

BOILERMAKING IN 5-INCH GAUGE ● RANSOMES TRACTION ENGINE REBUILD

THE MAGAZINE FOR MODEL ENGINEERS

ENGINEERING in Miniature



Coming out to play

Miniature appeal at Steam Rallies



**NEW PROJECT: BUILD A RIDE-ON
TENDER FOR 7¼-INCH GAUGE**



STUART MODELS

FOUNDED 1898

For the MODEL ENGINEER SETS OF CASTINGS

We offer Sets of Castings suitable for both those starting out in model engineering as well as those looking for a new and challenging project.

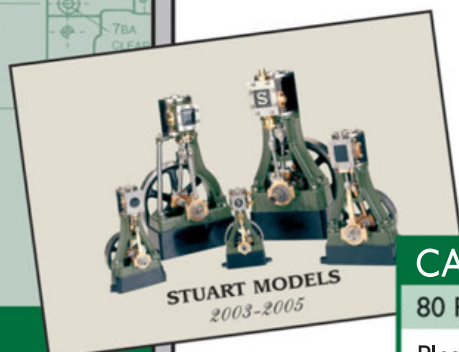


For the ENTHUSIAST PRE-MACHINED KITS

Many of our engines are available as Pre-Machined Kits allowing you to finish the model with a set of spanners and simple hand tools.

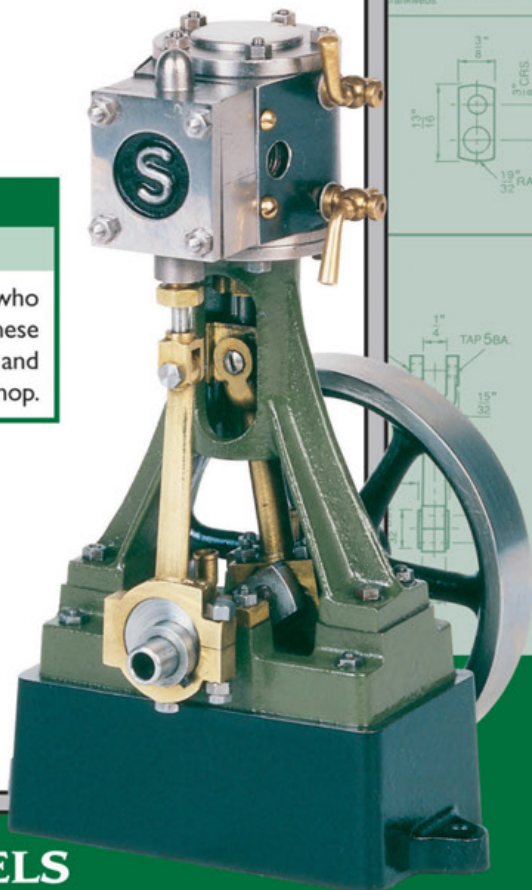
For the COLLECTOR READY TO RUN MODELS

The perfect choice for anyone who has an interest in steam. These models are assembled, painted and thoroughly tested in our workshop.



CATALOGUE - £6.00
80 PAGE FULL COLOUR

Please send £6 for our eighty page comprehensive full colour catalogue which covers our entire range of models and accessories.



STUART MODELS

GROVE WORKS, WEST ROAD, BRIDPORT, DORSET, DT6 5JT

• TEL 01308 456859 • FAX 01308 458295 • www.stuartmodels.com •

CONTENTS

NOVEMBER 2022 Volume 44 Number 05

THE MAGAZINE FOR MODEL ENGINEERS
ENGINEERING
in Miniature



06

06 NORTH LONDON TANK – BOILERMAKING

by Andrew Brock

10 EVENT: SHREWSBURY STEAM RALLY

by John Arrowsmith

13 HARRY'S GAME: MANY PRESSING CHALLENGES

by Harry Billmore

19 STIRLING SINGLE: CAB AND TENDER PLATING

by Bruce Boldner

22 BUILD A 7¼-INCH GAUGE RIDE-ON TENDER

by Peter & Matthew Kenington

28 MAKING LOUVRES IN METAL PLATE

by Rich Wightman

32 RANSOMES REBUILD – BOILERS & STAYS

by Howard & Isaac Trendell

35 EVENT: 7¼-INCH GAUGE SOCIETY AGM

by John Arrowsmith

38 GENERAL NEWS

Last day of the Rhiw Valley

39 LETTERS

40 CLUB & TRACK NEWS

44 DIARY

FRONT COVER

Very much demonstrating the lifelong appeal of model engineering is seven-year old Connor Lake, quite happy on the controls of dad Andrew's Foden steam lorry during the recent Shrewsbury Steam Rally – *John Arrowsmith* reports on the event in this issue.



13



28

EDITORIAL

Good and bad miniature news over recent weeks...

Welcome to the November edition of **EIM** and it's been a busy few weeks in the model and miniature engineering world. I'm writing these words having just returned from an enjoyable afternoon on a miniature railway but a sad one nonetheless, as it marked the final run of the Rhiw Valley Light Railway – a highly attractive 15-inch gauge line located just a couple of miles from where I live.

Sadly as you can read on page 38 this is yet another example of what can happen to an enthusiast's pride and joy following their passing – though in this case the line lasted much longer than perhaps might have been expected, as its founder Jack Woodroffe died in 1990 and only the dedication of his widow and son kept the line operating until now.

