

Wheels & Floats

June 2020



Tauranga Model Marine and Engineering Club Inc.

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.tmmec.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

CONVENERS

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

OPERATORS 2020

21 June J Flannery
28 June B Harvey
5 July P Jones
12 July W Karlsson
19 July B McKerras
26 July N Bush
2 August M deLues
9 August B Fitzpatrick
16 August J Flannery
23 August B Harvey
30 August P Jones
6 September W Karlsson
13 September B McKerras
20 September N Bush

Presidents report June 2020

The challenges of lockdown and social distancing seem to be a distant memory now but the uncertain future for many is only just becoming a reality. For those who have this uncertainty in their homes I wish you all the very best for your future direction. If like me the lockdown was actually quite nice and the quiet achievements during that time at least bring you some happiness and sense of well being then please don't lose sight of the progress you can make each and every day.

With the likelihood of many tracks opening again soon we too shall start a new system of managing our customers. This will start with passengers having free rides whilst we get the infrastructure in place. The first of our changes will be non contact payments (most of you will be familiar with this from recent times). The next will be some fencing from the ticket office to the boarding gate. Only those who have paid can enter this area.

Along with the fencing some gates will be installed outside the club room doors to give our team some isolation from all other traffic. The next will be abandonment of the ticket. We will honour all outstanding concession cards.

Jason has circulated some of these details to all members with mostly positive results so we just need to get on with it.

On 20 June 2020 we are scheduled to have this years AGM and this year it will be in the upstairs room at the CITZ Club as previously announced by Jason.

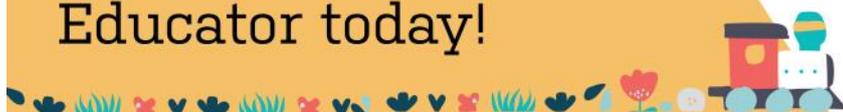
Please attend the AGM if you can as election of your president and officers is something you all need to be comfortable with.

With all that said I wish you all a very good year and thank you for the support you have given to me and the committee throughout the year.

Stay safe.

Russell Prout President.

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Ashley Grant supplied the following article on his Grandfather :

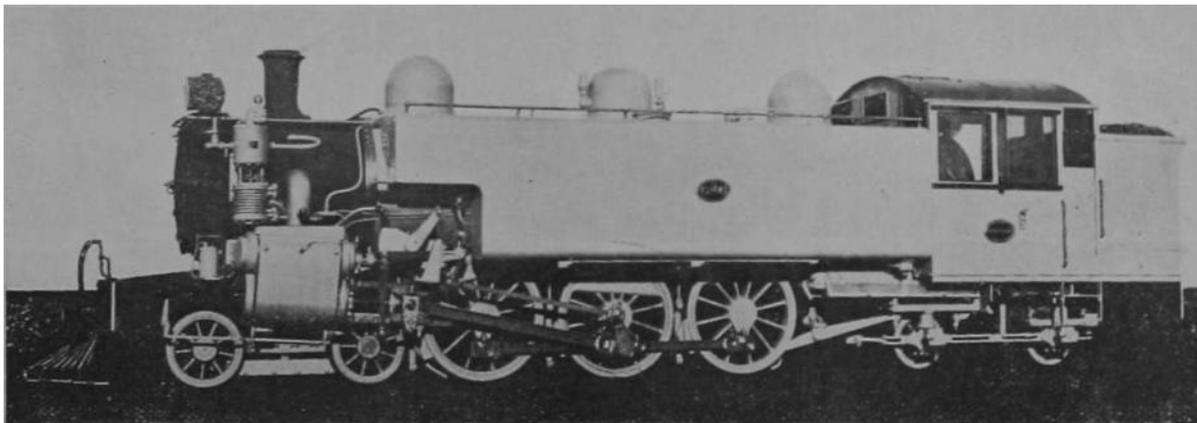
Frank L Champion (1902 – 1990), Locomotive Driver.

Frank Lesley Champion (my grandfather), born 1902, emigrated from England to New Zealand in 1905 when he was just 3 years old. Much later, married and living in New Plymouth in the late 1920's, he joined New Zealand Railways working as a cleaner. He then became a fireman and worked his way up to eventually becoming a driver.

During his time as a fireman he decided to take on the task of building a 3.5inch live steam model of the WS locomotive, a 4-6-4. The WS was nearly identical to the WAB with the difference being the WS had saddle water tanks to give more weight over the driving wheels. Both engines however carried water on their backs rather than towing a tender.

