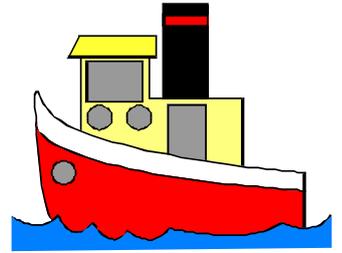




# Wheels and Floats



Newsletter March 2020

## TAURANGA MODEL MARINE AND ENGINEERING CLUB INC.

The Secretary  
PO Box 15589  
Tauranga 3112

Palmerville Station Phone 578 7293

Miniature Railway Memorial Park  
Open to Public, weather permitting  
Sundays in Summer: 10am to 4pm approximately  
Winter: 10am to 3pm approximately

Website: [www.tmmecc.org.nz](http://www.tmmecc.org.nz)

Facebook: Memorial Park Railway Tauranga

### MEETINGS

General Members Meeting every first Tuesday 7pm.  
Committee Meeting every second Thursday at 7pm.  
Maintenance Tuesday mornings from 9am.  
Engineering discussions Tuesday evenings 7.30pm.

### COMMITTEE

President: Russell Prout 548 2881  
Vice President:  
Club Captain Bruce McKerras 577 0134  
Secretary: Jason Flannery 572 1165  
Treasurer: Owen Bennett 544 9807  
Committee: Ash Thomas, Max Donnelly,  
Joanne Knights, Bruce Harvey  
Brian Fitzpatrick.  
Boiler Committee: Peter Jones, Bruce McKerras,  
John Heald.  
Safety Committee: Chris Pattison (Chair), Peter  
Jones.  
Editor: Roy Robinson 07 5491182  
[royrobkk@gmail.com](mailto:royrobkk@gmail.com)

### CONVENERS

Workshop: John Nicol  
Track: Bruce Harvey, John Stent.  
Librarian: Chris Pattison  
Rolling Stock: Bruce Harvey  
Website: Murray de Lues

### OPERATORS 2019

22 March W Karlsson  
29 March B McKerras  
5 April N Bush  
12 April M De Lues  
19 April B Fitzpatrick  
26 April J Flannery  
3 May B Harvey  
10 May P Jones  
17 May W Karlsson  
24 May B McKerras  
31 May N Bush  
7 June M De Lues  
14 June B Fitzpatrick  
21 June J Flannery  
28 June B Harvey  
5 July P Jones

## President's Report

Work continues on our Silver Fern electric loco with rebuilds of both bogies nearing completion it could be back up and running in a few weeks. Considerable time has been invested by many but none more than Warren K. From day one he has been meticulously breaking down and reassembling often only to find another problem. With Peter D working on the redesign and Ashley T machining and now Regan O fine tuning we are hopeful that another 5 years of operation will be seen. Once this one is back on track we shall investigate the state of Kiwi Rail..

At our Feb committee meeting we had a visit from Council keeping us up to date with progress on the development of the Queen Elizabeth Centre. It seems little has changed for now so watch this space for updates.

Max D has put together a proposal for upgrading the raised track and rebuilding ride cars. We all know how daunting a project of this size can be so if you can help in any way please let Max or a committee member know of your interest, capability and ideas. It is not a project for one and will need the whole clubs support to be successful. Please get behind this project and make it happen.

Track work has recently been carried out on a problematic set of points between the siding and tunnel 2. We are hopeful that this is now going to be more reliable and so far with fingers crossed it appears to be all good. Some other track repairs were carried out after the lawn mowing contractor damaged a section.

A recent in club negotiation saw John S's 'Speedy' transfer to Ashley G. Not only has this made Pam very happy but Ashley is over the moon. The speedy required some tlc and it was found to have timing issues on one side due to movement of the crank pin. Once identified and sorted Ashley was pleased to find it ran on air very well. Now for the boiler test and a steam up, first for some time I believe. This will surely be a contender for the raised track and ground level as well.

The table was a little bare this month so it would seem those of you with projects on the go need to bring along your pride and joy (or maybe your bucket of swarf and failures) for us all to see. Don't worry we all have them.

One of my recent projects was a piling hammer, no not to scale! It was intended to be used for some landscaping and post ramming. With a monkey weighing only 100kg I had to be a little innovative but as this was to be used on my excavator I had the luxury of being able to lift it 3m high and still have 3m of drop. This has proved very useful and No I will not be building it in miniature and it won't fit on the table so you will not see it at the club.

Two car loads of our members were heading to Hamilton for their open weekend but due to illnesses and a very portly Beau this trip was cancelled at the last minute.

Looking forward to the adventure, maybe further south next time.