The big news of the month, though we haven't been officially told it yet, is the return of the National Model Engineering Exhibition after three years prevented by Covid, and its return too to its former home in Harrogate – you can read about that on page 39. I write this while looking forward immensely to heading to the Midlands show, just over a week away as this page goes to press. Let's hope both the Midlands and the Harrogate events see a big attendance as I've said it before, we need our shows!

We've another mixed bag for you this month, a definite highlight being the start of another major project from that innovative father-and-son pairing the Keningtons, building a very attractive riding truck and tender that many readers should find of use.

I have to admit to particularly enjoying laying out Harry's tales from the Fairbourne Railway workshop this month – despite him sending more than 40 photos with his latest missive! Judging by the feedback I get from readers these are some of the most popular pages in the magazine, and this month you could almost hear the choice language that must have resounded around the workshop as a set of wheels contrived to foil Harry's efforts to turn them into something useful.

Thanks to the readers who have responded to my recent requests for features – the feature file is now looking rather more healthy, particularly with railway loco builds, which are of course perennially popular. We could do with some more workshop tool pieces however, if anyone feels that way inclined...

Andrew Charman – Editor

The December issue of **Engineering in Miniature** publishes on 16th November

Editor: Andrew Charman Technical Editor: Harry Billmore

Email: editor@engineeringinminiature.co.uk Tel: 01938 810592

Editorial address: 12 Maes Gwyn, Llanfair Caereinion, Powys, SY21 0BD

Web: www.engineeringinminiature.co.uk

Facebook: www.facebook.com/engineeringinminiature

FOR SUBSCRIPTION QUERIES call 01778 392465 – the editor does not handle subscriptions.

Publisher: Steve Cole
Email: stevec@warnersgroup.co.uk
Design & Production: Andrew Charman

Advertising manager: Bev Machin
Tel: 01778 392055
Email: bevm@warnersgroup.co.uk
Advertising design: Amie Carter
Email: amiec@warnersgroup.co.uk
Ad production: Allison Mould
Tel: 01778 395002
Email: allison.mould@warnersgroup.co.uk
Marketing manager: Carly Dudge
Tel: 01778 391440
Email: carlyd@warnersgroup.co.uk

Published monthly by Warners Group Publications Plc,
The Maltings, West Street, Bourne,
Lincolnshire PE10 9PH.

Articles: The Editor is pleased to consider contributions for publication in *Engineering in Miniature*. Please contact us to discuss your work.
© Publishers & Contributors
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the Publishers. This periodical is sold subject to the following conditions; that it shall not without the written consent

of the publishers be lent, resold, hired out, or otherwise disposed of by way of trade at a price in excess of the special recommended maximum price, and that it shall not be lent, resold, hired out, or otherwise disposed of in mutilated condition, or in any unauthorised cover by way of trade, or affixed to as part of any publication or advertising, literary or pictorial whatsoever.

Whilst every care is taken to avoid mistakes in the content of this magazine the publishers cannot be held liable for any errors however arising. The reader, in pursuing construction and operation of any product, should exercise great care at all times and must accept that safety is their responsibility.

Engineering in Miniature – ISSN 0955 7644

WR

ALLOYS & SOLDERS



**Casting Alloys, Solder Wires
Blow Pipe Solders**



T: 0121 508 6792 E: info@william-rowland.com

www.williamrowlandshop.com

WILLIAM ROWLAND

MARKET LEADER IN LARGE
SCALE, READY-TO-RUN,
LIVE STEAM

25 MODELS ONLY
OVER 50% ALREADY SOLD!

LNER A3 CLASS FOR 5" GAUGE

Order in the name and livery of your choice



The LNER A3

The world famous "Flying Scotsman" is probably the name that most readily comes to mind out of the 78 A3's that saw service on Britain's railways.

All locomotives received double chimneys by 1960 and subsequently most were fitted with German style "trough" smoke deflectors following complaints from drivers in respect to poor visibility. 4472 was the first steam locomotive to be officially recorded at 100 mph.



Also available with double chimney and smoke deflectors, in the livery of your choice.

The A3's saw service over most parts of the LNER system. The final locomotive, 60052 was withdrawn in 1966. Before the war the A3's were painted in LNER green livery, but carried unlined black 1939-45. They were re-painted in LNER green following the war. A majority of locomotives then carried BR blue livery before all were re-painted in BR brunswick green with orange/black lining. Early, or later, lion crests were carried according to period.

Request your free brochure today

Request your free brochure today by e-mail, telephone, or by returning the coupon opposite.

Telephone: **01327 705 259**

E-mail: **info@silvercrestmodels.co.uk**

Find more information at
www.silvercrestmodels.co.uk

The Model

This coal-fired model features three cylinders and outside Walschaerts valve gear. The copper boiler is silver soldered and hydraulically tested to twice working pressure, CE and UKCA marked. The body casing is assembled using etched brass sheet.

This development of this model has been supervised by our award winning professional engineer Mike Pavie and the batch is being built by the same manufacturer who supplied our much acclaimed Coronation Class locomotive.

The A3 Class model is supplied fully built and ready-to-run, painted and lined in either LNER green, or BR lined green. We will supply your choice of nameplate. As testament to our confidence in the quality of this model each locomotive will be supplied with a full 12 months warranty. All models will be subject to a pre-delivery inspection and boiler test. Our after sales service is considered by customers to be second-to-none.