This type of design where all the weight was over the driving wheels, enabled a quicker getaway on account of the engine's wheels being less likely to skid (an aspect of design my grandfather no doubt would have much appreciated).

The WS and WAB locomotives were used on suburban runs but came into their own when used on the Raurimu Spiral. They were first made in New Zealand around 1915, and served a useful life for many decades.



New Zealand Railways 4-6-4 Locomotive, Ws. Type. Used on Suburban runs Weight in working trim, 71 tons 10 cwt. Tractive force at 80% of boiler pressure, 22,000lbs. Tank capacity, 1,700 gals. Fuel space, 120 cub. feet. Length over buffers, 44ft. 5ins. Coupled Wheels, 4ft. 6in. diameter.

So Frank commenced building his own WS tank locomotive. Living in a small New Plymouth Railways cottage meant he had to set up his workshop in a spare room. He didn't have a separate workshop as such. Frank's timing was also against him – he worked on the model during the depression years, and despite the work being tedious and precise, he only used hand tools for the locomotive's construction.

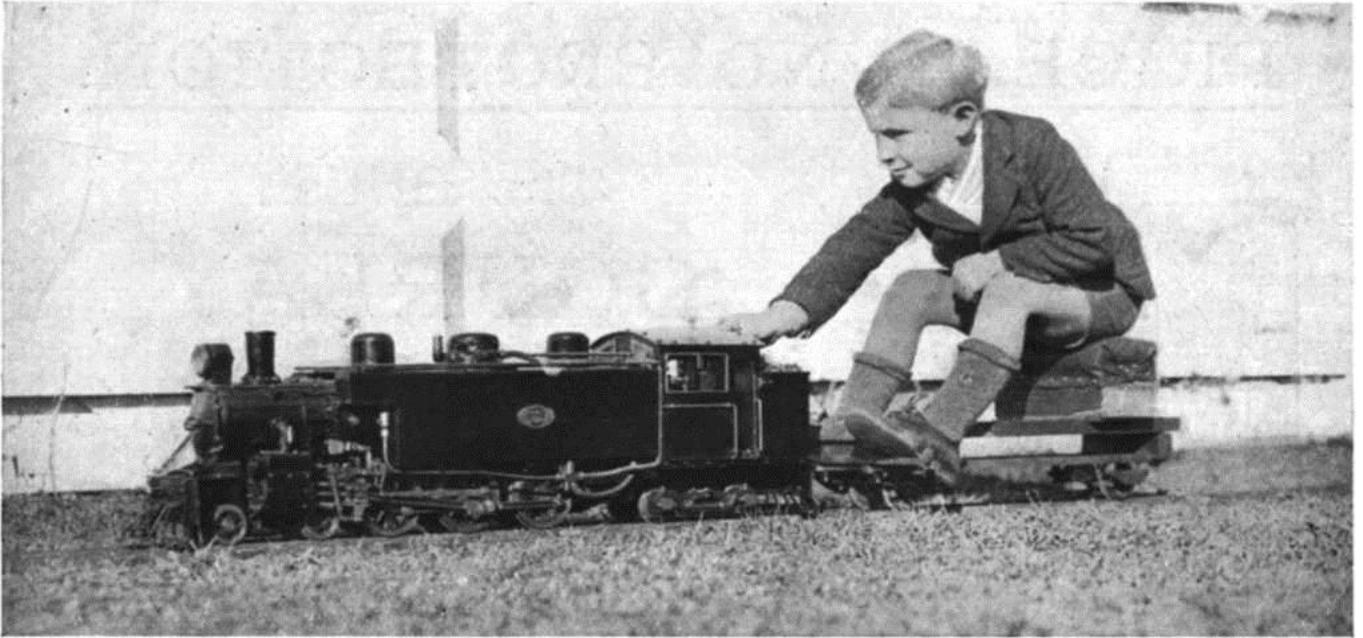
In a newspaper article in 1984 he commented, "No power tools were used whatsoever. My equipment consisted of a manually powered three-inch treadle screw cutting lathe, a Yankee bench drill press, a Millers Falls hand drill and one pint-sized blow lamp, as well as various other small hand tools".

"I made all my own patterns and had the cylinders and wheels cast by a local foundry, Cambrian Engineering in New Plymouth. Here I also found the materials I needed, like steel, brass and bronze".

