June 2015
No 412

THE GENERATOR

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 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
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Place stamp here

This Months Featured Model

Report on the May Meeting.

John Tweedie arranged for a work colleague, **Steve Denby**, to give us a talk on living and working in Antarctica for a year as part of a support group for scientists.

Steve explained that once accepted all the support group have to undergo training in basic fire fighting and life support skills. Extreme Cold Weather gear has to be worn on the flight down to Antarctica and after arriving all members of the support team have to go through further training. Steve's job was to maintain the plant that changed seawater to freshwater at a rate of 8000 litres per day. He also helped to maintain the waste water plant which purifies the waste water to a state where it is better than the seawater it is returned to. Steve had a very good collection of pictures to go along with his talk adding a very good visual dimension to what he was trying to get across to us.

There were some items on the table for us to view.

Fred Kent had a book on vintage tractors.

Doug Chambers had the outer boiler shell and firebox for the GWR 1400 class that he is building for **Peter Targett**.

Graeme Hall is making a differential for the 2" scale 'Minnie traction engine that Richard Stevens is building. This differential has an epicyclic arrangement instead of the more common bevel gear type. He also has cut some gears for the radial engine he is building.

Pat O'Shea displayed his 1/15 scale model of the steam engine by the gateway of the Putararu Timber Museum.

Merv George required a device to mark steel permanently. He used a small angle grinder and a frame made from a drawer slider. So simple but few of us would have come up with such a simple solution.

June Club Night

7:30pm, Thursday 25 June2015
Hearing Association Rooms
Church Street, Palmerston North

'Bits and Pieces'
is the theme for the evening,

Model Mee

The Leisure Centre has been booked for the 29th - 30th of August and the hall is available for us to set up on Friday the 28th. So keep those current projects moving on.

COMING EVENTS

Track running at Marriner Reserve Railway

June	21st	from 1pm to 3pm
July	5th	from 1pm to 3pm
July	19th	from 1pm to 3pm

Open Weekends

None advised

Subs are now Due

Please bring to the Treasurer on club night or by internet banking.
PNMEC Bank Acct No is
06-0996-0831663-00
Full $30
Junior $15 - Under 16
Country $15

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

This Month's Featured Model
Central Pacific No173 'Sonoma'

Doug Chambers and Bob Owen

About two and a half years ago Bob Owen told me that he had seen a part built 7¼" gauge American 4-4-0 listed on Trade Me and he asked me that if he was successful in bidding for it, would I complete it for him?
I agreed to complete it and he was successful in bidding for the engine. All we found out about the original builder was that he lived in Lyttleton.
He started the project in 1991; he had put the date on the plan as he completed each component of the tender. 1995 was the last date on any of the plans. We assume that he died after this date and after the Christchurch earthquakes his widow moved to Auckland leaving the house and contents to be sold by relations and neighbours. The tender consisted of a rolling chassis and a part built tank.
The tank was a bit rough, the brass sheet was too thin and the rivets were not evenly spaced or in line. We decided to use the tank as when I complete someone else's project I like to leave as much of the previous builders work as possible. I hope that wherever he is now he can see the engine running and recognise the parts he had made. With the tender completed it was time to look at the engine. A complete set of plans had come with the project. This was a surprise as the plans had been prepared by Railroad Supplies Corporation in California, USA. And I believe that this engine might be the only Railroad Supplies design built in New Zealand. There were details on the prototype engine (see the notes in the accompanying article) and detailed drawings to build the model from. Railroad Supplies brochure said that the engine could be bought as castings only, machined components, or painted and ready to run. The drawings were originally done about 1972 and there were lots of corrections and improvements included.
An early builder of the CP 173 was Walt Disney. Bob made the patterns for the driving wheels and they were cast in Castlecliff. Medium tensile steel tyres were fitted to the driving wheels. The cylinders were machined from flo-cast bar. The frames were ½" square bar, one each side from the front buffer to just before the driving wheels where a truss section began and ran through to the rear buffer.
The way this frame flexed amazed me, but once the boiler was fitted a lot of the flexing disappeared. The wagon top boiler would not meet up to the Australian model boiler code so I adapted Martin Evans 'Holmside' boiler to suit. This was a round top boiler so there had to be a frame built over the firebox wrapper to give the appearance of a wagon top boiler.
The original boiler was for saturated steam (no superheaters) but I chose to fit superheaters of the concentric type.
The design called for a cylinder bore of 1½" but I opened this up to 1¾".
The steam passage from the wet header to the valve chest was via a rather tortuous route with no less than five elbows to each cylinder.
I changed this to just one elbow and sweeping bends. The boiler is fitted with two 'pop' safety valves set to 90psi. The boiler steams very freely due in to a venturi in the smokebox.
There have been some 'bugs' to sort out and experimenting with blast nozzle size has seen the diameter of the blast nozzle go from ¼" to 11/32".
As with all 4-4-0s traction on the driving wheels is limited and there is a pronounced tendency to slip. The track at Palmerston North has a 1:70 grade and this has found out the American's lack of adhesion. This has been made worse by the two crosshead boiler feed pumps which are fitted right over the rails. Any water leakage from the glands drops down on the rails just in front of the driving wheels. I have made some deflector plates which run the water away from the rails and this has improved the situation somewhat. It is only possible with this type of engine to get half the engines weight over the driving wheels. This was done in the full size so that each axle of the front bogie and the driving wheels carried the same weight to avoid damage to the lightly laid track. To improve hauling performance of the model, a large amount of lead has been cast into suitable blocks and fitted in the cab.
It will never be a hauler of heavy loads except on a flat track (the full size American 4-4-0 could neither manage heavy loads or high speeds) but the model does have the style of an American 4-4-0 of the 1870s.

