February 2013
No 386

THE GENERATOR

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.**

PRESIDENT	SECRETARY	TREASURER	EDITOR
Robert Edwards	Stuart Anderson	John Tweedie	Doug Chambers
(06) 355-1489	(06) 357-7794	(06) 358-0150	(06) 354-9379
pnmec_president@trains.net.nz	pnmec_secretary@trains.net.nz	pnmec_treasurer@trains.net.nz	pnmec_editor@trains.net.nz

PNMEC Home Page www.pnmec.org.nz
Email:- pnmec@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

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 January Meeting.

A cooler evening saw fewer members and partners gather at Cynthia's home for the President's BBQ. However the evening went off well with members busy chatting about what they had done over the Christmas break. A very relaxing evening.

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.

New Members

Two new members have recently joined our ranks. They are Michael Parlevliet who is a member of the Steam traction Club at Maewa just out of Feilding and Tony Brown of Raumati South who is the owner of 'Wee Jock' the 0-6-0 tank based on a 'Phantom' but much altered in appearance. The engine was built by Jim McLean.

Donation of Refrigerators

The Committee would like to thank Dave Edmonds for his very kind donation of two refrigerators. They will be a great help during the Locomotion Weekend keeping milk and cold drinks cool.

For Sale

Wheel and cylinder castings for an NZR Ab or Wab suitable for 5" gauge.
Also plans available. P.O.A.
Contact. Brian at 06 323 4128 evenings or Email bejaz@inspire.net.nz

February Club Night

7:30pm, Thursday 28 February 2013
Hearing Association Rooms
Church Street, Palmerston North

Members are requested to bring along their current project and be prepared to explain how much it advanced over the Christmas-New Year break.

COMING EVENTS

Track running at Marriner Reserve Railway

March 2nd & 3rd from 10am to 4pm
March 17th from 1pm to 4pm

Open Weekends

Palmerston North Model Engineers
'Locomotion 2013' 2nd-3rd March

Havelock North Open Weekend
Easter 29 March - 1 April

Locomotion 2013

2 + 3 March 9am - 5pm

The committee requests members for the following duties over the weekend.

Help with general setting up.
Station helpers and Ticket sellers.
Help out as hospitality kitchen staff.
Steaming Bay and parking attendants.

The public will arrive from 10am so we need to have most things set up by then.

Members are requested to bring a plate for morning or afternoon tea for either day.

There will be a BBQ Tea for members and guests.

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

THIS MONTH'S FEATURED MODEL

By Eddie Bleakley

I was recently given a set of castings for a Stuart 10V. This casting set, still in its dog eared blister pack, was supplied, free, with a small Emco lathe a friend of mine purchased about 40 years ago. There was also supplied a set of drawings in imperial (very small print) and a book in metric and broken English. Three hex bars were also supplied to make the hardware from. I was told I could have this casting set on the condition I made it myself and did not sell it to anyone else!
I started by enlarging the imperial drawings. I found, working out how to hold the parts for machining the most interesting part of this project. Accuracy and off the tool surface finish perhaps the most demanding. Because we can now purchase readymade bolts and nuts I only had to make one bolt. Having machined all the parts I assembled and timed the machine. It ran immediately on compressed air. Now that it is run in and painted it will run easily on a blow from my breath. I am now looking forward to building an S50 I imported about two years ago.

LETTER FROM ENGLAND

By Stan Compton

Computers: Everyone tells me I should have one, yes I am aware of the wealth of information available and I could always use the local library broadband service if I was desperate. Meanwhile I can hand print this newsletter every month and while I write I can visualise the next sentence.

