The Generator

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Palmerston Model Engineering Club

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The Palmerston North Model Engineering Club

Upcoming Club Events

Club Nights typically start at 7.30pm and are usually held at the The Hall, 435 Church Street, Palmerston North.

Thursday 28th May

Club Night
Guest Speaker John Neal

Thursday 25th June

Club Night.
Model Engineering Quiz

Marriner Reserve Railway

Sunday 7th & Sunday 21st June

Railway operations at the Marriner Reserve
Trains in operation from 1pm to 4pm
Weather permitting (Richard Lockett 027 2541059)

Thursdays

Railway operations for club members
Subject to ongoing track maintenance and weather
Contact track manager (Richard Lockett 027 2541059)

Club Notices

Club Night 28th May
Club member John Neal has led an interesting life starting out as a diesel mechanic in the Marlborough Region of the South Island. Upon gaining his pilots licence and a change in his career path allowed John to work in Labrador Canada, Piper Cub and Cessna 180's becoming his work vehicles. These experiences probably helped John in becoming recruited into the RNZAF as the base Chaplin at the Ohakea and Woodbourne Airbase's. Come along and hear of John's tales from the back country of New Zealand and Canada.

Pictured right a Piper Cub model PA18-95 powered by a 90hp 4 cylinder Continental engine, a 2 seater tail dragger built in 1956. First designed in the 1930's but are still being built and operated by aviation enthusiasts and prized for their short landing and take off performance.
BQS having landed on a shingle bank beside the Hokitika River, South Island, New Zealand, hence the large rubber tyres! Photo editor

Subscriptions are now due.
Membership subscriptions of $40.00 as set at the Annual General Meeting are now due.
Please pay Club Treasurer Lawrence Brooshooft at a club night or preferable pay direct into the clubs bank account via internet banking. **Account number 06-0996-0831663-00**
Please remember to use your name as the reference.
It would be appreciated if you could action this payment promptly so that the treasurer doesn't have to spend time chasing you up with a reminder!

RailX 2026
PNMEC have been invited to exhibit examples of our modelling projects at this year's RailX at the Baber Hall on the Saturday and Sunday the 4th and 5th of July 2026. We have been allocated a 10 X 5 metre area (the stand) which we need to utilise to best advantage! On past occasion's when the club has been invited to exhibit we have kept to the railway theme but on this occasion we have decided not to! Hence a display of our club members Traction Engines will spearhead our display along with a 3D printer and if you would like to display items of your work please contact Jon Mason ASAP 021 940634 otherwise some of you will be getting a call with a request for items that the committee feels are to best represent the club.
Also we would like a bit of help in manning the stand! With the opening hours 10am to 4pm two 3 hour shifts each day should cover it ok. If you can assist with this give Jon a call.

Annual General Meeting

The club AGM was held on the 23th of April at the Board Room, Palmerston North Hospital.
Our first AGM held under our new constitution.
Apologies were given and the minutes of the 2025 AGM were read and approved
President Johathan Mason presented his report for the outgoing year.
Treasurer Lawrence Brooshooft presented the financial report year ending 28th February 2025.
Both reports were approved by the members present.
Membership subscriptions are to remain at $40.00 for the 2026-2027 year.
Reports were presented from the Boiler committee and the Marriner Reserve Railway Track Manager.
Club Officers were elected as follows,
President: Jonathan Mason.
Committee Members: Bill Krippner, Richard Lockett, David Bell, Stephen Drummond and Lawrence Brooshooft.
Thanks were given to Cynthia Cooper and Fin Mason for their many years of service to the PNMEC as office holders.

April Club Night Report

The theme for the evening to follow on from our AGM was to bring along your construction toy that you had during your formative years or for some of you the years that followed as well and this saw a good turnout of items. There would seem to be a few Meccano collectors amongst the membership with Meccano items being the predominate product on display. The most unusual item was a Juneero tool which allowed the user to build up Meccano like models by cutting and punching out your own metal strips and plates! The sets came with wheels, axles and the 6ba nuts and bolts. These sets were made in the UK between 1935 and 1956 and also produced under license in Canada. Lego Technics models included an excavator, concrete mixer truck, dump truck and a truck mounted crane.