**Russell Prout      President**

## From the Editor

My informant who advised me that I had not included Part 2 of the Big Boy article actually put me crook and I can confirm it was in the August 2019 Club mag.

## Disclaimer :

The views and opinions expressed in articles contained in this magazine are those of the author (s) and do not necessarily reflect the policy, position or opinion of the TMMEC or its officials.

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A graphic for Home-based Educators featuring a red and white train engine on a track, surrounded by colorful flowers and leaves.

H O M E G R O W N  
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The logo for Homegrown Kids, featuring a small black silhouette of a bird perched on a branch.The logo for Morgan Steel, featuring three pieces of steel beams of different sizes and the text "MORGAN STEEL" in a large, bold, black font with a blue underline.

**Steel Fabrication & Engineering Specialists** [www.morgansteel.co.nz](http://www.morgansteel.co.nz)

**LIZ VAN WELIE** **AQUATICS**

A row of five small photographs showing children swimming in a pool, including one child underwater with a ball, one child jumping, and several children swimming in a lane.

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# Cobb Dam and Power Station by Roy Robinson

Whilst Barb and Zara were slaving away doing food for the Open Day at TMMEC I had sneaked off to the South Island.

It was Waiouru Weekend ( one of my other interests) the prior weekend so I decided to continue on down to Wellington rather than come home and go back down the following week to cross to Picton. It wasn't hard to find things to do and an afternoon at Southwards Car Museum is hardly long enough to absorb all the exhibits.

The crossing was flat on Thursday and an option to stay at Havelock to have a dinner of mussels was essential!

It was drizzling as I left Havelock and it wasn't long before I realised that I must have put the wipers on high speed not low as normal. A quick check revealed that no it was on low speed so why were the wipers sweeping so much faster. It took another 20km for me to think to check battery voltage (yea, I'm a bit slow at times!) Waho !!! 36v !!! Well, can't do much about it till I reach Nelson. I stopped off at an auto electricians and within 2 hours he had located and fitted a new alternator and at a reasonable price. I was very impressed!!!!

As arranged I collected a mate in Nelson after the repairs and it was over the range to Takaka where we had booked in at Chalet Motel. A town tour and out to Tarakohe completed the sightseeing for the day. An old pub just out of town recommended by the Chalet owner provided us with a most amazing huge meal, and yes, you got it more mussels!

Saturday dawned overcast so we packed wet weather gear and out to the Cobb Valley Road where Trustpower had a tent where we confirmed our bookings and then jumped on one of the four 25 seater busses. On the hour and a quarter trip up to the top of the ridge then down to the dam and lake our Trustpower hostess filled us in with info on the Cobb Dam and Power Station.

Perhaps now you will be wondering just what was the attraction for me to travel to the South Island to go and see a Power Station????

The Cobb Power Station is driven by Pelton Wheels not turbines as most of New Zealand's other Power Stations are. What's the difference? Well turbines are high volume low pressure and pelton wheels are low volume high pressure. A normal turbine power station has a head of 30meters (Karapiro) whereas the Cobb has a head of nearly 600m. It was started in 1935 and produced its first power in 1944 but wasn't fully completed till 1957. Much of the work had to be done by hand as the initial site for the dam was not accessible by equipment. It was the first power project on which bulldozers were used. Sometime after the first construction phase the lake was raised and 2 more pelton wheels were added to the existing 4 wheels. For the technical minded the initial construction was for 1 penstock feeding 4 pelton wheels each of 3MW.

The second phase of construction included another penstock feeding 2 wheels of 10MW each. The penstocks are 4km long and the wheels use only 7.25cusecs of water. The dam is at an altitude of 794m with the power station on the confluence of the Takaka and Cobb Rivers.

Getting back to the trip, power station staff were on hand to explain and demonstrate the dam workings and spillway equipment at the dam site. It was then back to the top of the ridge where a DoC shelter had all the info on the whole project told in dioramas. From this site was a spectacular view of the dam and lake. The bus then took us to the power station where more staff enlightened us to how the pelton wheels operated. One of the wheels was then started taking approx. 5 minutes to reach full speed. The noise is horrendous! One could only imagine what it would be like with the 6 in operation!!!

From there it was back to our vehicle. We thanked Trustpower for their hospitality and were on our way,,,,,,,,,,,,,,,,, well not quite. It was only after a lot of encouragement and luck that the vehicle started. A quick check with a multimeter found that one of the batteries was not pulling its weight so off to the garage, yea, one of those old country garages from Grandads day which had everything to get you home. OK, that fixed all the problems so some more sightseeing for the rest of the afternoon. Out to Fairwell Spit but now (I was there 40 odd years ago) access to the spit is blocked, buggar!!!! Back and take the road to Bainham. Passing through Rockville (don't blink) we noticed that the old Dairy Factory had been converted to a Museum which was "Open". It's open all the time, 24 hours a day entry by donation. What a great array of tractors farming gear etc etc. If you are passing this is a must stop, destination not a toilet stop!!!