A Brief History of the prototype CP173

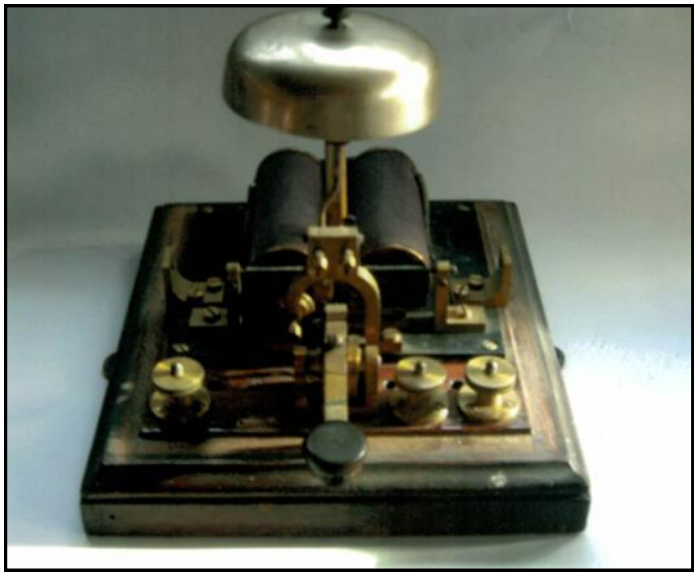
In 1864 ten 4-4-0s were built in the workshops of J.A. Norris of Lancaster, Pennsylvania. They had been ordered by Western Pacific and they carried a letter instead of a number going from A to J. On completion they were shipped around the Horn to San Francisco where it was found the Western Pacific had been taken over by Central Pacific. The ten engines were taken to the Central Pacific shops in Sacramento and put into running order. Locomotive H was given the number 173 and named 'Sonoma'. Like her sister engines she had 66" driving wheels, 16½" x 24" cylinders and weighed 66250 lbs.
In 1868 'Sonoma' was put into service hauling suburban traffic but on the 14.11.1869 due to a signalling error 'Sonoma' crashed head–on into a classmate 'Atherton' at Alameda Junction.
This was Central Pacific's first really bad passenger train accident. Fifteen people were killed and many injured. The two severely damaged engines were taken on four flat cars to Sacramento Workshops and stored.
In May 1872 CP 173 was taken into the shops for rebuilding and it was decided to develop the design to create a new locomotive class. The 'new' engine was completed in November 1872 and as rebuilt CP 173 had 54" driving wheels but they were soon fitted with thicker tyres taking the diameter to 57".
The cylinders were bored out to 17" and the weight increased to 74,000 lbs.
The rebuilt engine proved to be of a good design and spent most of the rest of its life working around the Northern California area.
Central Pacific ordered the Sacramento workshops to produce twelve new engines the same as the rebuild. The twelfth was completed in 1874. The rebuilt 'Sonoma' and the following class of twelve were regarded by Central Pacific staff as the first engines built by the railroad as previously they had bought engines from locomotive suppliers.
One of the class of twelve engines was later sold to Virginia and Truckee and named the 'Dayton' and it is on display at Promontory, Utah.
Central Pacific 173 was broken up for scrap in 1909.