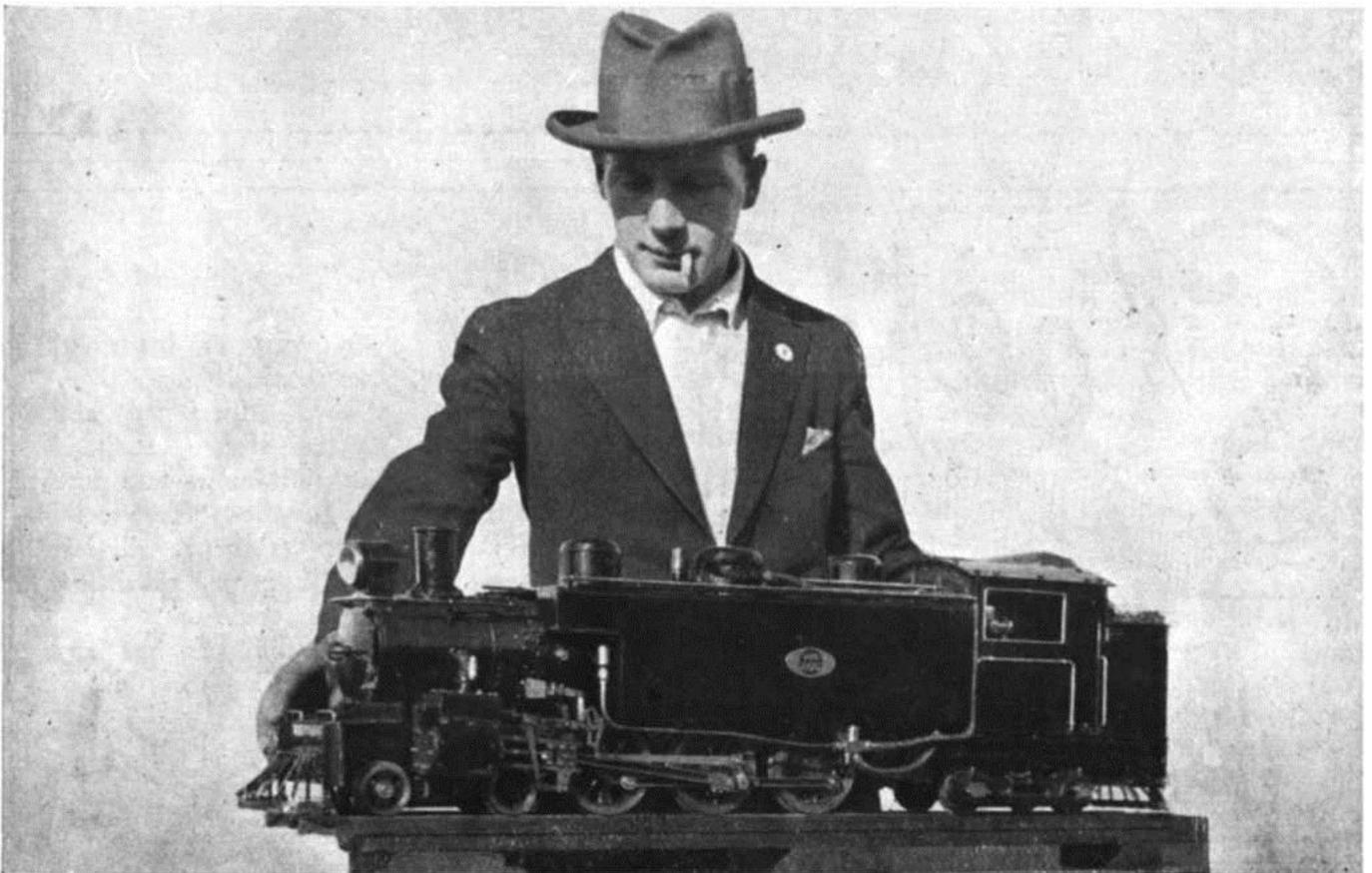
Frank's model WS created much interest as it was made before the formation of the New Plymouth Model Engineering Society and was exhibited in the Winter Show and various shop windows.

In 1929 he was featured with his locomotive in the October edition of the New Zealand Railways Magazine, volume 4, issue 6

A Fine Model Locomotive



The height of a boy's ambition.



Mr. F. L. Champion and his model "Ws" locomotive.

The model locomotive illustrated above was built by Mr. F. L. Champion, railway fireman, New Plymouth, in a workshop attached to his home. When in operation it is extremely interesting to watch, the regular beat of the exhaust and the graceful motion of the perfectly functioning Walschaert valve gear being especially interesting. It is a perfect replica in miniature of the "Ws" type of locomotive in service on our railways, and runs on a three-inch steel track, on ground level, drawing passenger trolleys sufficiently strong to bear the weight of an average person. With the exception of the castings, which were made at a local foundry, the model is entirely Mr. Champion's own handiwork, and he is to be congratulated on his achievement.