Summary Specification

- Coal-fired live steam
- Silver soldered copper boiler
- Reverser
- Working drain cocks
- Stainless steel motion
- Safety valves
- 3 cylinders
- Boiler feed by axle pump, injector, hand pump
- Bronze cylinders with stainless steel pistons and valves
- Sprung axle boxes with needle roller bearings
- Piston valves
- Mechanical lubricator
- Outside Walschaerts valve gear
- Multi-element superheater
- Etched brass bodywork
- Choice of liveries
- Choice of nameplate
- Fully painted and lined
- Ready-to-run

Approx Dimensions:

- Length 74"
- Width 9.5"
- Height 14"
- Weight 105 kg

£14,995.00
+ p&p

Limited Availability

We have reserved factory capacity for the manufacture of just 25 models. We may be able to increase this a little, but cannot guarantee additional stock availability. Once the batch is completed it is unlikely we will commission further production of the A3 Class for a number of years, if at all. The model is scheduled to complete its build in April 2023.

Free p&p worth £195.00 if you order early.

We will offer free p&p on any order placed within 28 days as a thank you for your early order.

Delivery and Payment

The order book is now open and you can reserve your model now for a deposit of just £1,995.00.

We will request an interim payment of £5,000 in November 2022 as the build of your model progresses, a further stage payment of £5,000 in January 2023 and a final payment of £3,000 on build completion.

Please send, without obligation, my free 5" gauge "A3 Class" brochure.

Name: _____

Address: _____

Post Code: _____

Please send to: Silver Crest Models Limited
18 Cottesbrooke Park, Heartlands Business Park,
Daventry, Northamptonshire NN11 8YL

Company registered number 7425348



**FREE
BROCHURE
REQUEST FORM**

EIM

A North London Tank in 5-inch gauge

Andrew continues his project to fulfil a long-held aim to have a model locomotive with local connections, doing a lot of heating this month as he assembles the boiler.

BY ANDREW BROCK – Part Three of a short series

Summer 2022 has been spent completing the boiler and smokebox for my 5-inch gauge North London Tank (bought used as a loosely assembled chassis) while also doing some painting as the weather has allowed. As I start these words at the beginning of September, I have just completed fabricating the chimney and smokebox shell, with the front door and rivet detailing to finish. A summary of the last three months...

Next on the to-do list for the boiler was to solder the dome bush, manifold/safety valve bushes and the two clack bushes to the barrel section. For this job I used higher temperature 'C4' (now Silver-Flo 24) solder I had a few sticks of very old C4 in stock.

The flux mix was the same Thessco 'Y' as per all the other soldered joints and I religiously made a fresh mix for each job. Ideally this wants to be a bit thicker than double cream so it can be applied to each joint/surface but not run off like water.

C4 solder has an approximate melting temperature of 725 degrees centigrade, so a few fire bricks around the barrel section to keep the heat in are essential. A large 'cyclone' burner was used to melt the solder from inside to outside and these burners are ideal for internal heats. Half an hour later a successful first heat was ticked off – time to put the boiler in the 10:1 dilute sulphuric acid for a couple of hours to clean off while I packed away

some of soldering tools (Photo 18).

Next, the flanged throatplate was fitted to the barrel section and again soldered using the higher-temperature C4. I was really pleased with this heat and the nicely soldered joint (Photo 19). Then it was back in the sulphuric for another 'pickle' to clean off the residue carbon and flux.

Putting the barrel section to one side for now, I next soldered the crown stay to the top of the firebox wrapper. The stay was fabricated from 10swg copper sheet and formed from two back-to-back 'L's, which are riveted together. These make an upside down 'T', which in turn is soldered to the top of the wrapper.

This, my last use of the C4 solder for now, was 90 per cent successful. After cleaning I noticed a little more solder was needed in a couple of places, which I added with lower (620 centigrade) temperature Easi-Flo 2 (now Silver-Flo 55) solder during a later heat.

With the higher-temperature heats done for now, I moved on to the firebox tubeplate, wrapper and tubes. This is one of my favourite heats – it is largely a heat-up and watch the solder run job, before adding a little more around the seam between the wrapper and tubeplate flange. The wrapper and tubeplate were already a reasonable fit but to make doubly sure, I secured them together using a number of 1/8-inch copper rivets so



"A couple of curious neighbours looked on while I undertook this heat – no pressure..."

they did not part company when hot!

The tubes are all 1/2-inch outside diameter x 18swg, with a 12 thou' x 3/16-inch long step turned on each end so they sit in the tubeplate holes and are not tempted to fall through! The holes in the tubeplate are reamed 12mm and each has four notches cut at roughly 90 degrees using a 3-square file to help the solder flow from outside to inside (Photo 20). This was a trick I learnt from the late Bob Youldon, who was a superb lifelong model engineer at our club.

Under observation

Several sticks of Easi-Flo 2 were then wrapped around a 7/16-inch steel bar to form a coil and cut into rings which I lay around each tube, warmed up and watched 'em melt! A couple of curious neighbours looked on as I undertook this heat – no pressure!

Like the aforementioned crown stay, this heat was 90 per cent successful, with just a little more





solder required on the seam joint at a later heat but all the tube solder ran superbly (**Photo 21**).

Now with the barrel and firebox sections ready, they were joined together and so the heats needed to be that bit harder. A lot of thought and preparation went into fitting the stays and foundation ring, and there was a lot at stake. Attaching these two pieces, which included temporarily fitting the front tubeplate into the barrel to support the tubes, is not easy and by far my least favourite heats!

