



May 2015
No 411

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Newsletter of THE PALMERSTON NORTH MODEL ENGINEERING CLUB INC

Managers of the "MARRINER RESERVE RAILWAY"

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TRACK RUNNING

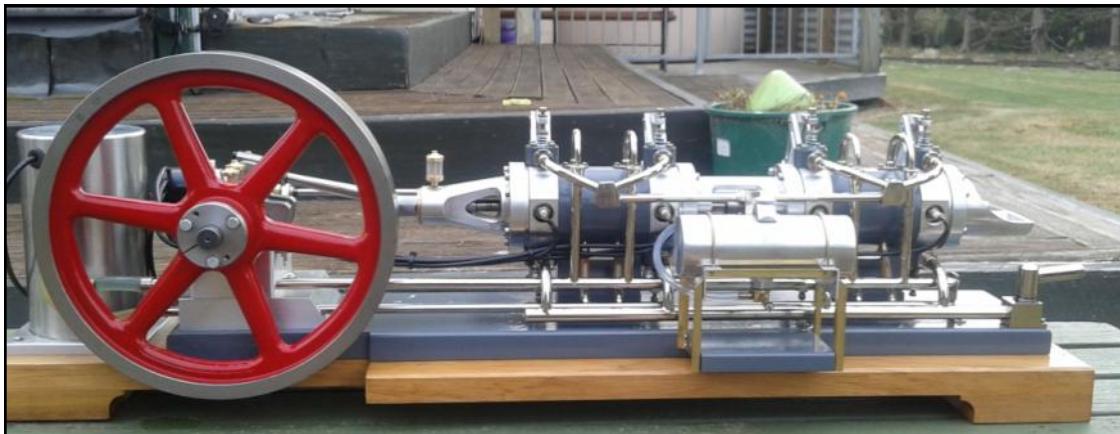
This is held on the FIRST and THIRD Sunday of each month, from 1 pm to 4 pm Summer and 1 pm to 3 pm during the Winter. All club members are welcome to attend and help out with loco coaling, watering and passenger marshalling - none of the tasks being at all difficult. We may even offer you a cuppa.

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
22b Haydon St,
Palmerston North 4414

Place
stamp
here

This Months Featured Model



Report on the AGM and April Meetings.

The various reports were read and accepted and then voting for the officers took place.

President	Robert Edwards
Vice President	Murray Bold
Secretary	Fin Mason
Treasurer	John Tweedie
Committee	Cynthia Cooper, Richard Lockett, Chris Morton Dave Newstead.
Editor	Doug Chambers
Track Convenor	Richard Lockett
Librarian	Doug Chambers

The boiler committee are appointed (not elected) and the present members are prepared to carry on for another year.

Doug Chambers, Richard Lockett and Ken Nielsen

With the AGM declared over voting took place for the '**Clubman of the Year**' trophy and this year the recipient was **Richard Lockett**.

Ian Stephens displayed a recently completed vertical stationary steam engine. He admitted turning to **Pat O'Shea** for some help and between them they have turned out a very nice little engine.

Dave Newstead showed us a transformer made over sixty years ago by himself and his father. Recently he has added improvements. Its use was to power a Meccano electric motor of course!!

Graeme Hall had the crankcase for a seven cylinder radial aircraft engine he is building. Four stroke and spark ignition.

Chris Morton showed us a part off saw made from an angle grinder with part-off blade mounted in a frame bought from 'Super Cheap'. Not as robust as he would like, but it proved able to do the task asked of it!!

May Club Night

7:30pm, Thursday 28 Month 2015
Hearing Association Rooms
Church Street, Palmerston North

There will be a speaker this club night.

Steve Denby
will talk about
"Engineering in the Antarctic Winter."

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

May 17 th	from 1pm to 3pm
June 7 th	from 1pm to 3pm
June 21 st	from 1pm to 3pm

Open Weekends

Cambridge Model Engineers

May 16th -17th from 10am to 3pm.

Manakau Live Steamers

Queens Birthday Weekend May 30th - June 1st

Wanted

A request from Bob Owen who needs the 1997-1998 issues of 'Engineering in Miniature'. He wants to purchase or borrow the magazines or arrange photocopying, which he will pay for, of the articles on **Building a One Year Clock**. Contact Bob on 027 593 6533

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

The 'SNOW' Engine

By Graeme Hall

A tandem double-acting gas engine built to pump natural gas in the early 1900's. It was built by the F S Snow Engine Company, Buffalo, N.Y., U.S.A.

