

# Canterbury Tales

Vol.59

August 2021

**H**ere's what's happening around the club. Our latest construction job is to build a new traverser, to replace the small one that carried and lifted the 5" gauge locos. The new model will include 7¼", enabling us to use both traversers at busy times. With Canmod looming in January it's going to be a great asset.

At long last the pond is up and running, complete with new weir and spillway. It took a while to obtain all the permits needed to do the work. The boat boys have had a hard time trying to get on the lake over the last few months, what with a dry summer and no water, followed by the algae which came and went, then the winter with **too much** water. Global warming, they say, but all good now, ready for summer!

The overbridge has had a face-lift and a re-paint, and is looking very smart. We now have a new wood chipper which has proved to be very efficient in dealing with the accumulation of dead trees & branches etc. The waste is spread around the garden.

Also another toy in the shed is a fire trailer needed in readiness as a first responder to any small fire around the track. It can be towed behind our mower or a car. It boasts a 250 litre tank with pump. We might call it "little flick."

The raised track has had the bridges upgraded with a new locking



Building new traverser

mechanism which will stop the rail from dropping.

The new water-tank stand at the raised-track station is near completion. It has another hose-reel fitted for emergencies. The plastic tank will be lined on the outside with timber and painted the same as the main tank at the bridge.

Also in progress is the building of 6 new trolleys that will bring our trolley numbers to the maximum storage capacity.

We now have new signage at the station, flashing lights and all, plus a new audio system on the platform, continuously reminding people about our safety instructions.

At the moment a campaign has begun, aimed at cleaning out the shed and getting rid of old stuff that's been there for years and is now no longer needed. Our thanks are due to the Wednesday group for their tireless work in keeping our club looking so good. Looking forward to the summer.

*John Howie*, Clerk of Works



The new water-tank tower



## Peter Grounds

## Progress on “The Berkshire” (Part 8)

Much of my workshop time over the last three or four months has involved completing the boiler and smokebox. Finally, after about six years, the copper tubes have been fitted. Talk about procrastination.

**Photo 1** shows the smokebox tubeplate with 33 x 19mm diameter firetubes and five 38mm diameter superheater flues.

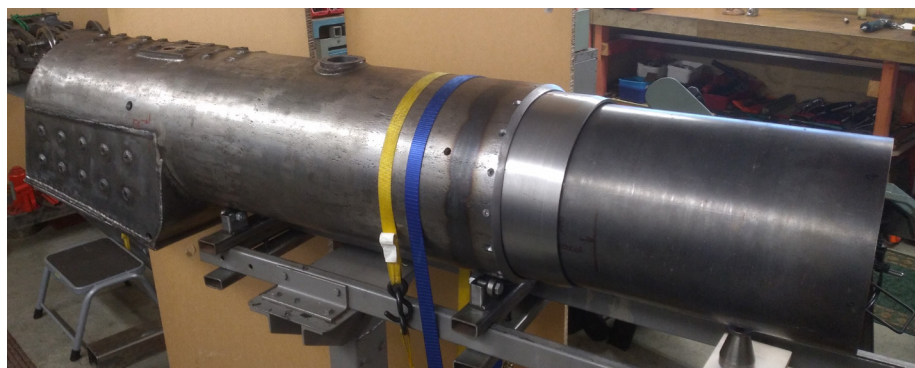


Each tube/flue was cut to length, faced off in the lathe, the ends annealed (heated to cherry red and plunged into cold water) and inserted through the smokebox tubeplate through to the firebox tubeplate. Guiding the tubes in was tricky, especially as the tubeplate holes are close tolerance. **Photo 2** shows some of the artillery needed to effect this.



Included are bullet-shaped end caps to guide the tube through the holes, steel handles so I've still got something to hold onto when the tube is almost in position, flaring dies, a drift to bead over the tube on the firebox side, and a 19mm three-roller tube expander. Most of this I made, but I shouted myself the tube expander. It wasn't cheap. Missing is the 38mm tube expander. I can't afford to buy one of these, so I guess I will have to make one. Although the tubes are in position, they are yet to be expanded into the tubeplates.

**Photo 3** shows the boiler with the smokebox trial-fitted.



It is a little too long, so 35mm will need to be trimmed off the end of the smokebox - a good job for a plasma cutter. You will notice that there is a step in the boiler barrel, towards the smokebox end. In the full-size boiler, the barrel had several courses that telescoped together in this fashion. However, in the model, the smallest diameter course is actually part of the smokebox. This is to keep the total capacity of the boiler to within our 50 litre maximum. You can see where the tubeplate is by the heat discolouration of the barrel, where it was welded in. The steps between the boiler courses and the smokebox are rather large. This is because the barrel thick-

ness is way over scale. 10mm thick on the model, which equates to a whopping 80mm (!) thick if scaled up to full size. However, the boiler jacketing on Berkshires was tapered, and this is going to hide the overscale steps. It will look fine when finished. Although the boiler thickness is much more than needed, it is a comfort for future drivers who will find themselves sitting behind 40 - 50 litres of superheated water!