It was on the 17 December 1934, working as a fireman on a goods special train heading towards New Plymouth, Frank was involved in a railway accident where two trains collided head-on. Frank told us about this drama in his later years and the shock of witnessing another locomotive steaming towards them. Apparently he hesitated in following the engine driver who bailed out first, but then realising the inevitable, decided to jump for his life. This from the STRATFORD EVENING POST, VOLUME III, ISSUE 230, 18 DECEMBER 1934:

TRAINS COLLIDE

SMASH ON EAST LINE

HEAD-ON COLLISION

Further Details of Crash at Pohokura

TWO FIREMEN INJURED

ENGINES DAMAGED

Guard on Up-train Was Left Behind

(By our Special Reporter)

Two trains collided head-on yesterday morning on the Stratford-Main Trunk line, about 30 miles from Stratford. A large amount of damage was done to rolling stock but fortunately no one was killed. The firemen of the trains, however (as reported in The Post last night), Fireman F. Quayle (Stratford) and Fireman F. L. Campion (New Plymouth) were injured. Quayle sustained a broken shoulder and an internal injury to the lung and Campion suffered a broken ankle. Clearing gangs were early on the job but their operations were held up

The article continues:

".....pending the arrival of a breakdown outfit, including a heavy crane which had to be bought from Wanganui. These did not arrive until late in the afternoon but rapid progress was made with the work and the line was clear at 10 o'clock last night, allowing the New Plymouth – Auckland express to pass through. There were no passengers on the train from Stratford and the special was a goods only.

“The Department will hold an inquiry into the smash, and until that has been held no announcement can be made into the cause. The only facts available are that the guard on the train from Stratford was left behind at the Pohokura station and that the driver was apparently under a misapprehension as to the signal given to him. It is definitely established that there was no defect in the control system.”

My grandfather, all those years later, added more to the details of the accident, one of which was their luck in not colliding in the tunnel. He often extolled the virtues of good quality coal and, (surprisingly to both himself and the driver at the time), it was a load of good quality anthracite coal that they had just taken on board that morning that got them further along the track and out through the tunnel before the collision occurred. He said that if they had taken on their load of the usual lower grade lignite coal then they wouldn't have had sufficient steam to get them the same distance. They would have collided in the tunnel. (He told me as a kid how to tell the difference between good and not-so-good quality coal. The shinier the coal, the better the quality due to its higher carbon content). The other bit of luck they had was in the fact that both locomotives remained on the track after colliding, saving them from possibly being crushed had they overturned. The news article continued:

“The collision occurred on a stretch of track about 250 yards long between two sharp bends a short distance on the Stratford side of the No. 3 tunnel, three miles west of Whangamomona. The trains involved were a mixed goods train leaving Stratford at 5.36 a.m. and a special goods train running from Taumaranui. They collided at about 7.45 a.m. directly opposite a patrol telephone box. The Stratford train comprised an engine, van, car and five trucks, and of the latter, four were thrown off the rails and some smashed to matchwood.

There were 20 trucks on the special and of these seven were thrown off the tracks. They were piled up in indescribable confusion directly behind the locomotive, the tender of which was torn from the track. The cow-catchers and heavy staging in front of the engines were crushed and twisted and the trains came to a halt with the smoke-boxes of the engines jammed together. The BB engine on the special – a little lighter than the X model on the ordinary train – suffered the greatest damage, the most serious part of which was a broken kingpin. Behind, flung up on a bank 15 feet high, were the seven wrecked trucks, their loads of coal and timber and cement thrown in wild disorder over the track and the banks on either side.

Driver Leaps from Cab

The drivers were: D.W.Lawrence (Stratford train) and C.R.Peddie (the special). Just before the smash driver Peddie leapt from the cab of his engine and landed safely on a bank, but the fireman (Campion) was unable to escape (injury) and he suffered the same fate as the fireman on the Stratford train. He was thrown heavily and suffered a broken ankle. Fortunately Mr F.Papprill, a railway workman was on the train, and with the materials contained in an emergency outfit, rendered first aid. Nurse D.M.Workman was then brought through the tunnel on a jigger from Whangamomona and she made the men comfortable for the same journey by the same convenience to Pohokura, where the Stratford ambulance picked them up and conveyed them to hospital.

