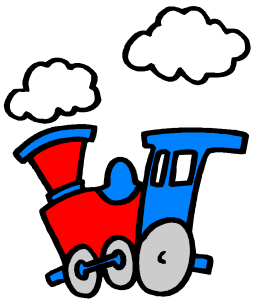
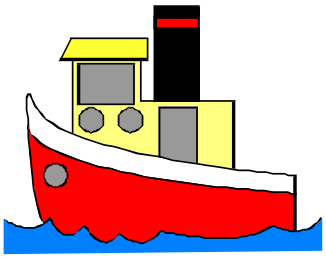


Wheels and Floats



Newsletter May 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.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 royrobkk@gmail.com	07 5491182

CONVENERS

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

OPERATORS 2020

TBA

President's Report

An interesting and challenging past month with no club activity whatsoever. A first in the history of the club but hopefully we will have activity again soon.

The scheduled AGM has been postponed until we can once again congregate within the club rooms. Thanks to Jason you have been kept up to date and will continue to be advised of all relevant club activities as they can take place.

I am Super impressed with the progress everyone has made on their projects and even more impressed by the bulletins you have sent through, hopefully all will eventually be published in the newsletter.

Please remember to bring your projects in for club interest once we resume our monthly assemblies,

there is nothing like getting up close and personal with these exceptional projects.

The year that was started with a party (40th) and finished in isolation, wow we could not have predicted that.

It is now time to get your nominations in for the next years committee and these can be forwarded to Jason.

Until we meet again, enjoy what you can of the current situation, celebrate your achievements and on behalf of the committee, I thank you all for your support and encouragement throughout the past year.

Take care and stay safe.

Russell Prout President

Katikati Rail Station (Perhaps Peter Jones will put a date on this?)

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.

My 3” Atkinson Waggon

Chris Pattison, April 2020

INTRODUCTION:

I bought my Myford Super 7 sometime in the late 70’s. From the atmosphere in that house, I suspected that the owner was going through a divorce. Anyway, I put it in the back of my Mazda 323 and took it back to my Johannesburg flat. With the help of friends, we carried it upstairs and put it in the spare room.

Some time later, after we bought a house, I acquired a table top milling machine with a universal head. Luckily I had salvaged a steel stand from the local dump and the mill fitted neatly on top of the stand. Even luckier, when we moved overseas, I discovered that I could insert and secure the mill inside the stand, so protecting it from the damaging attention of movers who are unfamiliar with dealing with machinery.

My first sojourn into model engineering was to start on a “Victoria” kit. But this never got completed. I still have the bits in a box to be finished. Unfortunately, other things got in the way, like breaking a leg, getting married and all that goes with those things.

We bought, and moved into a house, later into another bigger one, and added to the family. Later on, I heard of an unfinished 3” Burrell traction engine for sale, and I ended up buying the plans and parts, which included the start of a boiler. I started to make patterns for some parts and having them cast, as well as other parts, such as laser cut wheel spokes.

MOVING:

We then decided to emigrate to NZ in 1995, and all my workshop got packed up and moved over here. From then on, we had a sequence of moves – from an Auckland rental to our own house, then to Sydney and back within six months, and to another rental until we bought again. Unfortunately, this house had a garage with a wooden floor which did not guarantee lathe accuracy. I then got a job in Brisbane, so we moved again and after four years back to Auckland.

It will be appreciated that with all this moving, there was little opportunity to settle down and do some real engineering work. Besides, living on the North Shore, it was difficult to become associated with the closest model engineering club which was in Manukau.

It was when we built a house in Papamoa, that I could then plan a decent workshop in the double garage, which was done. We moved here in 2017.

GETTING DOWN TO BUSINESS

Whilst setting up my workshop here in Tauranga, I visited the TMMEC, decided to join, and was kindly accepted.

To get moving on the Burrell, I had some aluminium rims cast locally, which I machined up on the club lathe. Sometime later, on a club night, I brought around the partly made boiler for inspection by the club boiler committee. Upon inspecting it, there was a lot of leery looks and tut-tutting by the committee. I was kindly informed that, clearly, this object had not been built to suitable standards. The conclusion was that I would have to disassemble the already brazed boiler, or start from scratch and build the boiler again.

I came to the realisation that I needed to rethink the whole concept of what to build.

Being of an independent frame of mind (some may phrase it differently), I really did not wish to have to be tied to a track system, so a rail loco was out. Besides, as I have always had a fascination for road steam, I really wanted something to go on the road. Bearing in mind that a traction engine has the boiler at its heart, and with everything else hanging off the boiler. If I wished to continue with a traction engine, I would have to start from scratch with a new boiler. This would be both an expensive and a time-consuming exercise. Was there another option?