A tandem double-acting engine is in effect a four cylinder internal combustion engine with a power stroke every 180° of crankshaft rotation.

Two separate cylinders in line each have a piston with a combustion chamber at each end. The unique feature is that a double-acting engine fires on both sides of the piston.

This requires a seal on the piston rod at four places. These engines, designed from steam engine practice, were very large with a 24" bore and 48" stroke, 18ft diameter flywheels and an engine weight of 140 tonnes, 600HP at 120 RPM.

A high pressure gas pump was driven from the crankshaft end. This was to pump natural gas across vast distances in America.

The last engine (built in 1917) ran until 1996. I first became aware of these engines from an early Encyclopaedia of Heat Engines and recently obtained a book on building the model from England.

Construction:

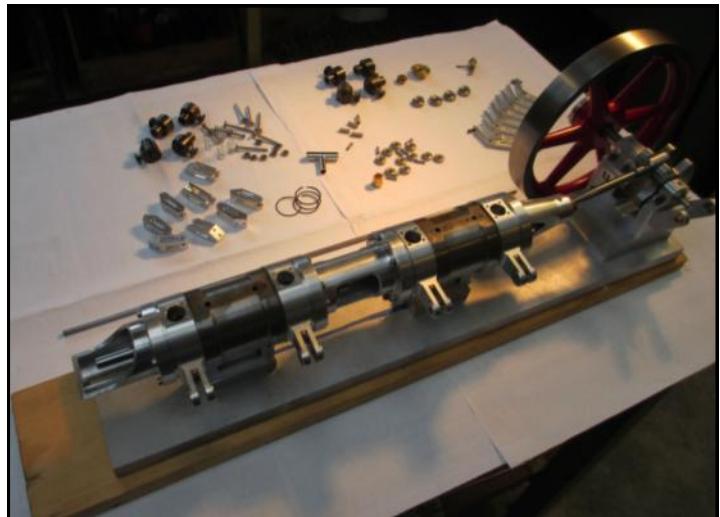
A start was made with building a number of jigs, mandrels and fixtures, including a cylinder drilling jig with one hole slightly off-centre which caused some later problems.

With materials in stock, 8 valve rockers made a time consuming job only to be repeated due to a measurement error – brain fade!!

screws obtained (expensive), 4 silicon lipped seals and two bevel gears from Australia.

Valves were made from stainless steels to fit valve cages made from mild steel. Cylinders were next assembled on to piston rods.

Problems due to very close tolerances and clearances (pistons .002), the pistons and rods must move freely. This required patience, assembling, adjustments and reassembling to



achieve free travel of piston and rings. Crankshaft, connecting rod and mounting brackets were next. A base plate was made from scrap aluminium and brackets for camshaft rockers. Fitting up camshaft – more alignment problems! Cams, rollers and distributor drive followed.

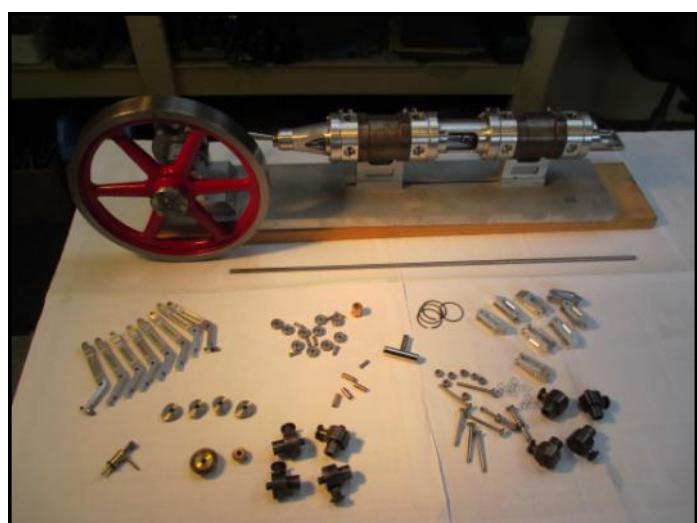
The engine systems required lots of thin wall brass tubing, 5 different sizes, requiring 5 tubing benders to be made. Next – the dreaded bending of the tubing. With careful annealing and filling tubes with low-temp metal resulted in good bends, then cut and soldered to flanges and connectors, polished and nickel plated.