The stays are all $\frac{3}{16}$ -inch x 1-inch long copper rivets, head on the inside, plain through the firebox wrapper and loosely threaded 2BA through the outer wrapper to hold them during soldering. The plain hole in the firebox was 4.9mm, while the loose tapping size through the outer wrapper was 4.3mm. This gives an approximate 7-thou' engagement of threads, enough to stop movement and also enough to give the solder the best chance of penetrating through.

The heads of the rivets are each turned down from their original 0.330-inch outside diameter to $\frac{1}{4}$ -inch. This flat ledge is used to place a 'cir-clip' ring of Easi-Flo 2 around, which the original domed head and sharp edge would not easily support. The rivets are threaded in a clamp on the lathe – a tedious task for nearly 100 of them! They were one of those cold or wet weather day jobs when the best place to be is inside the workshop!

Too hot to handle

More rings of solder were prepared (**Photo 22**) for the stays and I decided to do the inside of one side and the outside of the other at the same time, so as not to move the structure when hot! This worked well but did require a 'pickle' between heats – no matter though and at this stage I was up to two gas burners and plenty of fire bricks to keep the heat where it was needed. In between work on his 14xx tank, also being serialised in **EIM**, Sam Ridley helped with all the heats from here – I hope he learnt a lot about boiler making at the same time...

With the crown rod stays, side

stays and throatplate stays soldered in after three heats, I next fitted the front and sides of the foundation ring. Each is machined from $\frac{3}{8}$ -inch square copper bar, they are nominally $\frac{3}{8}$ -inch x $\frac{5}{16}$ -inch and fitted to suit.

Unlike on my previous Railmotor I was determined not to have to use filler shims in the corners where the foundation rings meet the rounded flanged corners. With time spent carefully shaping the copper bar I avoided this and hopefully produced a resultant tighter joint. The foundation ring soldering appeared to go well – more solder flowed through the joints than was probably necessary but there was good penetration.

With the firebox end now well on the way, I soldered in the front tubeplate, my second favourite heat. An overnight pickle, more rings of Easi-Flo 2, a good dose of 'Thessco Y' and we were off and running.

This one I would give an 8 out of 10 – all the soldering went well, except for one tube, which inexplicably lost its ring of solder. To this day I cannot say when it fell off or where it went, but once pickled I discovered that tube end was completely devoid of solder! Some head scratching ensued for a few seconds, before another, this time successful heat – tick off the front end.

In theory there were three more heats to go at this stage. Firstly the firehole ring into the rear firebox plate, then that firebox plate into the

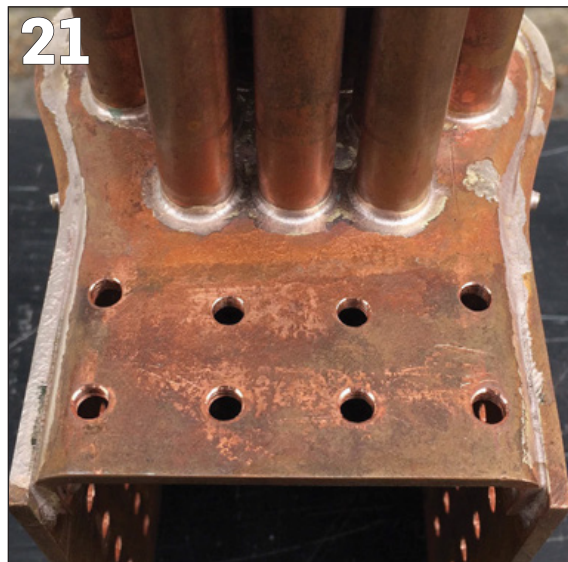


PHOTO 18:

Gas burners, solder holders, gloves and flux for the soldering marathon.

PHOTO 19:

Throatplate fixed into the barrel – a nice clean joint.

PHOTO 20:

Notched holes in the tubeplates.

PHOTO 21:

The tubes and firebox tubeplate soldered into the firebox wrapper

PHOTO 22:

Preparing rings of solder for the firebox stays.

Photos by the author

firebox wrapper, before the backhead and rear foundation ring into the outer wrapper. Those three heats became seven, more of which later.

The firehole ring is a short stub of $1\frac{3}{8}$ -inch x 10swg copper tube, turned down to $1\frac{1}{4}$ -inch x $\frac{3}{16}$ -inch long at each end and with a 'check to place' thick section in the middle, which needs to be exactly the same distance between the outside of the firebox plate and the inside of the backhead. This distance was 0.330-inch and with the ring ready, this was C4 soldered into a carefully drilled and filed hole in the firebox plate. I scored 10 out of 10 for this mini-heat and now the firebox plate could be fixed into the firebox wrapper...

With so much copper now present, each heat became more involved, particularly with solder close by which was ready to melt again if overheated. The firebox plate went into its wrapper with relative ease using Easi-Flo 2 with just one small area which I decided to tackle again when the boiler was hot for the backhead heat (**Photo 23**).

After several days of fitting to get the backhead and rear foundation ring into place, an early afternoon was set aside for what could be the final heat. ▶



23



Backhead into wrapper, foundation ring rear and a couple of touching-up jobs should have been it. As it turned out the bushes, seam and foundation ring proved too much in the time the flux would last and after about 25 minutes a halt was called. Back in the pickle, time spent cleaning and then a couple of days later, and two more heats, the job was in theory done...

I spent a day on the lathe making a batch of boiler bungs from brass hexagon and with a 2.5mm section silicone O-ring as a seal. I had done the same when repairing the Railmotor boiler and boy do the O-rings save time if you have to take them in and out a few times.

