

**Reading Society  
of Model  
Engineers  
Charity Number  
1163244**



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**Free to members**

# **The Prospectus**

**September 2021**



**Miner's friends**

Photo Karl Trussler

**LATEST CLUB NEWS  
SWEET PEA CYLINDERS  
CLUB INSURANCE  
FIRING A JULIET  
CLAUD BOILER**

## A VIEW FROM THE CHAIR

John Billard

With the relaxation of Covid restrictions by the government we have decided to reopen the refurbished clubhouse for members on Thursday evenings. The first meeting will be on 9 September from 1930. This will be an informal gathering of members and the agenda will be 1) Tea, 2) Cake, 3) Chat, but please take Covid precautions to protect yourself and your fellow members.

Activities are now commencing elsewhere. The big event for this month is the Federation of Model Engineering Societies (formerly Southern Federation) rally at our site on Saturday 18 September. A number of clubs and individuals will be present. There will be a competition at the behest of the Australian Association of Live Steamers for a trophy for the best example of a Commonwealth prototype steam locomotive that runs at the rally. We hope that some RSME running may also take place on the following day. And we'd like to exhibit some of our members models

We shall appreciate some help from members to make the day a success. Please contact Peter Harrison on 07920 833546 or [pjharrison31@btinternet.com](mailto:pjharrison31@btinternet.com)

Public running will again take place on 5th September and watch out for announcements about club running but this is planned for the 13th September from 11 am onwards.

The trustees have a full agenda at the moment and are also in preparation for an AGM which is now planned for 21 October in the club house. Full details will be published in advance.

We are looking once more at the raised track extension project. This inevitably has stalled because of recent restrictions. However we are seeking a way forward so we can report at the AGM as above. On that basis a trackside meeting is planned for 10 October for all interested members to consider the preferred way forward. Please note these dates in your diary.

The next trustees meeting is planned for 13 September. If you would like any issues raised please contact the secretary, Stuart Kidd, details on page 1.

Finally I hope that a full Club Diary will be published next month onwards.

Opinions expressed in PROSPECTUS are the personal views of the contributor and cannot be taken as reflecting the views of the trustees or editor.

**The deadline for the October issue is 18 September**

Contributions may be submitted in hard or soft copy to the editor.

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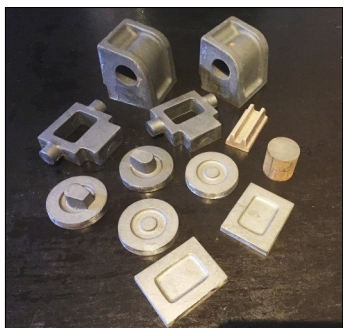
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## First Loco Build by a Sweet Pea Convert

### Part 3 by Stephen Millward

The Sweet Pea starter kit I acquired from RSME kept me busy for a couple of years without having to make any significant investment in expensive castings. Once I had the frames assembled with wheels and coupling rods, I started to feel more confident about completing the build and I then put in an order to Blackgates Engineering for the cylinder castings set.



I had three options for boring the cylinders. The first, which I never considered seriously, was using my Chester mill. One issue with this mill is that whilst the quill is adequate for milling when it is firmly clamped, it moves alarmingly when it is used to feed a single point tool used on a boring head. My second option, which I

gave more consideration to, was mounting the cylinder blocks

on the lathe faceplate and using a toolpost mounted boring tool. In the end I discounted this as I wasn't confident my 70 year old lathe would turn absolutely parallel. In the end I opted for mounting the cylinder blocks on the cross slide and using a between centres boring bar.

I had made the boring bar 20 years ago when I attempted a similar operation on a Myford ML7 to bore a 2.5" cylinder



for a steamboat engine. That hadn't gone well and that boring operation had to be completed in a 4 jaw on a Colchester Master. For most lathe work the forces are only pushing the saddle down onto the lathe bed, so you can get away with a saddle that lifts a bit on the bed, like it did on my Myford! When boring between centres, the tool for some of the time will try to lift the saddle up off the bed. This issue quickly high-lighted the short comings of my decidedly worn out



Myford ML7. After running some checks on my Smart & Brown SABEL lathe, I concluded it was up to the job, and capable of machining a circular and parallel cylinder bore. My boring bar is nothing sophisticated, just a stout

