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

# The Prospectus

## August 2021


LMS Jubilee Class 4-6-0 45596 *Bahamas* waits at Newbury on a down excursion to west Somerset on 24 July 2021. Photo Juliet Franks

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## A VIEW FROM THE CHAIR — John Billard

As I write, the scorching weather has ended; some would say thankfully! Last Tuesday I was out with the Manor at the club running and it was not a particularly successful time as warm water, even from the mains, failed the injector. I did a few laps with the pump on but with a busy track this was still tricky. Electric pumps seem to be catching on, how about some refrigeration!

The trustees met on the 12 July as usual with a full agenda. The main points arising was a report on projects. Thanks to Nigel Penford and Mike Manners the electrical kiosk is complete as is a major lighting upgrade in the ground level shed. We discussed the raised track extension and wish to call a meeting of willing members to decide how to pursue this project. This is likely to be in September with a number of options available.

The club running/fish and chip evenings have worked well and the latest was on 20th July very well attended. The 00 group was also on site dealing with the damage caused by the intrusion reported last month.

Despite cancellations, including the Midlands exhibition this year, we still expect to host the Southern Fed rally on 18 September. Also, the trustees still wish to hold an AGM in the autumn and are clarifying the number of posts up for election, complicated by there being no meeting last year.

Normal public running remains problematic but at the time of my writing this Sunday 1 August will go ahead on the ground level only.

Finally if you are reading this issue and have not joined RSME this year I hope you will now. This will be a great encouragement to our dedicated members who have kept the club going so successfully in such bad times.

Work on the repair to the damage to the 00 layout caused by the intrusion.

Photo John Billard

**2021 subscriptions are now due**
**Rates are unchanged.**
**Membership forms are issued.**

# First Loco Build by a Sweet Pea Convert
# Part 2 by Stephen Millward

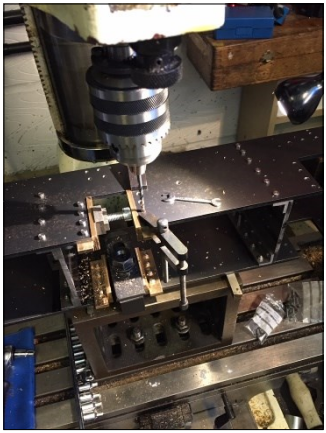
**Frames, Wheels, Coupling Rods**

The sweet pea model was designed in the 1970s by Jack Buckler. The design is strongly influenced by Bagnall engines, which also had a marine-type boiler, and had some Hunslet details - Jack owned the full-size quarry Hunslet, "Allan George". The name "Sweet Pea" is credited to Jack's brother, Peter, who apparently had a genius for dreaming up amusingly inappropriate names for locomotives. Jack passed away in August 2020 aged 94. I'm sure his Sweet Pea design will be a lasting legacy, that will continue to give builders and owners a lot of pleasure.

The nearest full-size version of a Sweet Pea I have seen is Sir Tom (Bagnall 0-4-0) at the Threlkeld quarry and mining museum near Keswick, which I visited in 2018.

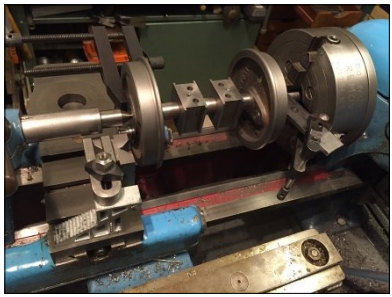

My approach to building the Sweet Pea was to follow the instructions in the book, which commences in chapter one with the frames. These had been laser cut in 3/16 steel with all the points for drilling etched with a cross. The previous owner hadn't touched any of the materials in the kit, apart from centre punching a few of the drilling points, and some of these marks were way off where they needed to be. Once the frames were drilled, I moved onto the stretchers which required a new skill to me, riveting. I initially tried some practice riveting with mixed results. After a visit to the RSME Thursday evening group, where I picked up some riveting tips, my results showed a marked improvement.

Nearly all the initial work on the frames, stretchers and horns was on my Chester mill/ drill. This is a machine I bought new in the late 1990s, when my primary interest was steamboats and I wanted the biggest mill I could get. Chester advertised a new variant of the round column "major" mill, the new feature being a backgear, giving a useful lowest speed of 80 RPM. I visited their stand at the next model engineering exhibition and negotiated a deal with a vice, clamping kit, rotary table, autolock, power feed and stand. My machine has serial number 00002 and as they stopped advertising it soon afterwards, they perhaps didn't sell many. It has worked fine and when it was new, I was struck with how well it performed compared to the old Bridgeport mills I used at the Maidenhead evening classes. Having a large capacity mill has proved invaluable as it means the assembled frames can be fixed to the table. A recently acquired accessory which has proved really useful is a large-