Beating the beads

The first hydraulic test revealed a couple of beads at the top of the throatplate where it meets the sides of the barrel. Because this had been previously soldered with C4, I could now go back in with Easi-Flo 2 to seal the joints with over 100 degrees centigrade of safety margin.

This heat was successful, but in

turn a small leak on the corner of the foundation ring had appeared. With both caulked, a 180psi shell test looked good and I was happy enough to give the stays a trim and to clean up the rest of the structure. I am quite pleased with the end result and after the best part of three months, glad to move on to something other than boiler work.

When the weather was warm enough, I decided to paint the buffer beams and touch in the frames with red. I had been putting off these jobs but I am determined not to do a Railmotor and steam the North London Tank before the chassis and smokebox are painted. I do not intend to take her apart again any time soon, unless I am forced to do so! The painting was a nice sideline that could be done early on the warmer days and at the same time the remainder of the smokebox fabrication got underway...

In my last article, the smokebox front and rear plates had been fitted to the brass cross-stretcher and then to the chassis to give a datum when building the boiler. With the boiler now finished and fitting in the

"After several attempts they fitted reasonably well and with the main radius largely intact from the brutality..."

PHOTO 23:

The boiler with soldering close to being completed, less the backhead.

PHOTO 24:

The inside of the smokebox.

PHOTO 25:

Smokebox fitted and awaiting finishing touches – note the painted buffer beams, a warm weather task.

PHOTO 26:

The model meets its full-size inspiration on a visit to the Bluebell Railway.

PHOTO 27:

Another outing, to a coffee morning at the village church.

chassis, I undertook the remaining jobs on the smokebox.

The first was to form the outer wrapper and for this I used an offcut of 18swg brass sheet. Once it had been cut to three inches wide, I rolled said sheet to roughly the right 2⁹/₁₆-inch radius before carefully opening out the bottom of the sides to follow the profile of the smokebox ends.

This was tricky, involving a large steel bar of around 1¹/₄-inch diameter and a vice. Neither side was right first time but after several attempts they fitted reasonably well and with the main radius largely intact from the brutality! Whilst in sheet mode, I also formed the small doubling plate which the chimney base sits on. A fairly quick cut, file and roll job this one...

Next, four 5¹/₁₆-inch square steel bars were turned and drilled to fit between the ends of the smokebox. These form ribs which are attached to the ends and in turn the outer wrapper is attached to them by means of 8BA threaded brass rivets (Photo 24).

Chimney making

With the basic shell up together, I took a break and made the chimney. This is a three-piece fabrication using 1¹/₂-inch by 10swg brass tube for the main column and two pieces of 2-inch diameter solid brass for the base and top cap (more offcuts used up...).

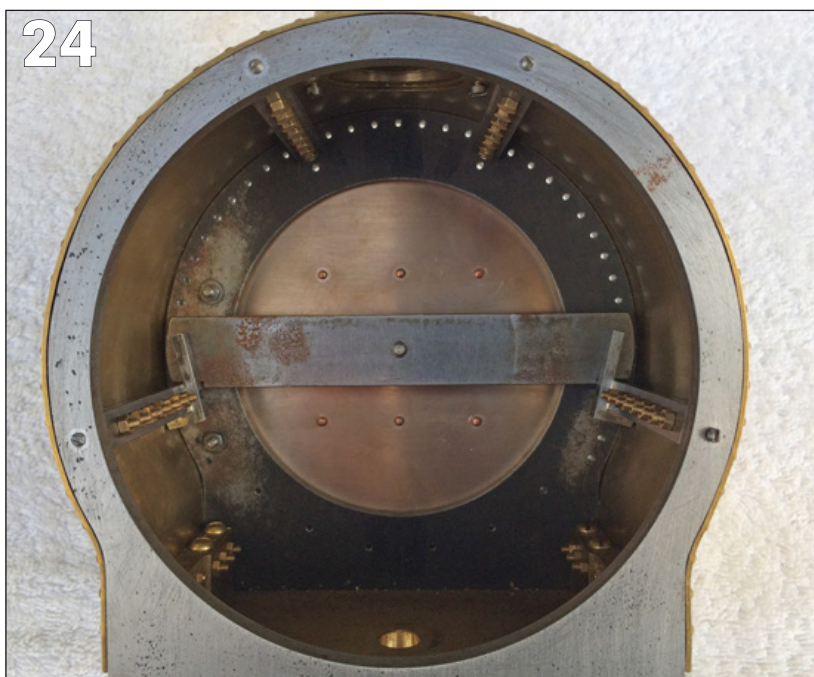
The main column has two external 3-degree tapers; one which starts at the base and up to the bottom of the top cap and another which the top cap sits over. This involved a bit of taper turning on the Myford, which I had not done for some time.

The base was bored from solid and made a nice tight fit over the base of the column tube. The radii on the base were all hand filed and emery cloth finished, and these took a couple of days work alone. Ditto the top cap, which was likewise bored from solid, internally taper-turned to match the top of the column tube and then finished by file and emery cloth.

The chimney was then carefully offered up to the top of the smokebox and secured from the inside by two 8BA stainless screws. I could then mark and file the hole in the top of the smokebox wrapper.