The boiler/smokebox weighs in at 250kg. While under construction it sits on rollers so I can rotate the boiler when needed. The weight of the boiler is slowly distorting

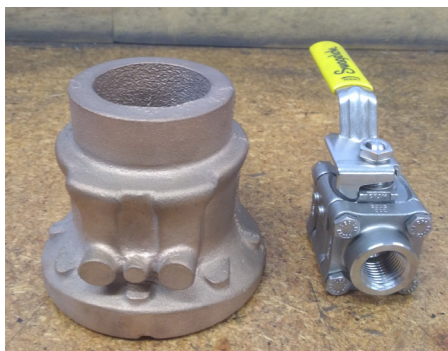
the rollers. However, I expect they will make the distance. A couple of tie-down straps act as friction bands so the boiler will remain in position after rotation. The centre of gravity is between the sets of rollers.

The smokebox will look much better with a stack (chimney in Queen's English) and photo 4 shows a nice bronze casting made by Win Holdaway and Ian Close of The Casting Shop. Next to it is a stainless steel steam-duty ball valve. I bought this quite cheaply from a US Government surplus store in Texas via eBay.

However, any cost savings made were lost by the valve having



American NPT threads, and my pipe taps and dies are BSP. (Similar but not the same). NPT taps and dies are available here, but not cheap.



Finally, **photo 5** shows the firebox, the combustion chamber and some of the superheater flues.



It's a big firebox, and soon I am going to have to decide on what fuel to fire it with. Although coal firing was on my mind when I designed the boiler, the firebox will readily accommodate oil or LPG firing. Most of the USA model Berkshires are oil-fired, and given some of the restraints that coal seems to be presenting lately, I may go with oil firing.

With all this work on the Berkshire boiler, I've made no further progress with the Ab cylinders. Maybe next time.....

## By way of contrast...

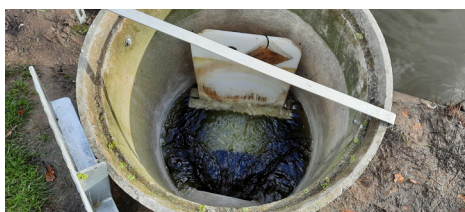


Eddie Clark's Dg 772 in pursuit of Dean Farrow's Model 'T' rail version, both in 1/8 th scale

## From the Dockside

Apparently there's not much happening in the boating world.

Here are some highlights...



## Important Message from the Loco Foreman

**O**nly loco owners from each allocated track in the engine shed may move others on that same track to provide access to and for their own loco."

This requirement should reduce damage to locos suffered by owners when their locos are being moved by "others".

Note: If there is no-one present from a particular storage track, contact the Loco Foreman or his designates for access to your loco.

Rob Wilson



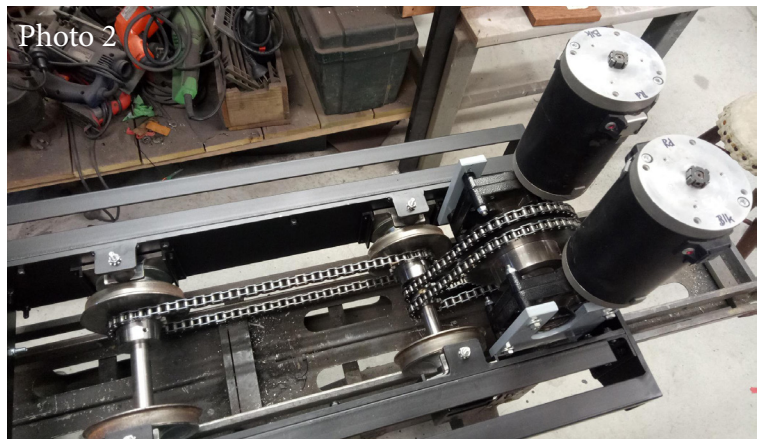
# Grindrod

*Rob Wilson's latest*

Introducing the latest loco from my shed - a "Grindrod" shunting loco. I have made the two-axle version of the GS7 loco shown in **photo 1**. I have re-used the two 300 watt wheel-chair motors that I had originally mounted in the "Krokodile" loco I previously made, and these are set up for 24v operation.

**(Photo 2)** Since these photos were taken, I have also added side hand-rails, and now need only to make a front coupling-pocket and to glaze the windows. I intend to name the loco *Hippo* due to its chunky fat shape. I **did** set a month as the time to build *Hippo*; however I've gone over my limit by two weeks. This loco is number 19 in a series.