John, Owen and Bruce mulling over the Meccano models, sets and literature assembled by PNMEC members with colour schemes that would suggest that these items spanned about 75 years of Meccano production!

Photo Jon Mason

Stephen and Kyle discussing the finer points of HO railway modelling with Stephen's part built layout which he had brought along as in would fit through the door easily at the AGM venue.

Photo Jon Mason

The Bobber Project

Part 7 & 8 Merv George

With the main frame completed the next priority was to assemble the Bobber enough to try out the ABS brake system and see if we could get it to work. Donor wiring loom and ABS unit and original brake lines were jerry-rigged along with instrument panel and battery. All the necessary lights illuminated. Then to push the Bobber around exceeding 10KPH to see if the ABS indicator light went out. Success, it did!

Now to minimise the original wiring loom. A lot of R&D went into confirming the original wiring and drawing up a new circuit diagram. Most of the excess wiring was removed from the loom.

Some design work for a gusset across the steering head area which also doubled as a mount for the ABS unit and wiring / component platform. Due to its size it was bolted on with a sandwich type mount for strength. The platform will eventually also mount the fuel tank cover. The frame had to be stripped and mounted in the jig to ensure the platform was made “square”.

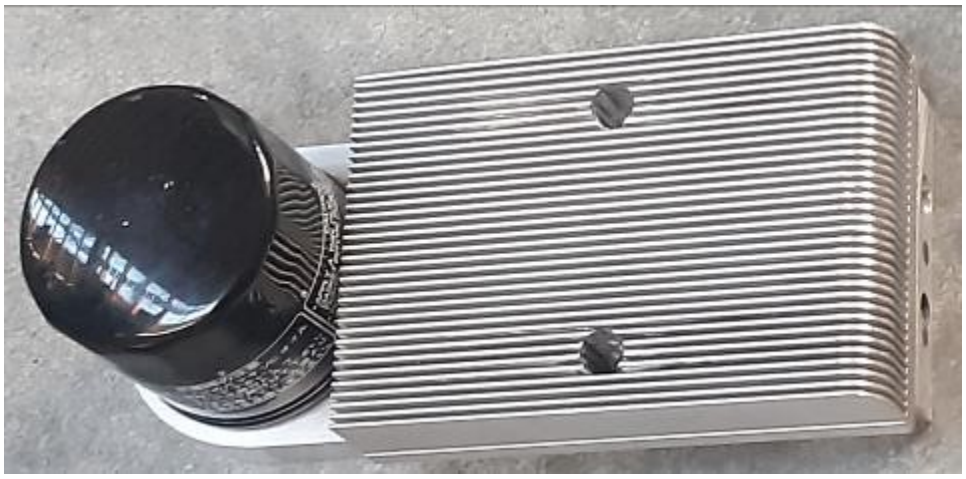
Frame steering head gusset and ABS electronic unit mounting bracket positioned on frame.

Photo Merv George

Some parts finished were the donor rear axle machined to suit and the oil cooler largely finished. It consisted of an electronics style heat sink bolted to an alloy bar which had oil paths machined in it. The oil filter was also mounted on this and will be in the airflow for maximum cooling. Due to the large head of oil in the return line a non return valve was manufactured and fitted into the oil cooler body. This will prevent oil returning and possibly flooding the engine dry sump when it is not running.

Again, the front end and wheels were assembled onto the frame along with brake components.

The brakes will now be plumbed up properly so that any necessary mounting brackets can be welded onto the frame.



Combined oil filter and oil cooler machined in aluminium alloy.

Photo Merv George

The oil tank is the backbone of the frame. Inlets, outlets and breather ports are required in ¼" BSP. The wall thickness is only 1.6mm so not ideal for tapping. I could thread inserts and weld them into the tube but I thought a Thermo Flow or friction drilled hole would be neat and tidy.
I tried turning up and heat treating a piece of D2 steel but even using extreme heat treating it was not up to the task. The tool can get red hot during the forming process and in this case the tip either rounded off or welded itself to the job and sheared off.

