October2011
No 372

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

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 September Meeting.

John Tweedie's talk on the old historical sites and old copper and tin mines in Cornwall, England was extremely interesting.
The conditions the miners worked in were unbelievable. Copper and tin had been mined in Cornwall for more than two thousand years, long before the Romans had conquered most of Britain. John has visited the Levant mine which is actually four separate mines that were amalgamated under the Levant name.
The mine shafts went down more or less vertically for 1500 – 2000 feet and then went out under the Atlantic Ocean for up to a mile. Water leaking into the mine had to be pumped out and the rock the miners had to remove to expose the copper was very hard granite.

Fred Kent had his little 'Flying Scotsman' for us to inspect. The chassis is now nearing completion.

Five members had availed themselves of the aluminium off-cuts that **Merv George** supplied and it was five very different items displayed for the competition.
Cynthia Cooper had made a 'Hanging Novelty'.
Murray Bold had made a threaded ram driven by a small electric motor. This is to be rigged to a thermostat and used to open a vent in a hot-house.
Chris Morton had made a treadmill for guinea pigs.!!!!
Bruce Geange had made two miniature Wallis and Stevens 'Advance' steam rollers.
Merv George had made an air ram and when you blew into a plastic pipe the lid lifted and two fingers came into view, giving the famous Winston Churchill V for victory sign.

To actually declare a winner was perhaps not really fair as each item displayed had called on the creator's ingenuity and skill and each of the five was completely different to the others.!!

Subscriptions are now very overdue.
If you have not paid by 30 October, you will be removed from the club list. Subs are $30 and $15 for Junior or Country Members.

October Club Night

7:30pm, Thursday 27 October 2011
Hearing Association Rooms
Church Street, Palmerston North

On the 27th October Chris Saunders will give a presentation on the development and operation of the Marlborough Timber Company's sawmilling and tramway at Port Craig in Southland. This will be an evening you will not want to miss !!!!

COMING EVENTS

Track running at Marriner Reserve Railway

November 6th from 1pm to 4pm
November 20th from 1pm to 4pm

Open Weekends

Havelock North Live Steamers
21-24th October 2011

New Plymouth Model Engineers
22-24th October 2011

International Convention in Whangarei
5-9th January 2012
their website is www.wmec.org.nz

Hawkes Bay Model Engineers 50th Anniversary on Waitangi Weekend 4-6 February 2012

November 26-27. The old logging tramway at Ongarue (just north of Taumaranui) is being developed as a cycle trail similar to the Central Otago Rail Trail. Your President is leading a trip along the trail. The base camp will be at Piropiro Flats, halfway along the trail. Good fitness, camping equipment and an off-road push bike will be required.
Contact Richard Lockett for details 06 323 0948

END OF YEAR DINNER

This is to be held at the **PN RSA** again this year. **$28.50** per head payable to the treasurer on or before the night.
6:30pm Drinks - 7:30pm Dinner
Contact Dave Newstead or Murray Bold
027 457 6175 or 06 326 9665

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

THIS MONTH'S FEATURED MODEL

By Ian Stephens

After seeing John Tweedie's half-beam engine, which I thought was a credit to him; I decided to try my hand at building one. John kindly sent me a copy of the plans so away I went. First of all was the flywheel which was cut out of ½" thick steel plate. At 11½" in diameter it was too big for my lathe so once again I had to call on Richard Stevens for help to turn this into a flywheel. It was turned on the back plate and we were lucky that we struck no bad or hard patches, as the circle had been cut out with oxy-acetylene. The machining took some time and finally got to the stage where it could be mounted on a three-jaw chuck. As machining progressed, so did the chatter. Then came the cutting of the spokes and this I was able to do on my mill. I bolted the flywheel down onto the bed of the mill. I then made a flat ring spanner out of 3mm flat steel and this was hooked over the boss in the middle of the flywheel and bolted down on one end through one of the four holes drilled for clamping the flywheel to the lathe back plate. I put a bolt through the centre of the flywheel and placed a spacer under each side to stop it from tilting and I put a stop at the opposite end to the spanner. On the stop I used a small ball race to turn against. One big mistake was not leaving a bigger web under the rim of each spoke. I had drilled three 8mm holes and I should have spaced them at least 8 – 10mm from the rim and from each spoke and that would have given me more room for final finishing. All the smaller parts I found were fairly straight forward. I set the whole engine on a wooden nail box to see how it would look. I decided it was well worth a nice mounting. I went to one of our local cabinet makers and he built a very nice cabinet out of rosewood. After looking at that I decided to get the flywheel and rocker arm brass plated. This was done by Wanganui Electroplating and this really made the engine something to be proud of.
This model would be the pride of my models. You will be able to see it in operation at Model Mee show at the end of the month.