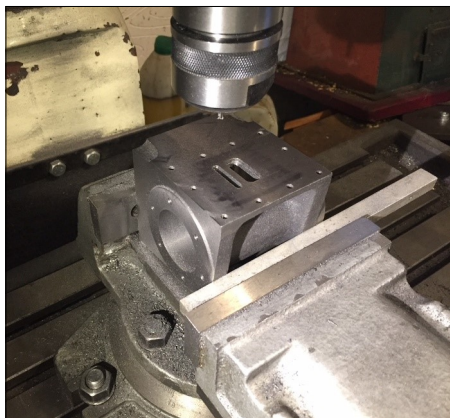
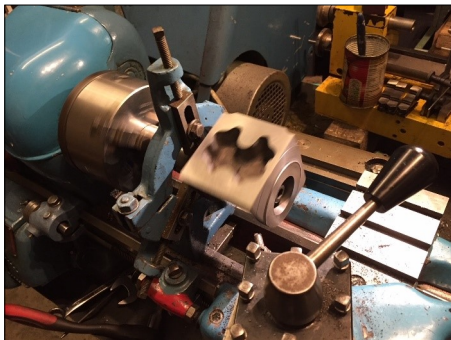




steel bar with centres drilled on either end and a square cross hole to take a tool bit, held by grub screws. Some might ask how it is possible to bore to a size without any fine adjustment. My technique was to carefully measure the protrusion of the toolbit from the boring bar, using a digital caliper. This technique resulted in both cylinder bores to within a thou of the target dimension.

Whilst roughing out one of the cylinders

I discovered a void in the casting. I phoned up Blackgates Engineering who agreed to replace it, but they would need to see the faulty one first. I imagine they get a few chancers trying

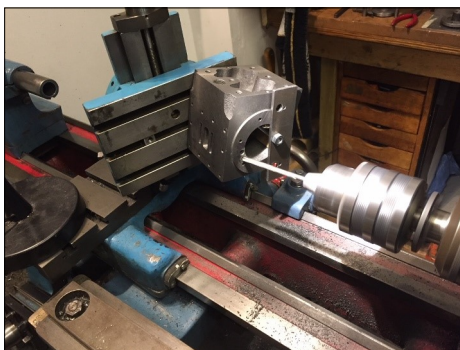


to get a replacement casting when the machining goes awry. Luckily this was shortly before the London Model Engineering Exhibition so I arranged to do an exchange at the exhibition.

Once the cylinder bore was completed, I ensured the cylinder ends were

truly perpendicular to the bore by making an expanding mandrel to fit the bore. This was then held in the 3 jaw chuck, and to ensure rigidity the lathe fixed steady as well. The cylinder was then mounted on the mandrel and either end faced off.

The cylinders were then taken indoors for checks with a surface plate and height gauge. This revealed the cylinder block surface that bolts to the frames wasn't truly parallel to the cyl-



inder bore. The same error occurred on both cylinders and was presumably caused by the lathe cross slide surface not being parallel to the lathe axis. I suppose this is not a surprise on an old lathe, as the forces on the saddle are nearly always at one end only, which will result in uneven wear. The issue with the cylinder blocks was easily rectified by using the mill to fly cut away a few thou to true it up.

Drilling the steam passageways at the correct angle involved a bit of trigonometry to work out the angles, which I concluded would be most easily set up on the lathe using the vertical slide. I always like an opportunity to use the lathe's vertical slide, as it feels like proper old school model engineering.

These are the cylinder machining operations which I still recall, probably because I took photos at the time. Looking back through Jack Buckler's Sweet Pea book I realise the wealth of advice provided, which if followed should ensure a successful outcome. This includes details of jigs for machining the cylinders and detailed instructions for milling the ports. (*to be continued*)

## **An Update on the Club and Society Insurance Schemes** **by Jim Brown**

You may remember that back in March 2021 the Insurers, Travellers Insurance, changed the limit of indemnity for members restricting the level of indemnity provided, ***where members are carrying out modelling and model engineering activities in a personal capacity to £1million*** (£2 million in aggregate and in any one period of insurance).

Where members are carrying out modelling and model engineering activities that are club activities, the normal club limits of indemnity apply. In the case of the RSME this would be £5 million.