Next on the bench is a 5" petrol-powered loco for Bev and a new ride-wagon for Don.



It is with sadness that we record the deaths of four of our members this year.

Richard BAIRD  
Graeme CHISNALL  
John CRAMPTON  
George JOHNSON

All are missed by the membership, and their contribution to the continued success of the CSMEE is noted with gratitude.



## John Begg's 3" Fowler A7. Governor, crankshaft & con-rod.

Last time, readers may recall comment about the cylinder on my Fowler and all the bits that bolt to it. The more astute will have noticed no mention of the governor. That has been rectified and the governor is all complete. I made a 3D print of the main part and had it cast in bronze. The bevel gears posed a bit of a problem, but in the end were procured off Ali-express for a nominal sum. It took a while to find the correct sizes but worth it as the end result is fine. An easy and cheap solution. For the balls, Jock advised me to find some balls of a suitable diameter from a ball race, heat them cherry red and allow to cool slowly. This was duly done and it was no problem to drill the balls to take the pins which were then silver-soldered in place.

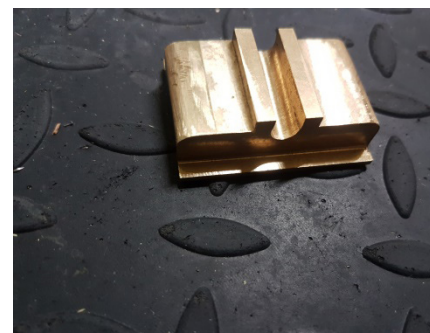


operation albeit one with many different diameters which require lots of measuring and care. The flywheel was too big for my lathe so the machining for that was farmed out. But the drive gears, conrod, eccentric sheaves have all been made and fitted. The conrod is a surprisingly big job. There are 9 individual components that make up the conrod and a lot of machining and metal removal required. The eccentric straps are reasonably straightforward but obviously special care is required in riveting them together and getting the keyway in the right place.



The next big chunk to tackle is the motion. Good interesting work and very visible on the finished engine so, note to self, care is required with the finish. With that in mind I have decided to make most of the motion from stainless.

The slide valve is a surprisingly large (to me anyway) piece of bronze. I was fortunate that Rex Walker had an old bronze bearing that was just big enough to eke the slide valve out of its base. Thanks Rex. That helped a lot.



As with the cylinder, there are lots of bits on and around the crankshaft. The crankshaft itself is a CI casting and relatively straightforward machining



## 7¼" gauge South African Railways Class 15F locomotive (Part 2)

By Ian Fanshawe

I may have finished up last time on a rather pessimistic note, but in spite of that, good progress has continued on the 15F. **Photo 1** will give some idea of how things stand, with recent work mainly concentrated on the cylinders which, apart from cladding, are as good as complete. The main cylinder is 100mm bore and the valve cylinder is 50mm bore. Cast iron pistons and piston valves have been fitted. The main pistons have 2 ring-grooves each containing two 1mm thick rings, and the piston valves have 5 grooves at each end fitted with one 1.5mm ring each (**photo 2**) which should give a good seal. The piston rings were all originally intended for IC engine use, which have a radial thickness greater than that required for a steam engine. This was reduced by machining the inside diameter of each ring thus cutting down the pressure exerted by the ring on the cylinder wall to a level suitable for use on a steam engine. IC engine require greater wall-pressure apparently, due to higher piston speeds and having to pull a vacuum on the inlet stroke. Whereas steam engines are relatively slow and have positive pressure at all times (I hope).

### Fabricated cylinders:

My theory is that if one is making only a one- or two-off of an item then, - by the time you have made a pattern, particularly a complex one with core boxes etc., paid to have them cast, plus their machining time, - you can fabricate them more quickly. To my mind, and not being much of wood-worker, this is far simpler

The 15F cylinders comprise two 12mm steel plates at each end sandwiched together ie; 4 plates per cylinder. These hold the main and valve cylinders which pass through holes in the plates. **Photo 3** shows one of these plates after machining, with a 9mm deep steam passage communicating between the main and valve cylinders, which lines up with the valve ports. Then there is a 2.5mm wide by 1.5 deep groove around the passage and cylinder openings. The groove has a 2mm dia viton 'O' ring



