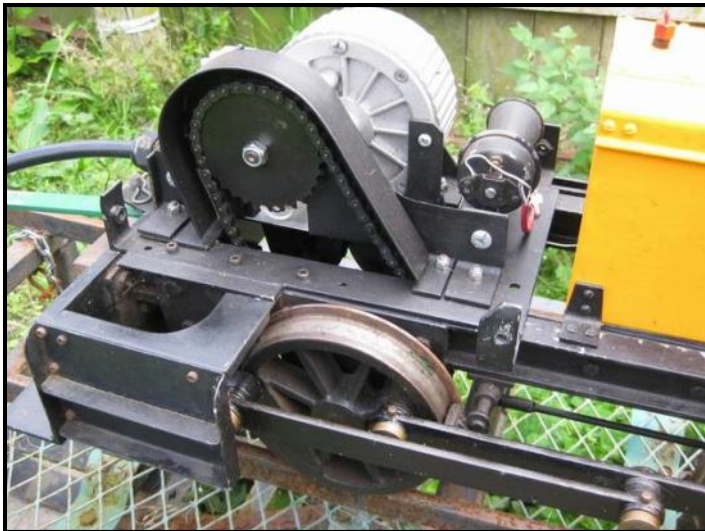
At the Hereford track site a problem has appeared now that the floods have receded.

The plastic liner of the model boat pond has lifted up forming a large bubble out of the water. Many concrete slabs had been laid on the liner to stop this but the cause could be ground-water from higher up.

## THE SAGA of TR 38 Part 7

Neil Burn

Before and after the failure of the internal combustion engine, I had attended Running Days at Raumati, Keirunga and of course Palmerston North where I spoke to members who were running their electric locomotives. I decided that seeing I was a retired electrician then perhaps electric power was the way to go. Thanks guys!!!! I was advised to get in touch with DNC Systems in Melbourne, Australia, whom I found very helpful and great to deal with. They supplied a 24 volt motor with the correct gear ratio. They calculated the correct drive chain sprocket to suit the existing drive wheels on the TR and machined the sprocket to fit on the gearbox. All the components were then freighted to my daughter Kelly in Wellington. This of course involved a trip to Wellington to pick up the parts and included was a visit to Raumati and Petone as well. The cab floor had to be altered to suit the electric motor and the chain drive before they could be installed. I made and fitted a guard to enclose the chain to stop oil from being thrown around inside the cab



### Wanted

Wanted to buy a set on hand internal thread chasers, I need 20,22,24,26, and 32 TPI. or any others, I understand woodworkers use them.

Bryce Clifford      bkclifford@inspire.net.nz

The next step was to arrange the controls and batteries.

## Bill Frazer NZR Driver, Mountaineer and Photographer.

By Doug Chambers

Bill Frazer was my great-uncle on my mother's side so I guess that my regard for steam locomotives came from both parents. Although my uncle lived in the South Island he was a regular visitor to my parent's home in Feilding. In the evenings he would tell of his experiences as an employee of the NZR, mountaineering and photography. Sadly I can remember only a fraction of what he told us but I will attempt to give you an idea of life in the NZR between 1906 --1946.

Bill bought a 'box' Brownie camera which started a lifelong hobby. Soon after he left school and went to work firing a 'Puffing Billy' for the Taratu Coal Company. He began night classes and correspondence courses in locomotive management and dreamed of the day he would drive a shiny black mainline engine. In 1906 Bill joined the NZR and it is hard to say who gained the most benefit from his 40 years with the Railways. Bill got the job of his dreams which fulfilled his ambitions and fostered his hobbies. The NZR got an engineer and an unofficial P.R. man. In his holidays Bill would guide tourists over the Franz Josef and Fox Glaciers. He also guided surveying parties into the Southern Alps. When the tourist season was at its peak and extra guides were needed Bill would be released from the Railways, Newman's Coachlines gave him free transport and the General Manager of the NZR Peter Sawers arranged rail passes and special leave.

Bill Frazer's skill with the camera saw him kept busy making prints of his photos for tourists visiting the glaciers.

In 1923 the Otira tunnel was put through and once ready for traffic the call went out for drivers. It turned out that Bill was the only railways locomotive engineer who had studied electric traction. At that time he was working out of Greymouth, married with a family but when offered the position at Otira he wasted no time in accepting the promotion. Otira in the heart of the Southern Alps was a photographer's paradise and Bill and family stayed in Otira until he retired. His photographs were in great demand from rail travellers and he used to say that "My job with the railways was only a sideline". Bill did a movie film of Southland which was presented

to the Queen on her first visit to New Zealand. His hand coloured slides won honours from the Royal Photographic Society in London.

After his retirement from the NZR, Bill was snapped up by the Canterbury Automobile Association as a publicity officer. He was making a map of tourist destinations when he discovered that only 64 miles remained to be done to complete a road linking Central Otago and Westland over the Haast Pass. The A.A. suggested he make a film of it to be presented to a meeting of the local bodies in Dunedin in three months time. So Bill went off to Greymouth where he hired a couple of horses and enlisted the aid of the local AA officer and a lad to tend the horses. The journey from Paringa to Lake Wanaka and back took three weeks and resulted in 2000 feet of movie film. The local bodies agreed that the road should go through and Sid Holland's new Government were not slow in calling for tenders.

To be continued

## Compton's Crossing to Levin Bridge Reconstruction.

By Richard Lockett

With our long summer weather continuing well into April and some extra manpower becoming available due to the school holidays, the Marriner Reserve Railway's track gang decided to get stuck into the "next to do" bit of our ongoing rail track refurbishment. Preliminary work had been carried out the previous winter by moving the retaining walls outwards on the outside of the curve and construction of new retaining walls leading off Compton's Crossing and into the Levin Bridge. The backfill material had been left to settle before work on the track bed itself was commenced.

Hence on Thursday the 21st April the 30 metres of track between Compton's Crossing and the Levin Bridge were lifted and removed to the steaming bays to be cleaned up and given a coat of cold galv paint and have new conveyer belt packers glued to each sleeper.

With the aid of assorted crow bars and an electric Kango breaker the concrete track bed was removed and the trench prepared for the new width 500mm. The apron at the Compton's Crossing end being 1400mm. Using a Topcon auto level, the formwork was set up with precision between the two bridge's to give a

constant 1 in 50 downgrade and the chosen amount of super elevation. Steel rebar was then positioned into the trench in two rows and welded together with cross ties between.



Liam welding the Rebar

Friday the 29th saw the concrete line pump arrive on site and set up with a 45 metre long rubber hose to get from the road and across the park, up the bank



Concrete Pouring

beside the Levin Bridge to our pour. A 3 square metre load of 20mpa fine stone concrete arrived and was backed up to the pump. The rest of the day was spent screeding, trowling and watching the concrete dry. The rear guard left the site well after dark.

The 5th and 6th of May saw the formwork removed and the track bolted back in place. An afternoon of rain making this a two day job. Railway operations recommenced on Sunday the 8th with the new section of track bed proving to be very smooth. This all made the six days of effort by the construction team very worthwhile. A big thanks to you all!

Which brings us to the next "to do" bit of our track reconstruction!

The annual subs have not changed.  
Subs are now due.  
Full \$30. Junior \$15 Country \$15  
The club bank account no for Internet Transfer  
06-0996-0831663-00  
Put your name as the Reference

If you would like an email when this newsletter is published, send us an email with "Generator Please" in the subject line with your Name, Club and Email address to [pnmec@trains.org.nz](mailto:pnmec@trains.org.nz)