Years ago Ted Jeynes used to contribute regular articles on his experiences as an electrician maintaining electrical generators used in wealthy homes in this country. It was his imagination telling his readers of the variety of jobs he had taken on in his working life, even simple things like how to make up clips to hold the new wiring in place. Reading from my index book eg. cranes; vol.140 19 October 1976; steam evolution 21.7.74; fairground organs 1.2.74. These were the days the Editor of 'Model Engineer' was glad to print such items. Now I find the 'Model Engineer' is printing an original series of articles as drawn by L.B.S.C. on building a 'Schools Class' tender locomotive in 3½" gauge. I wonder if anyone is building such a project which has not been brought up to date. An example is the design of the injector steam valve, this type has been found to restrict the flow of steam. I made many L.B.S.C. injectors in my early days which failed to work. Now don't get me wrong, he got me started over forty years ago but he was a talented person and we read that his injectors 'picked up' first time.

I would like to complement Brian Wiffin on tackling a 'skeleton clock' as a first attempt. A Hereford member built the John Wilding version, when completed it would not run properly so he got on the phone to John, who asked "Are you an engineer?" "Your clock should rattle when shaken or it won't run."
To give you an idea of how it should be I once asked my local repairer for advice when one of my clocks kept stopping, he asked "Is the minute hand going up or down?" The weight of the hand when rising is enough to stop a clock. This need not put anyone off who would like to have a go. I have a copy of John Wilding's construction book on how to build a 'Castle Clock' on a Unimat 3 lathe with a milling attachment for drilling and gear cutting using an index plate number DD62 made by Chronos Designs ltd to cut the gears. I am not sure that they are still available. I have made my own indexing plates using the instructions contained in 'Clockmaking for the Model Engineer' by Colin Thorne using band saw blades. This is an excellent book with a wealth of information on how to get started. I am lucky to have a decent Myford ML7 and milling slide to use. My own 'Castle Clock' has been running for months now in my workshop, a very basic design that is weight driven.
Remember that if the index plate, securely mounted on the end of the lathe mandrel is not accurate, the resulting gear will be the same and will not mesh properly. It all sounds complex but the principles are very simple really.
John Wilding books are available from
www.ritetimepublishing.com
There is a great deal of satisfaction to hear the clock you have built start to run once you have set it into beat, that means an even 'tick-tock'.

One of the Hereford members got ambitious fourteen years ago and started to build 'Caledonia' the Isle of Man Railway 0-6-0 in

7¼" gauge, now age is catching up so he went into Gauge 1 thinking of less weight to handle but not that easy. Recently he told me he has a copy of 'Making an Eight Day Long Case clock' by Alan Timmins from T.E.E. publishing bought in 1981. Most people call these a 'Grandfather Clock'. If he had started that when he was younger he would now have a family heirloom. I have a copy of the book on loan and it is most descriptive with very clear instructions.

Some years ago I built a 'Maid of Kent' by L.B.S.C. but with the correct 'Midland Compound' outside cylinder outline, using 'Swindon Draughting' in the smokebox and careful valve setting it sounded really great when running slow. One day at the Hereford Tracksite a young woman approached me and told me that she fires the locos on the 'Welshpool and Llanfair Railway'. "Right, now you can have a drive of my locomotive". "But I have never driven a model locomotive" she replied. After some instruction she took over and 'was over the moon' sitting behind a small mainline engine for the first time. She was a 'natural driver' and greatly enjoyed the experience. This memory came back on the last running day of the year. The day was cold and no public. The engine is now owned by one of our members and he had it out on the ground level track, I could hear that slow valve beat as he went through our tunnel on the far side of our track.

One of our senior members also had his inside cylinder 'Maid of Kent' in steam on the raised track and going well. This engine was a first attempt built on retirement from the building trade so he had to learn a new set of skills. Now he is building a 3½" gauge Hunslet called 'Charles'. The chassis is the same length as the 'Maid of Kent'.