It was to the same pub for tea again, why would you go anywhere else???Next day we travelled back over the hill to Motueka then back down through Tapawera turning at Tophouse and headed down the Wairau Valley to Blenheim. A call to Brayshaw Park unfortunately found it closed but a children's experience was being held the next day so we went back to tag-a-long with them. This is another exceptional museum collection where each "club" has its own building / site. There are many exhibit sheds from stationary engines to vintage cars and is a "must visit" if you are down that way. Allow a full day, the local Model Engineering Club also resides within the complex. There is a small gauge track, 2 foot I believe which runs from the town centre but I have no idea how often it runs.

The next day it was a quiet crossing back to the Mainland and home.

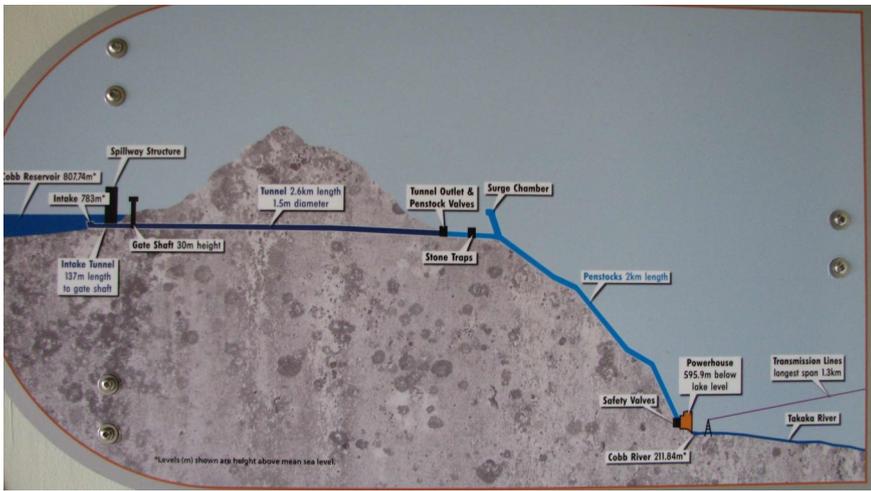
### **Recommended reading**

The Cobb by AK Blair

Gives the complete history of the Cobb Power project.

The Exiles of Asbestos Cottage by Jim Henderson

Story of a couple who lived in seclusion not far from the Cobb Power Station



Cross section of the water flow.  
 Dam, penstocks and spillway.  
 Actual pelton wheel.  
 Looking through the generator room





Cobb Power Station with shots of the generators and pelton wheel box. Gauge shows the head of water in feet. (Note the penstock pipe coming down the ridge.)



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## Hudswell Clarke locomotive D597

This locomotive (D597) is one of 12 identical ones built for the NZ Government Public Works Department (PWD) late in 1936 by Hudswell Clarke Ltd of Leeds, England. The price of each locomotive was £660. Nine were shipped to Wellington on the freighter "Port Hobart" from Liverpool arriving in April 1937. All were built with a Paxman Ricardo 40 hp 4-cylinder diesel engine, and were allocated to various PWD jobs throughout New Zealand. D597's career is as follows:

1938 - Plimmerton to Paekakariki railway duplication

1939 - Paeroa-Waihou River stopbank works

1941 - Pokeno-Maramarua coal mine development

1943 - PWD Depot, Hamilton

1950 - Mangakino. Various Waikato hydro schemes

1952 - MOW Otahuhu main depot

1957 - in August sold to the Army for £90. It becomes NZ 29647 but was in such a poor condition that it was taken to Trentham for an overhaul and the replacement of two collapsed bearings.

1957 - in November the locomotive was sent to Linton to become the "Linton Looper".



1984 - still in service at Linton

1986 - the locomotive was retired and moved to Waiouru where it was eventually given to the Army Museum

1986-1995 - 'disappeared and believed to have been scrapped'. It was in fact being stored in an old quonset hut at the back of Waiouru camp.

1997 - Long term loan agreement between NAM and Pahiatua Railcar Society signed, and locomotive moved by road to Pahiatua for storage

1999 - moved to the PRS depot and minor overhaul completed. It was to be restored and returned to service in its original Army livery.



A troop train on the Waiouru private siding in 1962 with H-C loco on left.