I briefly looked at a kit, or a completed engine, but that was not the answer. Being trained in engineering, I wished to put this knowledge to good use. Besides, I enjoy working with my hands and solving practical problems. I really wanted a project that I could get my teeth into and proud to complete, but within a reasonable time.

Back to square one – I considered what were the parameters of a suitable project? Firstly, it needed to be big enough to sit on and drive. Secondly, the build time should not be too long. And

thirdly, if it were made up of discrete components, all the better. This meant that I could build up sub-assemblies, to later be assembled and make up the completed project.

Clearly, a traction engine was pushing the envelope for these conditions. However, on reflection, an undertype waggon would fit the bill. I spent some time exploring this option, and the answer presented itself as the 3” Atkinson Waggon. It so happened that building this waggon had been serialised in the “Engineering in Miniature” magazine back in 1982 over four volumes. To my pleasant surprise, I had all of these issues stashed away. So, I got down to a lot of reading and research, and concluded that this project was clearly right up my street, perfect for the job.

AJ Reeves in the UK provide castings and plans for this, so I got on to their website, and looked through the long list of components that they offered. Considering the shipping distance from the UK, I decided to bite the bullet and take them up on an offer of a complete set of castings at a discounted, but not small, lump sum. I added in a few extra items that I would be needing, such as piston rings and bevel gears, and placed my order. Not a cheap exercise, but I reasoned that getting components piecemeal from UK over an extended period would pose more problems than I wanted to deal with.

So, the order was made up. Some items were on back order as they still needed to make some castings. This proved fortuitous, as, when I did an inventory of what was initially delivered, it did not marry up with their delivery note, and the shortfall could be made up in the later parcel, still to arrive. Of course, the usual customs process had to be done (and paid for).

Meantime, I proceeded with parts that I could make and source locally. The key here was to build the chassis, or at least get as far as I could, as one end beam was on the water. I had chassis channel bent from sheetmetal, and other raw sheetmetal for the water tank, etc., which got cut and bent to shape.

Since the castings arrived, I have been progressively converting amorphous chunks of metal into more functional and recognisable bits and pieces and then fitting them together where possible. Some of these castings had no resemblance to the final object they were meant to be. Some had to be identified by a process of elimination. Pity that Reeves did not identify the parts individually, but merely included a bunch of stickers in each box. Definitely Sherlock Holmes work.

Since then, I have built the chassis and springs and various components as illustrated.

A major problem I have found has been the shortage of suitable materials here in Tauranga. Whenever I have needed to go up to Auckland, I have made a side trip to various scrap metal dealers to obtain suitable chunks of brass and other bits and pieces. My deepest thanks also go to Ash Thomas for helping me out with obtaining suitable chunks of metal that would have been otherwise almost impossible to source locally.

I have decided to build this waggon on a Metric basis. Although I was brought up with Imperial measure, once I changed to Metric, I find it a lot easier to work with. Decimals are easier to work with and less prone to error than Imperial fractions. All the threads have been changed to Metric, and I am using cap screws where possible. I realise that the model engineering purists may view this with dismay, but our world is rapidly changing. If these machines were being built today, not only would the builders be making use of computers, laser cutting, carbide tooling, but also modern high quality steel fasteners. This project is meant to be fired up and put to use, not a showpiece, although I do want to make it look as nice as possible.

I have also had the expense of getting necessary bits of tooling to enable me to do a proper job, much to the raised eyebrows of my wife when the courier arrives at the door. But I expect this is quite normal for other modellers.

I have also been fortunate to have been in contact with a builder of this waggon in the UK, who passed on to me various improvements on this design, such as the need for Ackermann steering and other internal details.

The Covid-19 lockdown has been quite a boost to my available time to make components, spending about 6-8 hours busy in the workshop. Certainly, my electricity bill has reflected the extra work being done.

I am now looking forward to getting access to the club lathe after the lockdown, as I really need to machine my wheels. My Myford is just not big enough to deal with them. The engine casting is going to be another major hurdle. But then, why bother making something if there were no challenges in it?

Once a lot of the smaller jobs have been completed, as can be seen. I still face the two really big and complex jobs – building the boiler (not as complex as most loco boilers), and the engine.

Watch this space.

Above : Chassis build—the start of it.

Left : The chassis front end.

Left : The chassis rear axle position.

Valve drive parts.

Steering system parts.

Radius rods and hubcaps.

Above left : Reversing gear arrangement.

Above right : Chimney, not yet assembled.

Left : Water heater components.