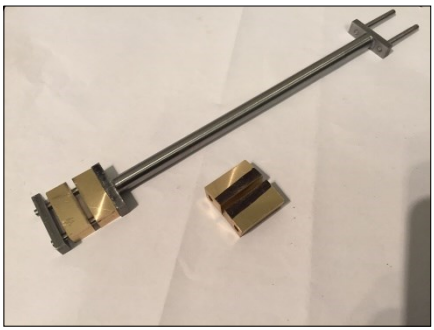


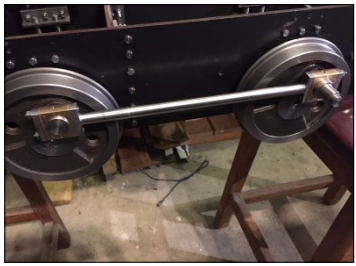
slotted cube. The photo shows the frames fixed to the top of the cube to allow the horns to be drilled.

Once the axle boxes were milled from cast iron strip it was time for some nice lathe work, which I always prefer to milling! This included axles, boring axle boxes and machining the wheels ready for quartering, which was also done in the lathe – see photo. This set up for quartering uses the jaws on a 4-jaw chuck, which can be assumed to be accurately at 90 degrees to each other. A V block was clamped to the cross slide, with the cross slide adjacent to the 4 jaw chuck, and the V block abutting the bottom jaw of the chuck. The lathe saddle is then wound along the bed, and the axle, with a freshly loctited wheel and axleboxes placed between centres. The crankpins are then located against the V block and a bar clamped to the horizontal jaw of the 4 jaw chuck. A large toolmakers clamp is clamped to one of the wheels, to ensure gravity keeps everything in position whist the locktite cures. To ensure no risk of movement, the axle – wheel interface was then drilled and reamed for a dowel.



The standard Sweet Pea coupling rods are of a marine pattern. Some builders choose to make coupling rods in a more traditional locomotive style, however, my interest in steamboats meant I opted for the marine version. The photo shows a partially completed coupling rod and how not to split the bearing brasses! This is an example of what happens in the workshop when I try to make too much progress in one session. I have learned the hard way that when I have completed what I set out to do, that's the time to have a cuppa and think carefully about what to next. (*to be continued*)





## MIKE MANNERS REPORTS…..

Well, Tuesday (6 July, Ed) had an interesting end to the day apart from the fish and chips. Just as we were all packing up on the ground level track the heavens opened and the motor on the hydraulic lift failed so we all ended getting thoroughly soaked to the skin while trying to load three very heavy locos into various vans.

The emergency loading ramp came in to its own and eventually all was packed away safe and secure. The last time I got that wet was sailing in a thunder storm!

Attached are some pics of the ramp in use. You will have to excuse the silly looks on Dave and John's faces!

Also, today we are nearly finished with the connecting up of various things in the Baldwin bunker. Full length lighting is now installed and working. Just the heater and frost stat for the Baldwin to connect up.

Photos Mike Manners

A wet 6 July running afternoon happy group, left to right, Peter Jennings, Chris and Peter Harrison, and Peter Culham. Photo John Billard

## MIKE MANNERS ADDS…… Metal available for members

The work on the ground level kiosk is finished and the work and tidy up in the Baldwin bunker is almost complete. Just to finish things off I would like the trustees agreement (no problem, Ed) get rid of all the old metalwork currently in storage there. There are a large number of very long lengths of 1cm square and very rusty metal laying in along the left-hand side of the bunker. I think they were what many years ago were the running rails of the raised track. They have been stored in the bunker for as long as I have been a club member and I can see no reason to keep them.

I would like to drag them all out, cut them into convenient lengths and dispose of them either to club members, if they are any use, and take the remainder to the metal recycling centre in exchange for some cash for the club's funds. Perhaps put a bit in the next Prospectus asking if any of it is any use to anyone and then I will recycle what's left.

*Please contact Mike direct if you are interested.*
michael.manners2@ntlworld.com 07817 271981

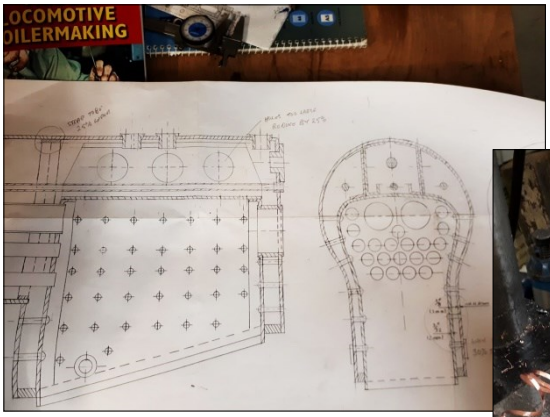
# IN SHOPS THIS MONTH—BUILDING A CLAUD
## by John Billard
### The Boiler Part 1

The boiler is a major project within a project and for me, at least, not without trepidation. A while ago I suggested in PROSPECTUS that we might found an RSME boiler group to offer practical and moral support to each other and I was pleased when three members came forward, Stephen Millward, Peter Harrison and David Scott. All have boilers to build.