In the latest issue of the FMES newsletter (June 2021) Martin Levers of Walker Midgely has confirmed that club members visiting other bona fide model engineering clubs or societies are not subject to the reduced indemnity limit and that ***the visited clubs limit of indemnity will apply***. So if you want to know how much you would be covered for when visiting another club you need to ask them!

Any model engineering activity carried at a member's home track even when it is not a formal event in the club calendar is deemed to be a normal club activity and will therefore be subject to that club's normal limit of indemnity.

If you want to be sure that you always have £5million of cover then you may consider taking out your own individual cover which we understand is available from around £30 per annum.

## FIRING UP A JULIET

by Terry Wood

When I first bought my Juliet steam loco there were two parts missing; firstly the fire door and also the fire grate. Making the fire door was pretty straightforward I just got a piece of brass sheet and cut it to size then bolted an old brass hinge to it then made a handle from a bicycle wheel spoke that I cut down and bent. The fire grate on the other hand was another thing.

Firstly, I didn't have one nor could I find any drawings to see what it looked like so the whole thing was a bit of an experiment. The first thing I did was

make an ash pan and seeing as this was about the size of a packet of cigarettes on a 3 and a half inch gauge tank loco I had enough material to make it out of stainless steel. At

first, I made the bottom of it flat but soon discovered it was fouling the crank driving the water pump so a slot had to be cut in the middle to accommodate this.

The original fire grate was made from perforated stainless steel but when a fire was lit there was not enough draught to keep the fire going so the next thing was to replace this with some fire bars silver soldered to the stainless steel. This did work until the fire reached a temperature hot enough

to melt the sliver solder: back to the drawing board. I then found some steel rods with M3 threads at either end which were just the right length to fit inside the fire box so I bolted them to some perforated stainless steel and so far they seem to be working OK and have survived two firings of the boiler - how long they will last I don't know but I will keep you posted.



**The Federation of Model Engineering Societies  
Annual Rally  
at RSME  
18 September 2021**

## IN SHOPS THIS MONTH—BUILDING A CLAUD

by John Billard

### The Boiler Part 2



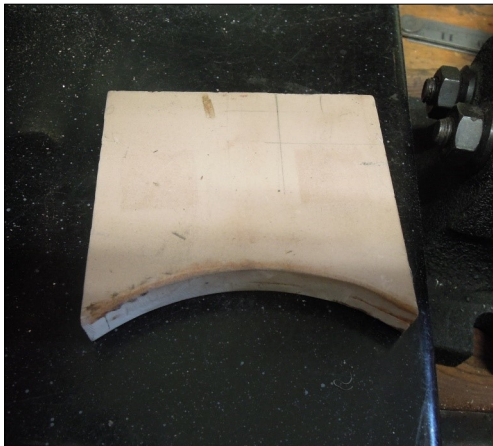
Not quite so much to report this month. However I have been consulting with the RSME boiler inspectors being unsure about the crucial joint between the boiler barrel and the firebox. This led me to talk to Western Steam who supplied my boiler kit. It turns out that a jointing ring was omitted and I hope that this is now on its way. We discussed whether it was necessary to flange the throat plate against the barrel and Western Steam said no. But I knew that our inspectors preferred it that way.

Accordingly I made a suitable flanging block from moulding board and it was a simple job to do having worked out exactly where the bend was to be (the difficult bit).

I would also like to thank Alan Thatcher who has been in touch with some invaluable advice not usually found in the text books.

The next stage will be the first heat up and brazing operation soldering the tubes into the firebox tube plate. More of that I hope next month.

*Above:* The boiler barrel seen in position over the firebox wrapper with the throatplate duly flanged





## Recent Scenes at the Club Track

*Right:* Alan Thatcher with another of his stationary engines.

*Below:* The editor out with his 7808 Cookham Manor.

*Below Right:* Karl Trussler's Bantam Cock, a Gresley 2-6-2.

Photos Karl Trussler



## DIARY

Please watch for announcements regarding future club activities in **PROSPECTUS** and e mail.

*Don't forget our regular Thursday evening Zoom discussions 1930-2100. The secretary will provide a link.*

*Enjoy a lively discussion on all things mechanical and experimental—bring your Favourite stories.*

*Please write for Prospectus. Photos welcomed.  
Comments by RSME members on any subject appearing in  
Prospectus are welcomed by the editor.*