Ignition System

A suitable distributor and electronic ignition system is available from the U.S. at approx \$500.00 – too expensive!! \$10 worth of plastic and a distributor was built, followed by 4 spark plugs. A coolant tank built and electric pump obtained.

Fuel system, carburettor and tank with mounting frame followed. With engine mounted on wooden base, valve and ignition timing adjustments made, fuel and coolant added – a test run was made!!

Ignition problems meant that a second distributor cap to be made and a coolant leak to be fixed, after which longer test runs were completed.



Aluminium combustion chambers, cylinder heads and pistons, steel cylinders and cases were made. A large number of stainless cap

So far it has been a very different, but successful model.

Specifications:

Bore - 1"
Stroke - 1.87"
Ignition - 12v H.T.
Fuel - Fuelite with oil mix
Cooling - Water with anti freeze

Interesting websites to see working examples of this engine – ENJOY!

https://www.youtube.com/watch?v=XRKr_6zPDYQ&feature=youtu.be

Start about 20mins in.

LETTER from ENGLAND

By Stan Compton

Let me take you back to 1965 when I had not been living very long in New Zealand; someone gave me a stack of old 'English Mechanics' with articles by the late LBSC, known later as 'Curly Lawrence' to the few who were allowed to visit this talented person. This was a new world to me; descriptions of building small steam locomotives with every detail covered, simplifying the complex. I recall his advice to 'Forget the blobs and gadgets and get on with the main work.' Years later how often I found men messing around instead of getting stuck in. The nearest track site to me was in Alma Road, Wanganui that had been built in 1952, largely by the efforts of two men who are now no longer alive. A plain multi gauge raised circuit that served for many years; a small club house was built that nowadays houses a table top railway. In 1983 a major rebuild took place, carried out by a new group of club members, who turned the track into a ground level track with a figure eight plan with a bridge and a cutting. However the cutting flooded after heavy rain and the salt in the sand quickly started corroding the steel raise. Now I gather the track has been uplifted and sold. The original purchaser lost interest in his dreams of having track of his own and Eddie Bleakley bought the track and he laid a very nice little track around an old orchard on his property. That rebuild of the track should have brought new life into the old club, but times change and attempts to encourage new young members failed. Now I hear that the Rotorua track has been removed, not due to a lack of public support but due to rental charges being

increased to an impractical level. What a pity, it ran alongside a stream with ducks swimming on the clear water, and through native bush. Although some sites get closed, new ones appear so I am still hopeful for the future.

I am concerned about my local track at Hereford; it does need maintenance. There is a batch of re-cycled plastic sleepers ready on site but no labour is available to install them because the new boating lake (20 x30metres) is being built and that is taking up all the available labour force.

The club also needs two new sets of points and storage tracks to accommodate up to fifty 7½" locomotives for that clubs AGM which is to be held this year on the Hereford site.

The "Ironbridge Gorge Museum" known as the birthplace of the industrial revolution, had an order to supply 100 tons of wrought iron for building new gates for the Royal Palaces etc. The only place in the country where it is made now. The last time I was there I visited the forge on the site where I saw small stacks of 300mm square iron plates ready to be heated up and put under the steam-hammer, ready to be made into iron bars. This reminded me of working in an industrial blacksmiths and engineering shop in Vancouver BC. A regular order was for six inch diameter steel rings to be used for loading ships. Each ring would have a pair of wire strops spliced on to lift a three ton load. Years before welded rings had failed and the Union demanded an old time blacksmiths weld. This too could not be guaranteed so we arc welded the steel rings and then the smith heated them up and lightly forged them. Under a five ton test the rings would stretch but they never broke.

There is a book called 'The Horse in the Furrow' published by Faber; it is very interesting, all about the days when the horse was the prime mover on the farming world. The horsemen formed their own secret society using what we would call witchcraft to retain control of their employer. I discovered that in parts of England when a new house was to be built in the country, the skull of a horse was buried under the front doorstep to, I assume, keep away evil spirits!!!! There was also a sample of female hair buried with the skull, something to do with fertility, but we won't go into that!!! Another example of ancient practice used by the horsemen is the story about the farmer who ordered, not asked, his head horseman to have a wagon and team

harnessed, ready to leave for the market at 6am next morning. On time the farmer found the wagon backed up to the dung-hill with the team of heavy horses standing quietly **in** the wagon!! When he tried to move them they would not budge, no option, but to ask for help from his horseman who climbed up into the wagon and stroked the noses of the team who followed him out of the wagon onto the dung-hill and then they were led around to be backed up and harnessed up ready to leave. His secret was to apply a substance onto both forefeet of the team. He later rubbed their noses with vinegar which overcame the smell of what he had applied to their forefeet previously that had prevented their movement.
Next time I will tell you about the mystery cakes baked by our intrepid horseman!!!