Below : Coal chute to the boiler.

Hand brake components.

Differential housing with engine mounting.

Pump bypass parts.

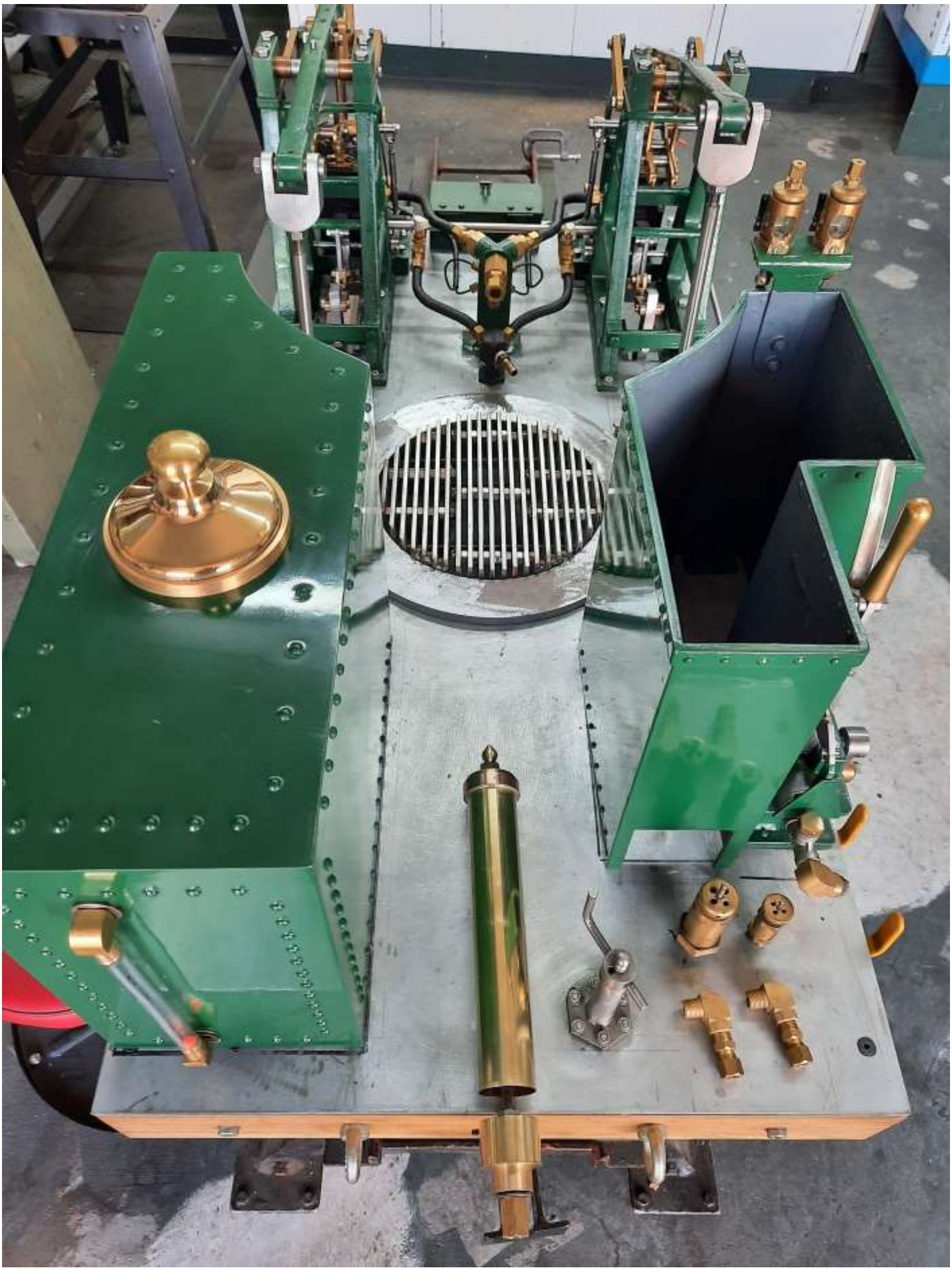
Peter Jones's contribution follows :

Been spending some time on my improved Stirling along with a lot of other things. I could have had the tender frames lazer cut but preferred to do it the old way now that there is some free time.

The jenny odd legs above the frame is the first tool I made as a first year apprentice at Otahuhu Workshops 57 years ago and still use it regularly.

John Heald advises……..

Likewise, plenty of spare time. The 'Gadget' is complete, runs nicely on air, and awaiting its boiler and associated wood work additions. It's amazing how much one can achieve when plenty of free time is offered.



“Gadget” bits!!!!!!!!