LETTER FROM ENGLAND

By Stan Compton

Do any of you know what a 'comb' is out of a music box? It is made of carbon steel, hardened and tempered to make a musical note when struck by a peg, set in place on a rotating drum.
An old friend has acquired an antique music box; part of the 3mm thick (that tapers down to half a mm) comb is missing and he wants to obtain some gauge plate to make one!!! He is a retired GP with minimal workshop experience, I would hate to tackle such a project and suggested that he try and find a spare one to join onto the good part of his 'comb'. A new one costs a small fortune it seems, nothing like the cheap toy one hears tinkling away while the dancing lady revolves on a spindle.

I recall visiting the steamboat museum on Lake Windermere in the English Lake district years ago; now I hear that they have been awarded a grant of Lottery money to improve their facilities. We saw an item on TV one night showing the late Fred Dibnah being taken out on the Lake on a magnificent steam launch. Fred did his best to publicise our Industrial heritage and you may have seen some of the last series filmed by the BBC, travelling around Britain on his traction engine. Actually it required the use of a low-loader to be able to cover the distances involved. Fred always remained a modest person and I met him at Eastnor Castle where he regaled a few of us exhibitors on a 'steam day', about being examined in hospital by a young Doctor "Now Mr Dibnah, we use some compressed air but there is no need to worry etc." This item never got into a BBC film; more's the pity as it was very funny.

A new club member has acquired a 'Simplex' locomotive, the pressure gauge was faulty so a new one was obtained and I marked the dial with a red line indicating the working pressure. I use a draughting 'bow-pen' for this job, a whistle was also obtained. Later I had a telephone call, "I think they have made a mistake, the one they have sent looks far too long". He thought that the whistle went on top of the boiler!!!! The hand pump needs to be removed to allow the delivery stainless ball to have its lift decreased to 1/6th the diameter of the ball and this will allow a greater water flow. Injectors need 1/3rd of the balls diameter for the correct lift.

I acquired a 'Speedy' tank locomotive some years ago, a useful engines that gets used by a club member who is still completing his own engine. As designed 'Speedy' has solid stainless steel valve bobbin. Once initial wear

takes place the valves blow-by, cast iron rings cannot be fitted due to lack of port bars. I had heard of replacement bobbins made of carbon-filled PTFE (Teflon) so I acquired some to machine replacements, allowing a couple of thou for clearance, but that proved to be insufficient. I mounted the valves on a mandrel and removed a further .004" and the result was nice tight free-running valves. The first time the engine was in steam after three hours it tightened up, running lumpy. Once the fire was dropped and the engine cooled the tight spot disappeared. Now do I remove more from the valve bobbins? I think not, surely the may ease off with more use.
The late Don Young used to make-up cast-iron bobbins a thou or two oversize and then fit them to a new engine using 'coppercoat' anti friction material, a piece of wood and a hammer. It sounds crude but obtained a perfect fit this way.

I wish I could report success with the two electric clocks I made, but not so. I must have spent as much time trying to get them going as I have in building them and all to no avail.
The 'EverReady' clock will run but it stops when the gathering pawl fails to do so. Feeling my work was inferior I made up a new indexing device to cut the third attempt at a 'Count Wheel' with no better result.
The 'Balance Wheel' clock will run with no load of the motion for driving the hands, once it did run for two hours a long time ago, but not recently.
My two, one second, Pendulum Clocks, one driving an exterior dial, both keep good time which proves my workmanship.

I have a neighbour who had a problem with a defective light switch over the mirror in the bathroom, seeking a replacement the shop assistant was helpful and sold him a new switch saying, "Fit it yourself, just make sure the power is off." Now as the neighbour is colour-blind he declined the job, so his wife intimated that she would replace the switch. She did a good job too; her problem was bolting the unit back into the mounted fitting. I was able to help out here and was rewarded with a gift of expensive cakes, very nice too!!!!

Many women have a natural dexterity superior to some men. My wife was demonstrating wool-spinning and showed a stranger the principle and the lady was able to use the treadle while handling the combed wool onto the 'flyer'. She told my wife that she enjoyed the experience saying, "This is better than smoking a cigarette."!!!!!

THE MALLET CHANGES OWNERS

By Doug Chambers.

For a long time now Ken Neilsen has owned the 5" gauge Mallet tank engine. It was originally built by Paul Newton and represents one of the two operated by the Unitah Railway hauling from their gilsonite mine. Over the years Ken has carried out some refinements to the Mallet but has come to realise that age was catching up and when John Tweedie made his interest known, Ken decided that the time was right and a deal was struck.
Although John is younger than Ken he suffers from stiff knees and he had to make a driving truck more suitable to his needs than the usual type. After completing the driving truck John waited impatiently for a fine Thursday. That is the day Richard Lockett, Doug Chambers, and other members, work at the track site. Often the track is opened up for members wishing to test a new locomotive or receive driving instruction with a new locomotive without the distraction of children wanting rides. However every Thursday proved either wet or very cold so finally it was suggested that he bring the Mallet down on the morning of a Sunday running day and get some time in steam before the other engines started passenger hauling after 1pm.
The 4th September proved to be the day, fine and sunny. Richard and I opened up the track and Ken Neilsen supervised John while raising steam. Steam up and Ken drove the first lap to see that all was well and then he handed over to John and observed from the rear of John's driving truck. After a couple of laps Ken got off and sent John on his first solo run. From the grin on his face I think John had enjoyed himself and he is looking for a few more sessions on a quiet track before joining in with the other engines hauling passengers.