Guards Anxious Moments

The guards on the trains were T.Henderson (Stratford train) and L.Bate (special). Neither was injured. It is understood that Guard Henderson was still communicating with Whangamomona by telephone when the Stratford train pulled out of the Pohokura station, the driver having mistaken the guard's signal. Mr Henderson rushed out from the station building, when he found the special

had already left Whangamomona, but his train was already steaming up the line. His immediate fears were for the safety of the trains and their occupants but he powerless to do anything, as there is no station between Whangamomona and Pohokura. He was therefore forced to wait until a phone communication was received from the patrol box giving the news of the crash he had dreaded.

Problem of Clearing

The problem of clearing the track was a difficult one. It was expected that the mixed locomotive could be hauled back to Pohokura and placed on the siding, but owing to the broken kingpin on the special and the more serious damage generally, it was stated it would have to be tipped from the track and disassembled for removal. These conjectures have since proved correct. A train from Wangamomona assisted in clearing a heavy truck from the line on the east side but some of the others were so badly damaged that they had to be broken up on the track for removal. This work was carried on while the arrival of the crane was awaited."

Frank's other near misses on the railway

There were two other stories my grandfather told me.

Learning to drive a Locomotive.

In his early days as a fireman there came a morning when his particular locomotive was being fired ready for an early start. They were inside one of the large engine sheds and he was busy stoking the firebox when his driver turned to him and said "Right, Frank, you can bring her out this morning."

The driver then hopped down and left Grandad to it. He was a bit nervous, having not done the driving on his own before. But he continued and watched the steam pressure slowly rise. (It must have been like today, getting into the driver's seat of a huge MAC truck for the first time after having only ever being a passenger). He was concentrating on remembering everything he had to do to get this giant piece of machinery moving. However everything seemed to be in order, and with the steam finally at the right pressure, he opened the regulator.

He said "There was this god-almighty WHOOSH..... WHOOSH.....and then.....CRAAASH."

He had remembered everything but.....forgotten to open the engine shed's doors.

He said that the driver was not too happy when he raced around the side of the shed to see his locomotive enshrouded with the huge shed doors.

A Dash for Home

On another occasion Frank and a colleague were to take a goods train from New Plymouth to Stratford late one afternoon, unhitch and return empty. The weather had been appalling and had worsened during the day, so that by the time they reached Stratford there was widespread flooding. He said the myriad of river bridges and culverts that they had crossed that afternoon showed how bad the flooding was and by the time they were ready to make the return trip it was dark. It was also still teeming down.

He said the two of them had a long discussion as to whether to take the locomotive back to New Plymouth or stay over in Stratford until the morning. They decided to make a run for it back to New Plymouth.

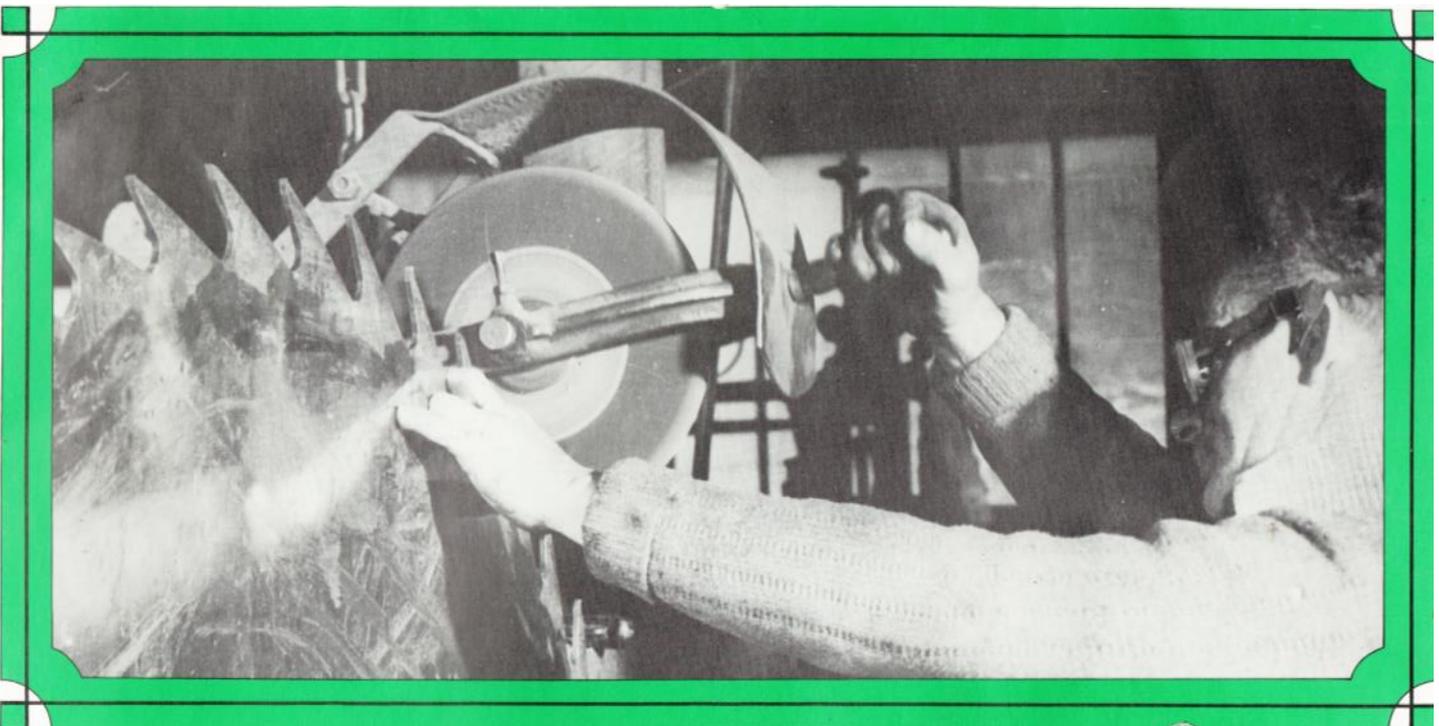
Visibility was practically down to zero. But they knew nobody else would be on the track, and having no load, shouldn't take too long to get back home. They set off and were in a bit of a hurry.