Part 2 : How not to build your first locomotive.

Build a locomotive, no thanks I'm buying one.

So first correction to part one, the 19D at Bloemfontein may be 12.25" gauge but I am unable to officially confirm that, internet talk tells me so.

The path to building a 23 was not a simple one. I wasn't building one, I wasn't buying one, what was Model Engineering? I'd been to a few tracks in my time but there had never even been a thought about giving it a go.

Moving to New Zealand from the UK I knew there was an outfit called Mainline Steam, the plan once settled there was to see if I could help out. And the job was in Tauranga, so scrap that plan. A couple of years later, living in Tauranga rumours started to surface of steam trains possibly being stored here, a few more years went by and PSA hit. Nothing eventuated, even the Jazz Festival steam engine stopped coming, how was I going to get my fix?

And then this collection of pictures came along. A chap called Tony McKay sometimes visited the Tauranga Model Marine and Engineering Club with his 5" gauge 19D,it was their open weekend coming up, perfect timing for checking it all out.

A few questions asked around the clubrooms and I was pointed in the direct of a guy called Grant Alexander. As you do, you start making small talk, " Soooo, know anything about a 19D? I'd like to see it" "Actually yes I do, its in Cambridge and its for sale."

Well it was Christmas in November, sold I'm buying it. I hadn't a clue about all this model engineering but this opportunity could not be missed, I'd figure it all out.

Pic Hamilton Model Engineers

20 years to build, starting life in UK, moving to Pretoria, South Africa and then Hamilton NZ where it was finished.

Pic Jason Flannery

Tony's number was extracted, a phone call later and it was not to be, the 19D was sold and going to the UK.

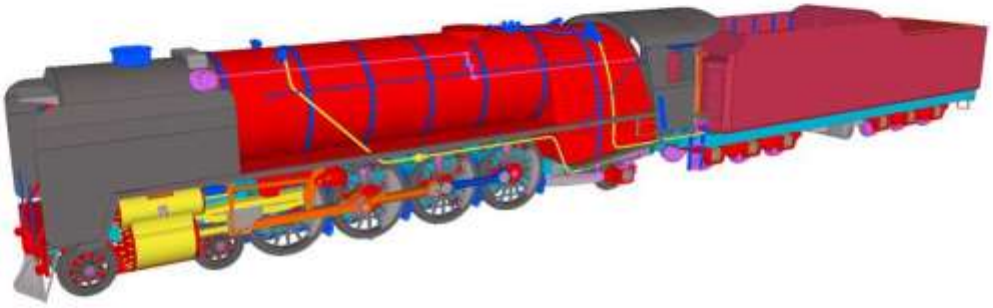
Well I was gutted. I went to see the engine in Cambridge and had a chat with the builder. "Just build one" Tony said, "If you really want to do it you can". Well where to begin? Buying a 19D was one thing, building an engine was another.

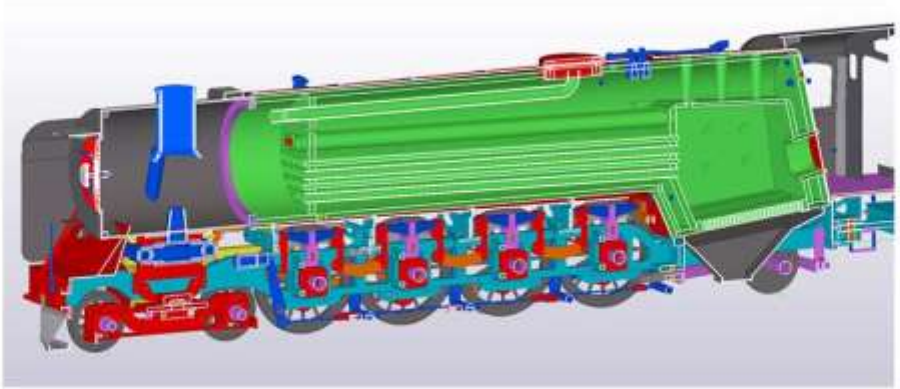
It was time to do some homework.

So now we were building from scratch and there was no other engine quite like the 23. The big SAR 4-8-2's were my favourite, although I had actually never seen a real 23 in person, only the 15F's. Drawings, castings, patterns, this was not going to be as easy I thought. How was this all going to be achieved? I was unable to find anything already available for a 5" 23, it wasn't going well.

Somebody put me onto a service in the UK, 15F drawings, castings, the lot all available. It was a compromise on the 23, I could make my own 23 tender and have 15F 3149 in 1/8th scale, sounded good to me.