I obtained a kit from Western Steam consisting of all the materials and flanged plates. Because I was departing from a published design I produced a drawing for the approval of RSME boiler inspectors and this was achieved.

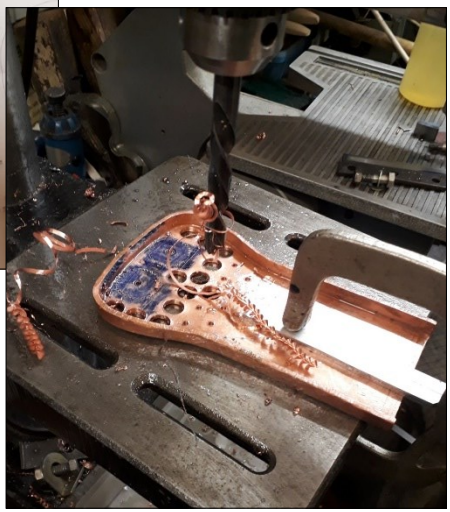
The first stage was to drill the tube plates. This was done with a specially prepared drill bit that made quick work of the job. For the inner and outer wrappers I found that making accurate formers was well worth the effort. The hours and expense making them was repaid with a rapid and correct profile with a close fit around the flanges.

Following Alec Farmer's book a jig was made to hold the tube nest in the firebox tubeplate prior to soldering. So far all has gone well. Attention has to be given to clearances to allow for solder capillary action—004" to .006" according to various sources that leaves quite an alarming rattly fit in the tubeplate. Fingers crossed!

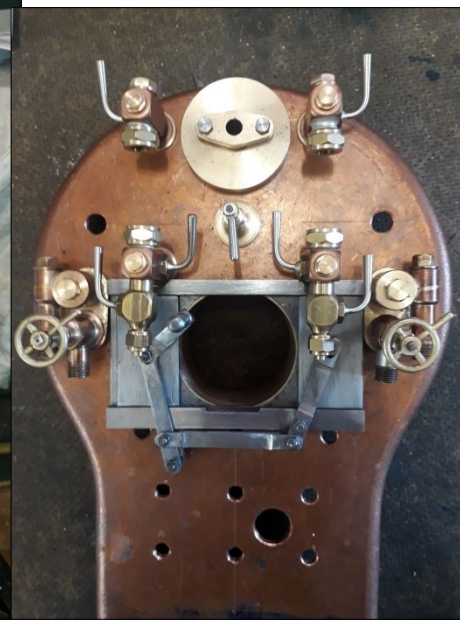



*Above* My boiler drawing as proposed to the RSME inspectors. With some straightforward amendments it was approved for construction

*Below* Drilling the firebox tube plate.



All photos John Billard



*Top Left* The back head partly drilled and the firehole ring is tried in place.

*Above* As a diversion I started to make the cab fittings following Don Young drawings. The gauge glass frames were purchased from Dave Noble. The fire hole door design is as LNER D16/3. Though there were plenty of compromises I wanted the cab detail to have a semblance of full size practice.

*Left* After annealing, the inner firebox wrapper copper sheet was placed over the former, clamped in place and bent round, first by hand then followed up with a soft hammer. I was very pleased with this result..

*Top left* The benefit of the former is shown by the fit of the tubeplate with little adjustment. *Above* After annealing the outer wrapper was placed on its former and… *Left* Formed! Again first by hand then a soft hammer applied.

*Right* Here is the result ready for trimming as per drawing.

I was taken by how ductile the thick copper became after softening in the hearth.

*Above* Work continued by making the fire box girder stays. *Right* shows the tube nest trial jigged up. While it has all gone well so far I don't feel I have started until some successful brazing has been done.

## MORE CLUB RUNNING — Peter Harrison reports

We had no fewer than twenty six members turn up at the club on Tuesday 20th July, Fifteen stayed on to enjoy a fish and chip supper. In total twelve locomotives were seen using the tracks and a stationary engine was brought along by Alan Thatcher.

It was really good to see some of those members that had not been able to get to the club and even better to know that they have survived Covid.

It is planned to organise another two Tuesday afternoon sessions on:

**Tuesday 3rd August 12.00 onwards** with fish and chip supper

**Tuesday 17th August 12.00 onwards** with fish and chip supper.

The Editor adds:

This was accompanied by some very hot weather and it was good to see Jackie enjoying the new kitchen. "So much more space" she said. All thanks to all those contributing particularly Alf Cusworth and Peter Culham with good help from Nigel Penford.

# CLUB RUNNING
# 20 JULY 2021

*Left* Attention at the steaming bays.

*Right* Karl Trussler is in charge of the club built Polly 0-6-0.

*Left* Pete Martin and Mike Sinclair enjoy a good break.

*Right* Alan Thatcher consults with Dave Jerome while his stationary engine turns heads—and ears.

## 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.***

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 September issue is 18 August.**

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

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