Under Tuition

I am sure that John will find Ken ready to give him a spell for a few laps in the future. John will find that it is good to be able to stand up and straighten the back and legs after an hour or so.

Going Solo

Ken, of course still has the 7¼" gauge 'Lion' and the 5" gauge 'Netta' (which are lighter and smaller and easier for him to handle) and we hope he will be steaming those engines for many years to come.

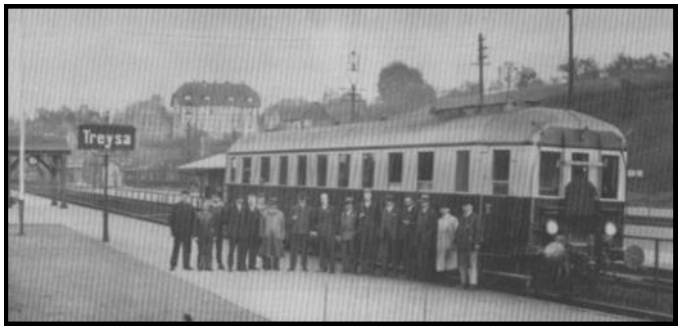

Ken watering the "Lion"

DOBLE STEAM VEHICLES

By Doug Chambers

When conversations turn to steam cars two names come to mind, Doble and Stanley. Both were American Companies but during the mid 1930s Doble had a strong alliance with the German firm Henschel. Henschel built trucks and steam locomotives and were sufficiently impressed with Doble Steam Power units that they began powering many of their vehicles with the Doble units.

The first picture shows a rail-car built at the Henschel Locomotive Works in Kassel, Germany. The rail-car is powered with a Doble steam unit and is seen at Treysa with officials and mechanics during its first test run.



The bus was also built by Henschel, and is also powered by a Doble steam unit. The buses were used by several transportation companies in Germany.

This Henschel truck is one of the many used by the German State Railway and is also powered by the Doble Flash-Steam Power-Unit.

This rather magnificent speed-boat was powered by a Doble Model F high-pressure steam power plant of 100hp. The engine was made in Emeryville, California. Warren Doble, who was a consulting engineer for the Henschel Locomotive Works at Kassel, Germany, installed the power plant at a boat works near Berlin. He was assisted by half a

dozen German workers, none of whom spoke English. The boat is seen on the Lange See near Koepenick, Germany with Warren Doble at the wheel and beside him Karl Imfeldt, Chief Engineer of Henschel. In the rear is Oscar Henschel and a Nazi officer.

MODEL MEE
EXHIBITION

We are having a Model Engineering Exhibition in the Leisure Centre, Fergusson Street, Palmerston North over the weekend of October 29th-30th

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. Please let John Tweedie know what you have. (06) 358 0150

Model Mee 2009

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THE ST. GOTTHARD CROCODILE

By Doug Chambers

Electric, Diesel-Electric or Diesel-Hydraulic locomotives do not attract my interest as a rule. However I have always been impressed by the

Swiss 'Crocodiles'. Perhaps others may be interested in them too so here is a brief history of them.

Switzerland is in the middle of Europe and is very mountainous. While steam was in operation all the coal had to be imported as Switzerland had no deposits of her own. This led to difficulties of supply as the countries the coal was obtained from, Poland and Germany, were often at War with other countries and unable to supply Switzerland. So from a very early stage Switzerland had started a program of electrification and by 1939 80% had been converted. By 1960 all the railway system had been converted for electrification. At a very early stage Swiss Railway engineers were experimenting with different types of drive. Early experiments with electric motors driving the axles through gearing proved to be less than satisfactory. High output electric motors were too bulky to be fitted near the axles or between them. The gears were found not to be a reliable method of transmission as they failed when high power was transmitted through them and they were unable to absorb the movement of the wheels through the suspension. This led to the engineers using a jackshaft powered by the electric motors, to power the connecting rods and coupling rods, just as steam locomotives received their drive at the wheels.

The 'Crocodiles' were designed for use hauling goods traffic on the steeply graded St Gotthard line, a route through Switzerland connecting to some of the most important European Railways.

The 'Crocodiles' were introduced in the 1920s and below are their Technical details.

Length	19.46 metres
Weight	124 tons
Power	2,212hp (original)
Power	3580hp (from 1943)
Maximum Speed	65 kph
Power Supply	15kv, 162/3 Hz