He said everything was fine apart from the atrocious weather, when all of a sudden they felt the whole engine drop like a stone. But in that split second it suddenly rose again and, miraculously, remained on the track. Apparently one of the culverts had washed out leaving the track more-or-less suspended with virtually no support. But the track had remained intact enough for their locomotive and its momentum to safely get over the sagged portion. Somewhat shocked but relieved they continued on nervously to New Plymouth and arrived without further incident. There certainly would have been a disaster had they had a full consist.

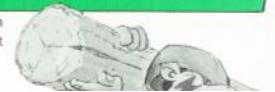
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Another photo from the Kanapine Timber and Hardware Calendar 1985

Note no ear muffs!!!!!!!!!!!!!!!!!!!!!!



Seen here Mr Jim O'Brien is hand gulleting a circular saw blade. These blades would last up to 4-5 years depending on their usage. This style of blade was later abandoned for the bandsaw blade which is thinner thus creating less sawdust and a greater yield of timber.



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Tug-Moorcock

My story of a very Long project by Russell Prout

As an apprentice and working for McKecknie Metal Products in the New Plymouth region of Bell Block I had the good fortune to be able to purchase copper, brass and aluminium at scrap prices, which at the time was still quite high given apprentice wages. I did not let the cost deter me from sifting through and picking some serious pieces (some of which I still have today).

It was the first year of my apprenticeship 1969 and I met an elderly gentleman who was an enthusiastic model engineer. He had built several models mostly Stuart but also used the model engi-



neer magazine for some of his machine builds. His magazine collection was vast and after flicking through some of them I became very interested in the Thames Tug boat called the Moorcock.

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I know, not the most appropriate name but the look of this vessel to me was great. After gathering all the associated mags together I then set about lofting the plans. As you can imagine no computers or calculators everything had to be done on a drawing board (which fortunately I had bought an old one for use at home) and using a slide rule (some of you may need to Google this) for my calcs. Picking a scale that made it practical to replicate many of the pieces was easy 1/2" to 1ft or 1:24

That meant my model was 56" long, 14" beam and 10" draft. Not only was this longer than my drawing board was wide, when it came to building the hull (soldered together on the dining room table) it was also quite heavy.

Lofting the plans meant using calipers to measure the magazine image details and scale them up to suit. The largest image was a Long section that almost filled two pages (approx 10" Long) of the magazine. The hull lines were kept secret by Gamecock Tugs for some reason but the lines of the sister ship Dahulia were published in the articles so these were used for my boat.

Actually the hull was not so heavy but there was 17kg of lead to ballast it for the correct sailing depth. The vessel eventually weighed in at 27kg!