**Thanks to Grant Hays Curator Vehicles, Artillery and Technology National Army Museum for the article.**

# Oberursel

**By Dave Martin    Thanks to the Waikato Vintage Tractor and Machinery Club for the use of this article**

One hundred years ago an order was placed with Motorenfabrik Oberusel for the supply of a two foot gauge 12BHP Universal Oil locomotive and 10 hopper wagons for delivery to the Thames Valley Drainage Board. The locomotive and wagons were delayed on their way from Germany by a shipping strike and as a result did not reach New Zealand and the Hauraki Plains till 1913. Due to the lateness of its arrival, instead of carrying spoil for new roads across the swamps of the Plains Drainage Scheme (1), it was used to cart road metal on the Pipiroa to Waitakaruru road.

For many years this locomotive was thought to be a Deutz and was part of war reparations from Germany Samoa, and sent to New Zealand in 1917. Further research has shown that this loco came to New Zealand in 1913 and spent all its life in this country.

From 1913 to 1940 the loco history is rather vague but it was recorded as working on the Kopuarahi to Oronga road on 13<sup>th</sup> January 1915 and the photo was taken on the Ngatea straight near the Hopai turn off in 1921/22.

In 1940 the loco and hoppers were purchased by Mr W.S Miller of NZ Mercury Mines at Puhupuhi in Northland. Here the loco and hoppers were converted from 2ft gauge to 3ft 6ins, the New Zealand standard gauge and also the motor was converted to run on petrol as well. It was used to carry spoil and overburden from the mine to a tip site about a kilometre from the mine (3). The loco operated at the mine until the mine closed in 1945 as the demand for mercury reduced. The loco and hoppers then stood derelict for many years at the mine site. It was photographed by Forbes Neil from MOTAT in the mid 60's.

Mr Miller presented the loco and two hoppers to MOTAT in 1968 after representations from Forbes Neil and H.J. Hansen who have referred to the mine operation in their book. "Tracks in the North". (4)

In the 1970's a team of volunteers led by Ian Jenner from the Bush Tramway Club cleaned up the loco and built a new body. They then set about getting the motor running and when this loco moved and got warm, many visitors to MOTAT thought it was a small steam engine as the so called funnel is actually a part of the cooling system and as the water heated up so small drifts of steam used to be seen. People were even more confused as the engine running at its usual 60rpm is very noisy with the exhaust under the loco.

Problems arose with the wheels on the loco going "out of Gauge" and often derailing. Also the impulse generator used to create the spark for the spark plug was stolen from the MOTAT 1 site. From 1984 to 2005 the loco stood unused and slowly deteriorating. In 2005 with the help of ratings from the Naval Base at Devonport the rusting body was removed and the motor lifted off the frames and taken into the Road Transport Workshop to be overhauled and put back into

operating condition. Many small parts had to be made as they had gone missing or were worn out. The team of expert volunteers rebuilt the engine and put it on a temporary base then in 2006 the motor was started after so many years and the workshop was filled with the sound of a very noisy single cylinder motor running at its 60rpm. The extra noise was caused by the lack of a complete exhaust system as the silencer was part of the underframe.

An unusual system of lubrication to get oil to various parts of the motor was used. It involved a rotating disc on the crankshaft that had a groove in it that fed the big end; the faster the engine ran the more oil was thrown onto the bearings. The engine governor system was linked to the inlet valve and as the motor sped up so the valve partially closed, reducing the flow of air/petrol mix to the cylinder. The choke mechanism on the carburettor restricted the airflow before it was mixed with the petrol rather than restricting the mixture. The float in the carburettor was also unusual in the way it restricted the flow of petrol into the carburettor. The picture shows the team involved in this restoration.

Meanwhile the chassis and transmission was taken to the Rail section where it was water blasted and then stripped to its basic components so that some chassis members could be replaced and riveted back in place. It was found that the coupling blocks had unusual conical involute springs in them that needed replacement. The wheels needed to be removed so that the gauge could be correctly set and wheels profiled.

The clutch mechanism is operated by a screw thread handle that allowed variable pressure to be applied to the clutch plates. This system is also used to allow the gears to be changed. The loco was built by Motorenfabrik Oberursel of Germany and this company was taken over by Gasmotorenfabrik Deutz in 1921. Oberursel were more famous for radial engines used in aircraft

including the Red Baron's. In 1990 Deutz became part of BMW Rolls Royce.

From overseas correspondence it would seem that the MOTAT loco is one of only three surviving Oberursel locomotives in the world and is the only one with an operating original engine (5). Not bad for an oft neglected centenarian.