LETTER FROM ENGLAND

By Stan Compton

Another train set was brought to me to sort out its problems before it was put on sale, this locomotive and tender looked well made from Germany, battery powered but useless. The plastic circular track clipped together forming a saucer shape. It needed to be screwed down onto a sheet of plywood. Maybe the track came from the Far-East, the locomotive was far too heavy for the track supplied, a waste of money.

A bell-code box was given me to prepare for



sale and I had an idea that it may have come from an unused signal box next to our local railway station. Years ago my father-in-law had bought the signal box to demolish for materials. My eldest son got on the internet and found somebody in the USA who had an identical instrument but no covering box.
I provided him with photographs of the one I had to clean up for sale. It was probably of much greater value than the modest price I put on it and it was bought by a local collector to keep.

Last month I told you about the book 'The Horse in the Furrow' describing the old ways of handling working horses. Another dodge to enable a man to get his horse to come to him after spending time in the paddock, was to bake a very basic cake but the cake had the smell of the horseman added to it. The man

would only have to hold one up to windward at the field gate and the horse would trot over to get its reward.

I have a book called 'You can't wear out an Indian Scout'. This is the motorcycle that Bert Munro tuned up and rebuilt to a larger capacity and then raced at the Bonneville Salt Lake Flats. A film was made of his exploits and I often wondered how the transmission stood up to the power he got out of that old bike. In the book 'You can't wear out an Indian Scout' I found out why the throttle was operated from the left-hand twist grip; it was not so that a pistol could be used on gangsters, but to control the bike when chasing runaway horses, catching the bridle with the right-hand!!!!!

I had a Namod toy steam engine to restore for my local 'op' shop. Someone had tried to unscrew the safety valve filler plug the opposite way and sheared the soft soldered bush. On completion I paid the shop and gave the model to a helpful club member to remind him of his youth.

Many of you will remember the film with the car with wings 'Chitty Chitty Bang Bang'. Well a number of non-flying replicas have been built but the one we saw on TV recently demonstrated by the owner was the strangest. He had based it on a 'Reliant Robin' three- wheeler and when it went out on the Highway it was a source of amusement to other motorists. I remember that there was a 'Reliant' in Palmerston North years ago; no doubt imported by someone from the 'Old Country'. It also got a lot of strange looks.
Do you remember the TV comedy 'Only Fools and Horses'? There was a three-wheeled van used to carry the team around. One episode depicted them taking on the job of cleaning a chandelier from a stately home. The funniest sequence was when they undid the nut holding all that glassware up and knocked the bolt out which landed in the wrong place!!!!
I recently read of the restoration of a 1914 Singer touring car and I was interested in the brakes. The brakes were fitted to the rear wheels only; the drums were of cast-steel and were fitted with cast iron shoes with no brake-linings!! It was claimed that the brakes were quite effective although their application was accompanied by a squeal. I have my doubts and recall that one always changed down to slow an older vehicle, double de-clutching was the norm then.

In WW1 the 'Douglas' horizontally opposed twin motor cycle was a reliable dispatch rider's mount, but as the years went by that reliability went. My brother bought a 1936 600cc version on which the magneto was the weak link. When his wife asked what was wrong with the magneto he told her it was 'missing' meaning it was 'miss-firing'. She suggested that if the magneto was not there, why didn't he buy a new one!!!
In the fifties Douglas produced a new design of a 350cc transverse-twin motorcycle with torsion bar suspension, it did not sell well. A similar lay-out to the BMW but not a patch on the German machine.
Some of you may remember a 'Cotton' motorcycle, they were built in the city of Gloucester, not far from me, and the folk museum has an example from the twenties on display. Recently in Gloucester I saw a high- tech racing machine named 'Cotton' on display while we were on our way down to the restored docks of which one part is made-over into a fancy shopping area including an antique shopping floor.
There is a lot to see in the 'Waterways Museum' (parking available on site).
There are a series of restored warehouses beside the dry-docks where we saw 'square riggers' being restored.