By the second week of September, the rivet detailing on the smokebox wrapper was completed, the process having taken the best part of another week. It was back to basics with this job and I broke out the dial callipers, manual punch and needle files. The result was 100-odd holes, all divided as best I could around the periphery – time to annoy the neighbours and bash over some 1¹/₁₆-inch brass rivets! This was followed by careful use of the Dremel to clean the inside of the

24



riveted material and then a final clean with emery cloth to finish.

Now we are into the third week of September and the smokebox door, hinges and such have been fabricated. For years I wondered what I would do with a slab of just over ½-inch thick by 5-inch diameter brass and the answer now sits on the front of the locomotive, and with the remains in a Hovis bread bag next to the lathe! One slab of brass was turned and carefully shaped into a smokebox door.

The brass was drilled and reamed to 5/32-inch then mounted to a mild-steel mandrel in the outside three-jaw chuck. On that mandrel, the outside diameter of 4 1/16-inch was turned, the thickness reduced and the dome shape carefully stepped out 5 thou' in by 30 thou' across and then finished by file and emery cloth. The latter job took some time to calculate and complete, but the result looks okay.

With the door bored and shaped, I fabricated the two hinge blocks from 3/16-inch square steel, with a plain section and 6BA thread on one end to slide through the smokebox front plate and secured with a nut on the inside. A 3/32-inch hole was drilled vertically to accept the stainless hinge pin, which I made from a section of stainless-steel welding rod that was kicking about!

Naval inspiration

Taking inspiration from a superb Merchant Navy loco at our club, the cross-bar and locking handles are threaded, rather than with a slot and 'T', to clamp the smokebox door shut. The cross-bar was an odd offcut of 20mm by 4.5mm bright mild steel, with a central M4 threaded hole to accept the locking handles. The cross-bar sits on two of the ribs inside the smokebox and required about 40 thou' off the bottom of each end to centralise vertically.

The locking handles are made from ¼-inch stainless steel, one piece with a 3/16-inch thick head, turned down to 3/32-inch by 1 ¼-inches long and threaded M4 on the end to screw



"For years I wondered what I would do with a slab of just over ½-inch thick by 5-inch diameter brass and the answer now sits on the front of the locomotive..."

into the cross-bar. The other is a simple ¼-inch diameter by 3/16-inch thick washer with a 5/32-inch reamed hole through the centre.

The handles themselves are a bit more of the aforementioned welding rod, each 1-inch long and threaded 7BA to screw into the two stainless pieces above, which were cross-drilled and internally threaded 7BA to accept.

With the door now attached and centralised about the smokebox front, I could mark and fabricate the hinges themselves. To start, I made two pieces of brass, 3/16-inch diameter by 3/16-inch long and drilled 2.4mm. These were to be silver soldered to the hinges themselves to attach to the hinge pin.

I had planned to use 3/16-inch by 1/16-inch brass for the hinges, but the piece I had turned out to be too brittle, even after annealing, so with two hours or so wasted I turned to copper instead. Two over-length 3/16-inch wide pieces were cut and machined from a ½-inch by 1/16-inch copper section and then carefully silver soldered to the brass pieces above.

The hinges could now be offered up to the door and marked for drilling. The door was then removed from the smokebox, placed back on its mandrel and attached to the dividing

head on the Myford to drill the 10 hinge holes, as well as four holes around the centre for dummy rivets and two further holes on the left-hand side for an external door handle.

As I write this, the hinges have been secured to the smokebox door by means of copper rivets and I am now in the process of filing back and cleaning. Left to do on the smokebox is the rivet detailing, handrail stanchions and door handle, before etching priming and black painting can commence (Photo 25).

On the road

During the past couple of months, the locomotive has also been out and about to visit its big relation at the Bluebell Railway during the line's 'Road Meets Rail' event (Photo 26) and across the road at the village church during a coffee morning (Photo 27). Both were very good fun and it is nice to support these events and to promote the hobby at the same time. To be continued... **EIM**

■ Parts 1 and 2 of this feature appeared in the March and July 2022 editions of **EIM**. Readers can download a digital back issue or order a printed copy from www.world-of-railways.co.uk/store/back-issues/engineering-in-miniature



WHAT IS AVAXHOME?

AVAXHOME-

the biggest Internet portal,
providing you various content:
brand new books, trending movies,
fresh magazines, hot games,
recent software, latest music releases.

Unlimited satisfaction one low price

Cheap constant access to piping hot media

Protect your downloadings from Big brother

Safer, than torrent-trackers

18 years of seamless operation and our users' satisfaction

All languages

Brand new content

One site



AVXLIVE ICU

AvaxHome - Your End Place

We have everything for all of your needs. Just open <https://avxlive.icu>

Shrewsbury Steam Rally

John sought out the miniatures at one of the UK's top-five steam rallies, being held for the first time in three years over the August bank holiday weekend.

BY JOHN ARROWSMITH



It was pleasing to be able to attend a full-size steam gathering at last after the disruption of Covid and the Onslow park site of Shrewsbury Steam Rally was bathed in early morning sunshine when I arrived.

This large site was already getting into gear for the anticipated busy time ahead. I like to see early preparations with large tins of Brasso to the fore and traction engine minders busily polishing everything that needs to be done – I never stand too close in case they include me in their work!

The comprehensive programme listed more than 70 full-size traction engines and rollers along with around 15 locally built Sentinel steam lorries. A couple of full-size Stanley Steam cars added to the attraction while there were plenty of miniature steam traction engines and lorries to complete the picture for the very large crowds, which by this time were streaming through the entrance gates.