A McInnes-Dobbie steam engine indicator

The following is from notes written up by Natalie Cadenhead about the McInnes-Dobbie steam engine indicator displayed in the Canterbury Museum. Alfred Herbert (Bert) Larkman was chief engineer of the 'Aurora' during Shackleton's Imperial Trans Antarctic Expidition of 1914-16. The Indicator was taken to Antarctica on the 'Aurora' by Larkman and is displayed in its original case, with tools, recording charts and instructions. With generous assistance from Federal and State governments the 'Aurora' was overhauled in Sydney. It was intended that the ship would if necessary stay in the Antarctic for two years. In Larkman's log he commented, "many engineers came on board with a view to sailing as Second Engineer: they took one look at the engines and promptly went ashore. One with a sardonic grin, remarked how nice they would look in a museum." The 'Aurora' left for the Antarctic and was moored off Cape Evans where preparations were made to settle in for the winter. On the 6th of May 1915 she was carried out to sea after breaking her moorings leaving the now stranded shore party. The rudder was bent over to starboard and smashed by the ice. Larkman and the ship's carpenter worked to make a jury rudder and the crew were impressed with Larkman's tireless efforts to keep the engines running. Larkman and second engineer C. A. Donnelly faced several problems, one was that sea connections became frozen solid and these had to be cleared using a hot iron rod to thaw out the ice.
The second was metal fatigue caused by the extreme cold. When making the new rudder they were using some scrap steel joined together with rivets. In his log Larkman wrote "the way rivet heads dropped off with the lightest of taps was an eye opener and gave cause for thought - especially when a handy one in the circumferential seam of our boiler parted with its head with equal readiness. A fitted bolt replaced that one, but there were a few thousand others, and there was nothing one could do other than think quietly about the possibilities and hope for the best."
One can only imagine the kind of quiet thoughts the engineers had thinking about the boiler disintegrating with rivets popping out while floating rudderless on a sea of ice. Larkman was aware of the potential for injury if the rivets did go and records in his log that as the ice was breaking up around the ship and they needed to get the boiler in steam they, " Took things very quietly over raising steam and at 30psi all hands were up out of it, with those rivets in mind, it seemed a one man job to lift the pressure and try out the engines."
Getting the boiler up to temperature and with useable pressure took considerable time and manpower. The boiler was filled using ice lifted aboard in chunks, broken up and put through the manhole on top of the boiler. The ice had to be melted slowly with more being added until the

required level was reached and then the boiler was brought up to temperature. It took the best part of a day to fill the boiler and usable pressure 40psi, was achieved by middle of the following day.
Some ingenuity by Larkman provided a second use for the boiler- that of fresh water production. The steam was diverted into the main starboard water tank through a pipe where it would condense and the run into the tank. This water was supplemented with snow when available. After ten months stuck in the ice pack the 'Aurora' had drifed 1600 miles from Cape Evans and was now in ice free waters. Using wind and steam power she made her way slowly towards New Zealand.
Finally contact was made with the Bluff radio station and a tug was sent out to tow them into Port Chalmers.
Larkman returned to London where he completed an engineering surveyship and then he worked with the Admiralty, the Ministry of Munitions and the War Office in a variety of positions. In 1920 he returned to New Zealand to become head of the Wanganui Technical College. He retained a strong interest in Antarctic exploration and just two weeks before he died in 1962 he was told that a peak rising from the Polar Plateau had been named for him. His final wishes were that his ashes be spread over the Larkman Nunatak. This was done by the Scott Base leader R.A. Tinker from a United States Navy 'Hercules' in November 1962.