Stan Compton, on left, admiring Wally's GWR Parcel Van at the Hereford MES Track in the United Kingdom.

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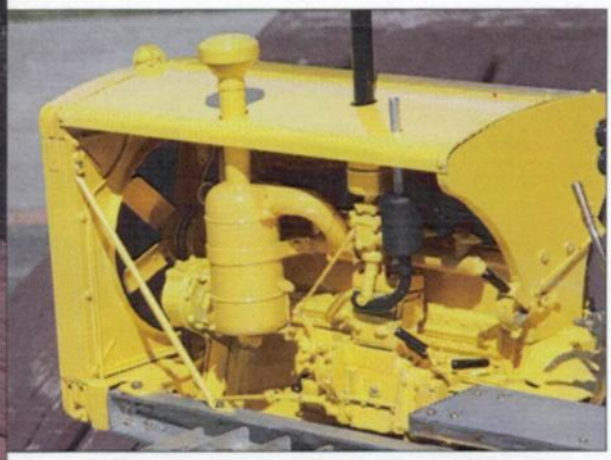
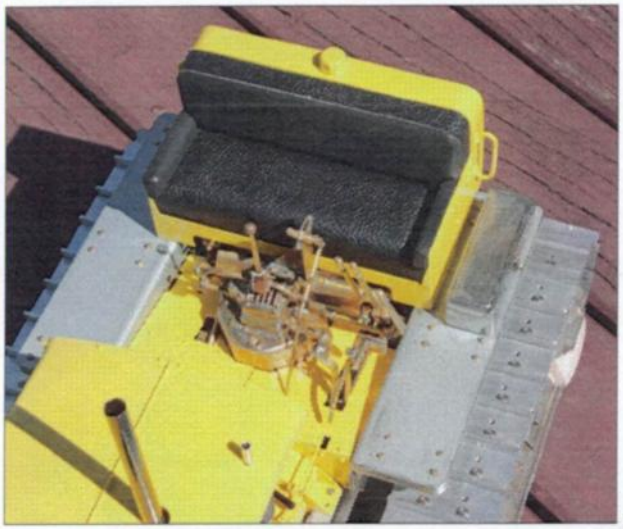
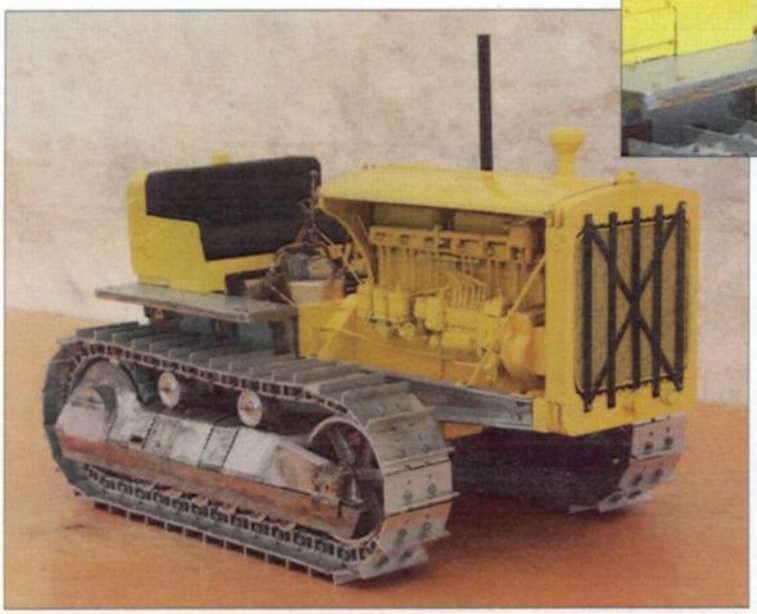
Continuation of Bruce's D8 Tractor





The tractor progress at December 2012



Left - This photo was taken in Napier at the Hawkes Bay Model Engineers 50th birthday celebrations. 07-10-12

Only a few more pages to complete this project.