The materials of choice were copper brass and stainless steel. The keel and frames were formed in brass, so too was the stern tube which I had to bore from each end due to it's length. Once the hull shape was secure thin strips of bronze, approx 0.25mm thick and around 30mm wide, were soft soldered onto the frames one piece on each side at a time. It took me almost 6 months to form the hull.

The superstructure also made from brass sheet was made to be removable so good access to the power plant could be obtained. This through up another challenge as I thought it would be good to use the tow hook to really tow something. This tow hook is attached to the rear of the superstructure which if not secured would clearly pull off and given that it too was heavy would sink like a brick! The solution I adopted was to fit two hooks under the front of the superstructure that fit under the deck stringer and the two engine vents were screwed down to the deck. I have not tried to lift the vessel from the tow hook but have successfully towed the 12 seat wooden row boats around New Plymouth's Pukekura Park main lake many times and faster than they could be rowed.

Nothing was available in 1:24 scale to purchase so everything had to be made including the propeller. At 5-1/2" diameter it was similar to a small power boat but 4-bladed. I tried unsuccessfully to cast this in a bronze alloy and eventually gave up, opting for fabrication instead. I used one of my cast propellers for a while until the fabricated one was finished and this enabled me to have a play. By now more than a year had passed but having a hull that would float a hook that would tow and a rudder and propeller of sorts in place I needed a power plant. For this I turned to Stuart

and after several weeks received a set of double 10 castings in the post, oops no reversing gear, that was a slight oversight. Whilst I set about machining what I had I ordered the other bits needed for the Stevenson's reversing gear a boiler feed pump and baseplate upon which all would mount.

By now another 6-8 months has passed and having mounted the motor and direct coupled this to the prop shaft I had to borrow a Stuart boiler to give it a trial run....no remote control at this time, just point and shoot!

It soon become apparent that the very large and unbalanced rudder 6" tall x 3-1/2" wide under full thrust was difficult to move. Several attempts to make geared drives using electric motors and screwed brass rod worked but once the radio gear was fitted I found a lot of radio interference and alternatives were sought. Quite some time later I was able to get 15kg servos which had separate battery supply and these made a huge difference.

Another couple of years passed by, changed jobs and companies and the opportunity to make the new propeller came about. The propeller (fabricated version) was made whilst I was sailing to Singapore on a diving support vessel. Being client rep has some privileges, one of which was to work closely with vessel owners and representatives and this gave me access to the chief engineer and some of his materials. The largest piece of bronze he had on board was 3" diameter so I set about cutting 4 thin and tapered pieces to make each of the blades. These were first shaped to match, thinned and feathered then heated and twisted to achieve the pitch. The centre boss machined from a smaller diameter had four slots cut in to receive the blades. With no milling machine on board I used the old deck lathe with a tool steel fly cutter in a boring bar mounted in the lathe chuck and the boss mounted in a jig on the crossslide. Passing the boss over the fly cutter made a nice groove and using a square to align the boss for the next slot gave me the four positions. Next the blades were brazed into the boss and the finishing was done by hand using files, sand paper and newspaper. When I showed the finished propeller to the Chief Eng, he commented "but I only gave you 3" bar stock, how did you make it this big". Once the vessel had reached Singapore I had some time in the dockyard before returning home to try my propeller. Much to my disappointment it was 3mm too large and I had to skim the outside edge off to suit. Not a biggy in the grand scheme.

As with most projects we tend to build in things that are not really necessary but look good or right at the time. The lifeboat and davit were an example of this where I wanted to be able to launch the lifeboat, wasn't sure about disconnecting it or driving it at the time.

The next challenge was the anchor winch and anchors. The winch is electric and uses a servo motor with some gearing (again from scrap) to get the desired speed. The Gypsy's on each side are engaged by internal dogs from a single lever (also to be remote controlled at some point).

point). The winch was capable of lifting a 12kg weight with ease using only a 1.5v battery. This became problematic if my anchor was caught as it broke the chain. A bigger chain was eventually found and new Gypsy's made to suit.

The anchors took some time to finalise (by this time around 10 years has elapsed). I started with fabricated brass anchors but was not happy with the shape so set about making them out of pewter. A wax shape of one fluke was made (a soldering iron was very useful in the finish and shaping so was a scalpel) a plaster of Paris mould of the fluke enabled me to make two matching flukes. These were melted together again using the soldering iron. Once I was happy with this shape I made another PoP mould and used cuttlefish as a core for the blind hole into which the shank was to fit. I cast the shank the same way and after breaking my 1.5mm drill off twice trying to drill through for the pivot pin I eventually completed my anchors.