The Wolverhampton & District ME had laid out its double ground-level track (Photo 1) to provide a decent ride for the many youngsters on the rally site, with a couple of 7¼-inch gauge steam locos and an electric loco providing motive power.

Wide-ranging attraction

Of course these events cover a great deal more than just the steam vehicles – there was a full complement of many other forms of transport and working vehicles on show along with lots of demonstrations where visitors could get up close and see for themselves how they all worked.

In these green environmentally friendly days working horses are now making a strong comeback in areas such as forestry and it was good to see these lovely animals demonstrating their prowess on the plough as well.



HEADING:

Shrewsbury is a big rally – just part of the main arena gathering during the Grand Parade.

PHOTO 1: The ground level passenger track operated by Wolverhampton & DME in action.

PHOTO 2:

Early morning and this Burrell Showman's engine is being prepared for the day's work.

PHOTO 3: A Fowler crane engine owned by the Crane family – of course...

Photos by the author

As I have said many times these rallies always seem to attract a large number of younger people and they take on all sorts of duties. I met a young man, Albert Stephenson, who had only got married three weeks ago and was organiser for the Miniature section of the rally. He had done a great job in gathering 22 different traction engines and lorries and it was a great pleasure talking to him and his

friends about model engineering in general. They had a great sense of humour and had got together as a group to call themselves the 'Steam Wallys' to have an identity within the road steam world.

I include a few pictures of the 'big stuff' which is all part of the day. Just alongside the fairground was a Burrell showman's engine being prepared, smoke just rising from the chimney





and polishers busy on the brass work. This engine is now 102 years old and still going strong (Photo 2). In superb condition it was working as intended driving the fairground rides.

Another big loco which many readers will know is the Fowler crane engine (Photo 3) built in 1929, purchased by Len Crane in 1969 and remaining in the family ownership ever since. Len Crane was a fine model engineer as well and regularly took part in the Midlands Exhibition.

Boasting a long history is the rare Foden 7nhp colonial traction engine built in 1907 and working in

Tasmania until 1995 when it returned to the UK and was bought by the present owner Richard Hesbrook as a kit of parts (Photo 4).

Moving onto the miniatures I came across a real newcomer to the hobby – Andrew Lake from Chester was with his two sons operating and driving a nice Foden Steam lorry. It has been a steep learning curve for the family who only bought the engine in January this year and as pictured on the cover of this issue 7-year old Connor has really taken to the task and enjoys every minute.

Also on show was a 4-inch scale

PHOTO 4: The Foden Colonial engine owned by Richard Hesbrook dates from around 1907.

PHOTO 5: A 4-inch Clayton & Shuttleworth agricultural engine owned by Peter Crook.

PHOTO 6: The Hanmer family's pair of 4-inch scale Garrett engines.

PHOTO 7: Dave Tunstall tends to his 4-inch scale Burrell.

PHOTO 8: This 6-inch scale Garrett 4cd Tractor is owned by Steve Bowdidge.

Clayton and Shuttleworth agricultural engine (Photo 5), built in 2002. Owner Peter Crook from Harrogate bought it in 2018 in a very poor state and with his son has spent much time on repairs such as new gears and fixing leaks. It is now in working condition, ready for a coat of paint.

Versatile engines

A pair of good-looking 4-inch scale Garretts owned by members of the Hanmer family from Shrewsbury looked good in the sunshine (Photo 6). One is a standard single cylinder two-speed engine and the other was a Roller, unusual in the fact that it can be converted to a standard traction engine with rubber tyred wheels.

Next door was a fine-looking 4-inch Burrell agricultural engine (Photo 7), built by Chris Webb and now owned by Dave Tunstall who hails from Welshpool and like our esteemed editor is also a volunteer on the Wexhpool & Llanfair Light Railway.

A very nice brand-new 6-inch scale Garrett 4 cd tractor was next in line (Photo 8) – only finished this year it is owned by Steve Bowdidge and looked a powerful machine.

Section organiser Albert Stephenson had his nice little 4-inch





"All could see and enjoy some aspect of a working life that is no more..."

Ruston Proctor in steam (Photo 9). This engine was bought by his grandfather when Albert was 10 so he could learn about engineering and to encourage him to get involved. Well he has certainly done that.

I mentioned the Wolverhampton Society of Model Engineers ground-level 7¼-inch gauge track. This popular feature can run two trains at the same time with a crossover to enable locos to be used on either track.

The steam locos were an 0-6-0 Sweet William and a 0-4-2 tank with outside valve gear (Photo 10). Both were fine examples and working well. The electric loco, an excellent BR Brush Type 2 Class 31, was handling the operations without difficulty. The club itself has an excellent site in Baggeridge Park near Wombourne.

Shrewsbury was the home town of the famous Sentinel Waggon works and no rally here would be complete without a range of prototypes and

miniatures. The full-size machines featured numerous prototypes, far too many to list here but the line-up was an impressive sight (Photo 11).

A display of miniatures was adjacent to the Sentinel stand and some of these were shown on the flat bed of a full-size lorry (Photo 12-13). The model displayed under construction is by Norman Smedley, a former editor of EIM. It will be finished as a six-wheel articulated Sentinel Super steam wagon in 3-inch scale with a works number of 6305.

The show always features a Grand Parade of the large steam vehicles and this year I don't quite know how they managed to get so many engines into the parade ring, they were everywhere and the traditional 'Whistle Up' produced an amazing cacophony of sound quite unlike any other.