Thursday 24.1.2013

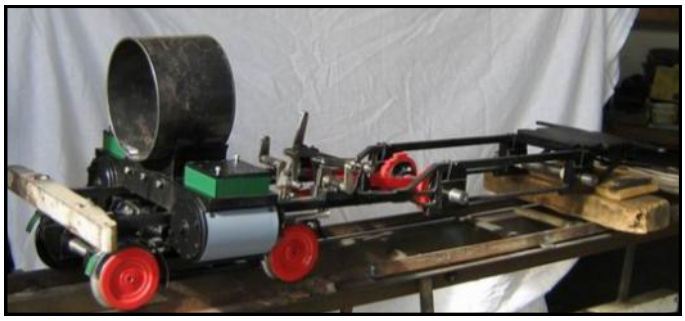
Dave Brownlow, accompanied by John Antcliff brought Dave's 'Belton Manor' up to Marriner Reserve Railway for a boiler test that was followed by a run on the track. Dave admitted that it was his birthday and I honestly can't think of a better way to celebrate one's birthday than by raising steam and having a run.
Bob Walters also was in attendance and this too was fitting as the 'Manor' was the second engine he built. The 'Manor's' boiler and safety valves passed examination and after a few circuits of the track Dave handed the controls over to John and from the grin on John's face he was enjoying every minute of it.
The photo shows John driving and Dave as passenger. The 'Manor' is a credit to Bob's workmanship and the fastidious maintenance that is evident on all Dave's engines.

Progress on the American 4-4-0

By Doug Chambers

Through the last three months the 4 -4 -0 has advanced considerably. The tender tank has now been painted and is ready for the gold lining and the letters and numerals depicting C.P.173. The pipe work under the tender will not be made up until the engine and tender are linked together and I can see where the best places for the flexible sections can fitted.
Progress on the engine has been good. The Stephenson valve gear between the frames is now complete with the rocking shafts taking the drive to the outside of the frames also in place. The bar frames are decidedly spindly being made of ½" square bar. Chris Rogers visited just before Christmas and after studying the frames he commented that there didn't seem to be much keeping the front buffer and the drag beam apart from each other.
When I was ready to start machining the cylinders I came up against a problem. On the general arrangement drawing it clearly shows the cylinders having a slight incline. On the cylinder drawings a register is shown machined so that the cylinder sits partly on the frames but there is no mention of machining the register to incline the cylinder. This led to a lot of 'head-scratching' and finally I measured off the G.A. drawings (this is not done in the best circles of good engineering practice) but it gave me a clue. The frames were not parallel to the rail. They tapered down towards the rear at about two degrees. But why? Then I recalled that the prototype had been built with 66" drivers from new, but after its rebuild it was fitted with 57" drivers which meant that the frames and cylinders took on an inclination. The rear of the boiler must have been packed up to compensate and the smokebox, running boards, and cab altered to suit as well. This wasn't the last of the problem. The four wheels

of the front bogie all have fenders (splashers) but the fenders of the rear bogie wheels no longer cleared the guide bars so the fenders were cut away. Usually the piston rod is exactly between the two guide bars but as there was still insufficient clearance a new rear cylinder cover was made with the lower guide bar on a level with the piston rod. The lower guide bar is made of a thin flat steel section to clear the bogie wheels, but the upper guide bar is rather



substantial and 'fish bellied'.
I set the model up to the right height at the front and at the rear. I noted that the rear driving wheel axlebox would have to sit further up the horns. The forward driving wheel axlebox would sit lower in its horns to compensate for the slope of the frames.
Not perhaps a desirable state of affairs but evidently acceptable to American railroad practice of 1879.

As far as the model goes there was another undesirable feature. The passage of steam from the header to the valve chest involves six right angle elbows. This would restrict the steam flow and perhaps explains the 1½" bore of the cylinders. I have altered the design and now the steam flow to the cylinders is via a couple of sweeping bends. The exhaust called for an inverted 'T' arrangement which I have changed to an inverted 'Y'. The cylinders are complete except for the polished brass end covers and the slide valves. The smokebox saddle is made and the smokebox has been rolled.

Auckland Garden Railway 2013 convention

Murray and Janice attended the convention We went to 7 garden layouts and had many talks on garden railway topics.

Chas Hoskins LGB Layout

A magnificent bridge with a Garrett crossing

A new railway at the home of Murray Lee

Janice and I took 3 days to get to Auckland and 9 days to get back to Ashhurst.

The bus at Taumaranui Holiday park. We needed the power as the bus batteries were getting quite run down.