Photo 2

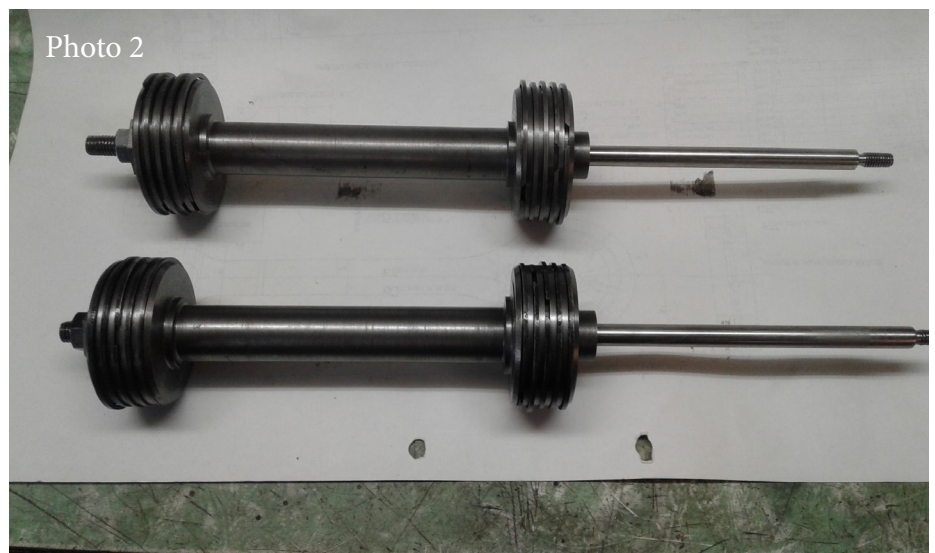


Photo 3





chord inserted, to seal the mating faces of the two 12mm plates with 0.5mm crush. The chord is joined using super- glue. Viton 'O' rings are used to seal the cylinders against the end plates and cylinder covers, the whole assembly being held together by the cylinder cover fastenings. The cylinder barrels are machined from aluminium bronze, which is corrosion-resistant, has work- hardening properties, and which works well with cast iron, provided there is adequate lubrication. Finish-machining of the bores was carried out fully assembled, **(photo 4)** on the mill.



Next on the agenda will be to complete the design and manufacture of the valve gear linkage. This will then hopefully lead on to the all important milestone and morale booster of a run on compressed air.



Additional photos **(5 & 6)** show the valve cylinder and ports and the exhaust ducting from end of valve cylinder to exhaust piping.

## New Trolleys on the way

The Wednesday Gang have been busy assembling laser-cut components for 6 new trolleys. This will bring the club up to its full complement of 30, so the Trolley Shed is now officially declared FULL.



# CSMEE Officers for 2021 - 22

**Patron: Jock Miller**

<b>President</b>	Alex Cowdell	03 318 1908
<b>Vice President</b>	Jonathan Grueber	365 0604
<b>Past President</b>	John Howie	328 7459
<b>Secretary</b>	Rob Wilson	021 816 505
<b>Treasurer</b>	Mike James	321 7051
<b>Loco Foreman</b>	Rob Wilson	021 816 505
<b>Commodore</b>	Robin Shand	021 217 3601
<b>Clerk of Works</b>	John Howie	328 7459
<b>Librarian</b>	Dave Markham	322 7524
<b>Boiler Committee Chair</b>	Dave Campbell	326 5585
<b>Safety</b>	Committee	

## Committee Members

Nick Gilder	942 3133
Bev Brash	329 6113
Eddie Clark	359 9615
Isaac Lester	027 867 9933
Mike Harrison	349 6946
John Blanchard	359 4053

## Boiler Committee

Ian Fanshawe	942 2937
Mike James	383 4985
John Hamilton	322 4574
Keith Robson	324 4195
Dave Campbell	326 5585
Peter Grounds	343 1443

**Constitution and By-Laws Chair:** John Howie 328 7549

## Volunteer Positions

<b>Awards Night Conv.</b>	Dave Campbell	326 5585	<b>Visiting Spkrs.</b>	John Begg	3398448
<b>Asst. Librarian</b>	TBA		<b>Membership</b>	Murray Fowler	03 349 5691
<b>Asst. Loco Foremen</b>	Dave Markham	322 7524	<b>Canterbury Tales</b>	John Pattinson	329 4441
	Barry Doublesin	383 3827	<b>Shed Foreman</b>	Alan Barlow	021 224 9031
	Peter Grounds	03 3243662	<b>Mech. Mtce.</b>	Peter Grounds	03 324 3662
<b>Asst. Clerk of Works</b>	John Hamilton	322 4574	<b>Roster</b>	George Maylam	324 3469
<b>Projects Manager</b>	John Hamilton	322 4574	<b>Facebook</b>	Patrick Whillis	318 7301
<b>Archivist</b>	TBA		<b>Ticket Box</b>	Jim Rosanowski	332 1370
<b>Webmaster</b>	John Begg	339 8448	<b>Publicity</b>	Ben Sewell	027 384 5651
				Glen Batchelor	351 5411