Mild steel ERW tube being test drilled to determine the best method of achieving a threaded hole in its 1.6mm wall thickness.

Photo Merv George

Using a diamond grinding wheel I ground down an old carbide mill cutter to the desired shape. This was a slow process but with patience it was achieved. In use it did the job, emerging from the hole red hot but still in good condition.
¼"BSP requires a core hole of 11.45mm Dia so quite large. I have had great success thermo forming for 6 and 8mm threads but with the ¼"BSP there just wasn't enough material available to form a good cavity. The inner end of the cavity had thinned down to a knife edge and even further up the cavity the tap cut right through the cavity wall.
Enough cavity probably remained to get 3mm of good thread. However the inner end of the cavity was jagged and broken away not ideal when inside a sealed oil tank with no guarantees it could be removed. So in this case the decision was made not to use thermo forming but instead turn up some threaded inserts and weld them into the oil tank. Nothing ventured, nothing gained as they say!

Ex tungsten carbide end mill being reshaped into a thermo forming drill insitu mounted in the spindle nose of Merv's Turret mill with 150mm Dia bench grinder mounted onto the mill table.

Photo Merv George

A Cunning Plan

I've had a niggle in the back far corner of my head for some time to fit my lathe up with a collet system for machining those small diameters which can become problematical if gripping in the 3 jaw chuck. Problem being that I don't wish to spent any money on them! Machining a spilt collet out of alloy bar works ok as a one off solution. I do have a set of ER25 collets used on the Emco Mill Drill and mounting these into the spindle nose of the lathe would be a solution. My lathe has a D-4 cam lock chuck mount with a 5 Morse taper spindle bore for a dead centre setup. My Mill Drill ER25 collet chuck is 2 Morse taper. The penny dropped after a lot of casual mulling over that all that was needed was a 5 to 2 Morse taper sleeve and modify it i.e. cut it in half length ways and we're in business!
A big number 5 Morse taper sleeve won't be cheap and I'm going to cut it in half so maybe. My lathe spindle nose taper is mint so a second hand sleeve was not a welcome option even if I could find one. Upon looking on the internet an Auckland based engineering supplier had a number 5 Morse taper sleeve on sale for only $35, so I brought a couple a 5 to 3 and 5 to 2. At this time I was eyeing up a ER32 collet set on Trade Me for sale in Feilding which was showing no interest, so I placed a bid just before it closed. Plan working well! Went to watch the finish of a one day cricket game and fell asleep and missed the auction close, someone had outbid me by a dollar! If that was one of you lot, you did me a favour!
My $35 taper sleeves turned up and the 5 to 2 sleeve was measured up and cut using a cut off wheel on an angle grinder and with the sharp edges tidied up it was time to mount the sleeve and collet chuck into the lathe spindle nose, fit a collet into the chuck with a length of bar stock secured within. Looking good until I switched the lathe on!
The bar stock wobbled around alarmingly, didn't need to test with the Dial Test Indicator (DTI), not what I wanted to see! The morse tapered sleeves purchased would appear to be of a quality as to make them of no value or use to anyone in the engineering industry. Gripping a tungsten carbide tipped dead centre in my 3 jaw chuck and testing with the DTI at each end of its number 3 Morse taper (within 0.015 mm runout each end, not much wrong with my 3 jaw chuck), the tapered sleeve was placed on the dead centre and the runout checked. The DTI needle raced around the dial with a different amount of runout at each end. With that they went into the scrap bin, "you only get what you pay for" as they say.

Richard Lockett

Date and Time	Activity
Thursday 28th may 7.30pm	Club Night Guest speaker John Neal
Thursday 4th June 7.30pm Sunday 7th June 1pm to 3pm Sunday 21st June 1pm to 3pm Thursday 25th June 7.30pm	Committee Meeting Marriner Reserve Railway Marriner Reserve Railway Club Night Model Engineering Quiz
Thursday 2rd July 7.30pm Saturday 4th July 10am to 4pm Sunday 5th July 10am to 4pm Sunday 19th July 1pm to 3pm Thursday 23rd July 7.30 pm	Committee Meeting RailX 2026 RailX 2026 Marriner Reserve Railway Club Night TBA

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