Well that never got off the ground, the supplier was messing me about, the price was different everyday, I had enough of the messing about and said good day, I was back at square one.





The slate was clean again, all options were open. A few suggested kits locally available, there would be castings and a wealth of knowledge to go with them. Sorry, it just wasn't SAR and I knew I couldn't bring myself to do it. A major concern was I'd lose interest half way and give up.

Well that left me only one choice and that was to build the lot from scratch, so the 23 was back in the picture.

First job was to draw it up to help me piece together what was going on in the 500 odd pages of makers drawings.

So now that I had some pictures, where to start. Fortunately Malcom George got me started and showed me where to begin. It was decided on the tender first before I destroyed $100's worth of castings. Malcolm did the axle boxes and bogie side frames, with me doing the axles and wheels. These were the first parts I had ever turned in my life.

And slowly we rise from the rails.

Yes there are a lot of rivets, I lost count after packet 15 of 100's. 1.62mm drill bits, going through them like water.

First visit to the track, almost a shame to paint the raw steel finish, pity it's not moistures best friend.

3D printed patterns.

Main drivers, for these I enlisted the help of Ash Thomas and his son Gavin for some of the more precise machining.

Castings ready to take steel tyres.

All of the axles are needle roller bearings, using inner rings meant they didn't need case hardening. The coupled rods are on the sample principal, inner rings on the pins but instead of roller bearings I have made Vesconite top hats pressed into the rods.

Steel tyres shrunk on and profiled.

Assembled with Ash Thomas using heat and liquid nitrogen.

First test run of the wheels at a playdate. I hope this thing works after all the years of work that have been put into it.

Coupled rods using needle roller inners and Vesconite top hats.

And what does 2020 hold? Hopefully running on air. Still a long way to finish off all the cylinder fittings and timing rods.

From the Editor :

I have been overwhelmed with a **truck load** of material for the mag.

Many thanks to those of you have sent me articles I really appreciate it. May it long continue!!!!!

Taupo Totara Timber Company Ltd.

RAILWAY

As the Company's Railway is really for the carriage of its Timber and is not intended for carriage of passengers the Company hereby GIVE NOTICE that no passengers are carried upon this RAILWAY excepting upon the following conditions:

1. The Passenger is carried entirely at his or her own risk and expense.
2. The Passenger in accepting conveyance upon this Railway thereby for himself or herself and for his or her executors or administrators agrees to relieve and indemnify and keep relieved and indemnified, the Taupo Totara Timber Company Limited, its servants, workmen, or agents, from all pecuniary or other responsibility to him or her, or to his or her executors or administrators, for death, for personal injury, or for loss of or damage to his or her property which may be sustained in the course of the journey, whether the same is caused by the negligence of the Taupo Totara Timber Company Limited, its servants, workmen or agents, or otherwise howsoever.
3. All permission by the Company to travel upon this Railway, whether for payment or otherwise, is given upon the above conditions which are equally binding upon passengers whether they have expressly signed a contract to this effect or not.

Sign for the conditions of carriage for the TTT railway.

"Acting under instructions" I was making adjustments to a box of i**mportant** documents when I came across a 1985 Calendar of Kanapine Timber and Hardware. This Company was a subsidiary of The Taupo Totara Timber Company and had forests and sawmills mainly in the King Country and Waikato. They had purchased Bunn Brothers Ltd operators of the Matakana forests and sawmills. The Calendar has a series of old photos which I intend to reproduce in this mag. The one above dates back to the early 1900's and was printed on cloth and posted around the Companies forests.

Wanted :

Chris Pattison is looking for articles which appeared in "Engineering in Miniature" in 2016.

These articles relate to the construction of the Atkinson Waggon and appeared in Volume 36 No 12 — Volume 38 No 2 inclusive . Chis is more than happy to pay for copying / postage costs to anyone having these issues. Please contact Chris on Ph 07 219 7519 or <ytrose2@gmail.com>

TMMEC 2020 CALENDAR

	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T
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SUNDAY RUNNING DAY – 10:00 – 15:00

OFFICIAL CLUB PLAYDAY

COMMITEE MEETING – 19:00 START

GENERAL MEETING – 19:00 START

ENGINEERING TUESDAY – 19:30 START

OPEN WEEKEND

CANCELLED

AGM

CHR	CHRISTMAS PARTY 15/2/20
9-13 JAN	HAMILTON 2020 CONVENTION
30-31 MAY + 1 JUNE	MANUKAU OPEN WEEKEND
11-12 JULY	EBOP OPEN WEEKEND
31 OCT	HALLOWEEN NIGHT RUN
13 JUNE	WINTER NIGHT RUN