FOR SALE



A Global Lathe 280 VF

Comes with :-

3 jaw chuck of 125mm,
4 jaw chuck of 125mm

4 jaw chuck of 160mm.

E40 Collet chuck & nut (no collets or spanners).

E25 Collet chuck & nut (no collets or spanners).

Face Plate,

Fixed steady

Travelling steady.

One spare quadrant and extra change gears

One spindle bore stop and a bed stop.

Oil tray and an unused stand.

Spare back plate

Assorted new spare parts,

Operators manual and Parts List.

The Lathe has power cross feed

There is no tooling,

A 2 axis DRO is fitted but not included with the price. Price is \$3500

Apply to Brian Wiffin 07 888 8493

Newsletters from other Clubs

Manakau Live Steamers

Some of their members attended the Glenbrook harvest Festival . Alan Familton had his Foden overtotype three-way tipping steam wagon there. There were helicopters, model traction engines, stationary petrol engines, vintage tractors and farm implements and horse drawn carts. Looks as if it would be an interesting event to attend.

Hawkes Bay Model Engineers.

Their members are busy laying the new 7½" rail around their track as weather allows.

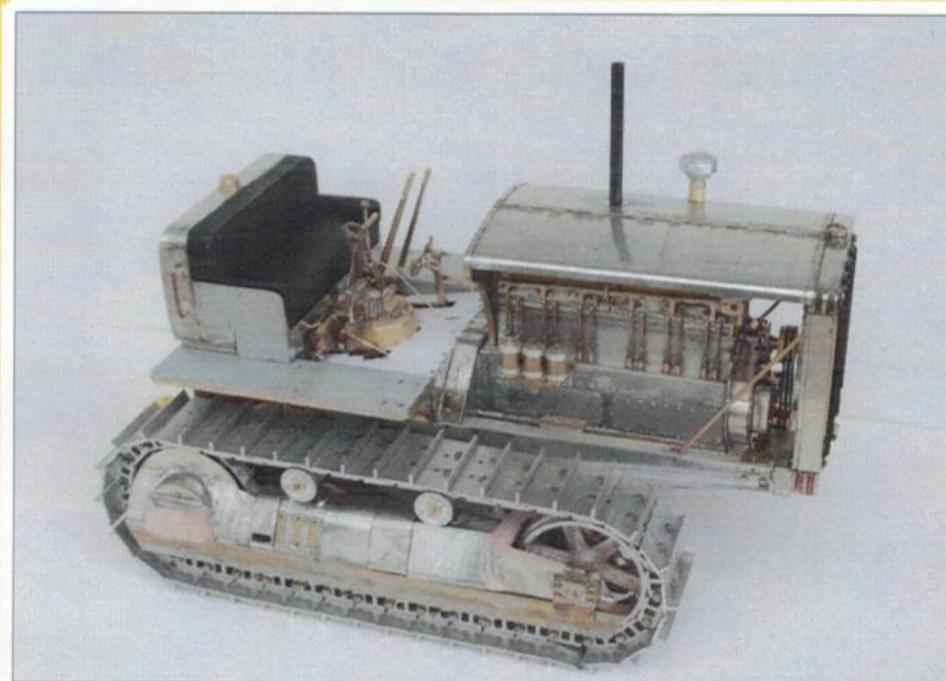
Marlborough Model Engineers

They expect to have 5 new engines running this year. Some members of their radio control group were involved with the design and building (together with Safe Air staff) of a V1 doodlebug. This model weighing in at 192 lbs was successfully flown at the Easter Omaka Air Show. Unlike the prototype it is not powered by a pulse jet, but has five electric ducted fans that give three minutes flying time.

South Canterbury

Their members visited Haydon Brown who showed them through his Target Products factory where ammunition is loaded, packed and distributed along with the clay targets to the Clay Bird Shooting fraternity.

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



21st September 2011, All operating levers and pedals are in place and the floor plates fitted. The gear lever, master clutch and steering levers operate the tractor.