The fire monitor mounted atop the flying bridge was connected to the bilge pump and conveniently directed to port so as to squirt spectators on the lake edge. A good 6-8m water jet was obtained.

I got married, had children and travelled around for quite some time and eventually after settling in the Bay of Plenty I have unpacked the old girl but after 51 years I still have work to do to finish her off. Do I paint over the copper?



The only colour photo I have seen.



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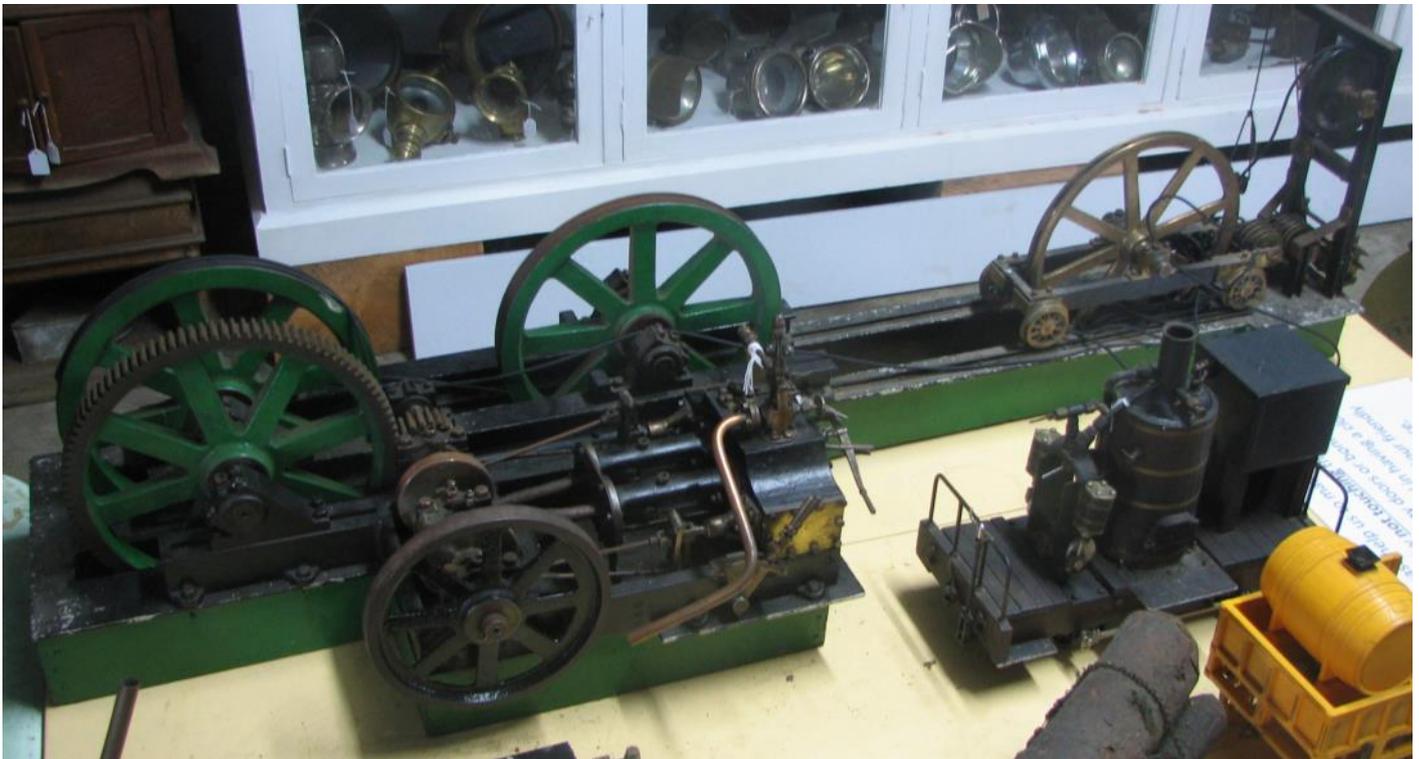
From the Editor's desk :

Well, how do you like the new cover??????????????????

The plan is to have a different picture each month. This months pic come from Peter Davies. Thanks Peter. Soooooo, if you have a good pic you think would look good on the Club Mag Cover send it to me (JPEG please) and I will pick the best one each month.

OK received some excellent articles whilst you were on lockdown. However the wave of articles has seemed to have fizzled out. Don't stop now you know how to do it, keep it coming,,

PLEASE.



Model of the original winching gear Kilbirnie Cable Car Wellington. Does anyone know where this model is?????

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