Of course the show contained all the usual features far too numerous to detail here such as tractor -pulling, the

grand parade of working horses, an unusual parade of old perambulators with some unique designs, farm implements and tractors, so many different types of stationary engines, military vehicles and armaments.

Motor vehicles pre and post-war and were displayed, HGVs of every description, plus demonstrations of threshing, bailing and cider making with original presses that visitors could sample, conducted in a happy and informative way that all could see and enjoy some aspect of a working life that is no more.

Cost-conscious

A point I would like to make here is concerning the cost of food and drinks, a topic of conversation concerning the extortionate prices being charged at other similar events. Everything was very reasonably priced so I think the organisers had done a splendid job in keeping the overall costs within a normal day-out budget.

The Shrewsbury Rally is a first-class event very well organised and laid out, an excellent day out with like-minded people – the approachability of all the engine owners and assistants was great. They all loved to talk about their engines and this gave the show something extra which when the current national problems are considered, helps to take the stress away for a short time. Thanks to all I spoke to and the organisers for allowing me to attend, I thoroughly enjoyed myself. **EIM**

PHOTO 9:

Rally section organiser Albert Stephenson owns this 4-inch scale Ruston Proctor engine.

PHOTO 10:

The 7¼-inch 0-4-2 awaits its turn to be steamed on the Wolverhampton passenger track.

PHOTO 11:

A good line up of full-size Sentinel steam lorries, built on the other side of Shrewsbury to the rally site.

PHOTO 12:

A pair of fine model Sentinels displayed on the flat bed of their full-size inspiration.

PHOTO 13:

Norman Smedley is building what will be a superb example of a Sentinel Six steam lorry in 3-inch scale.



Simplex complexities – under pressure?

Harry's adventures in the workshop of the 12 $\frac{1}{4}$ -inch gauge Fairbourne Railway this month see him dealing with pressing problems that would try the patience of a saint...

BY HARRY BILLMORE

I'll begin this month's report into the various successes, failures and interesting problems in the workshop of the Fairbourne Miniature Railway with the ongoing investigation into the 6-inch scale North Wales Narrow Gauge Railway-style Hunslet 0-6-2ST 'Beddgelert' ahead of its restoration. This is turning into an even bigger job that I had feared as an MPI (magnetic particle inspection) survey of the welds on the axles of the loco has identified a series of severe cracks in the leading and trailing driving wheelsets and both bogie wheelsets,

I believe this is due to the side load on the driving wheelsets (the centre drivers are flangeless and are not cracked), combined with poor weld preparation and post weld treatment. The cracks run almost the entire diameter of the axles on the border of the axle to weld section, indicating a brittle part of the weld where the filler material and the axle have melted together. This means at least we need replacement axles, as I intend to reuse the wheels if at all possible! A similar procedure to that followed when I replaced the axles on our Darjeeling Himalayan loco 'Sherpa' last winter (EIM June 2022) will be needed.

Flexi-frame

Combined with this, the frames themselves have the structural rigidity of a wet noodle – from the flex side to side where the rear frame section (of a thinner material) is bolted to the frame section where the driving wheels are located is extreme. A gentle lean will induce a 20mm flex, this is exacerbated by a cut-out to allow access to a washout plug in the thinner frame section.

I am exploring options to improve this situation, my current plan is to put 6mm plate running boards on and weld them to the chassis.

Thankfully the entire rear bogie is on its way to our friends at the Littlehampton Miniature Railway who have very kindly offered to rebuild it – this is a continuation of a very fruitful relationship between the two railways which has seen locomotives

and crews travel in both directions.

All of the above on Beddgelert is a problem for future me, as current me is having different issues. The Simplex that I described the regauging of in the September issue revealed a habit of riding up out of the track due to its wide flanges. So I removed the wheel sets and took them over to the Kirklees Light Railway in Yorkshire – the KLR has a lathe large enough to swing the wheels.

Unfortunately on the fourth pass the chilled-iron wheels decided that they'd had enough and pinged off a couple of sections from the back of the



PHOTO 1: The driving wheelset of 'Beddgelert', with a crack (highlighted) all the way around through the weld.

PHOTO 2: Beddgelert's rear bogie and cab footwell loaded up for its trip to Littlehampton for restoration.

PHOTO 3: The Simplex wheel showing the chunks taken from the flange while turning on the lathe.

PHOTO 4: The pinged off chunks, one of which nicely grazed Harry's arm...

All photos by the author





PHOTO 5: New wheel blanks for the Simplex, each weighing 120kg.

PHOTO 6: Elderly, slightly repurposed and repositioned press after first wheel removed.

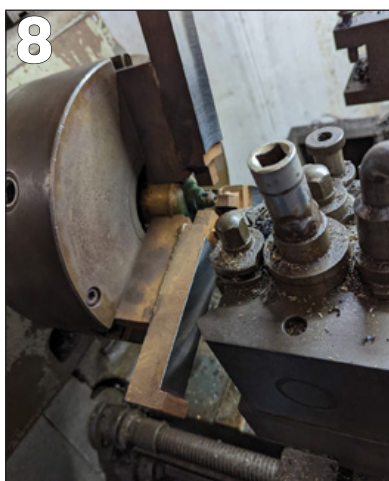


PHOTO 7: Machining chuck jaws to suit blank size, here thinning down to allow blank to drop into the gap bed on the lathe.

PHOTO 8: The machined jaws, note round bit of brass clamped in centre to ensure jaws were concentric when clamped up.



PHOTO 9: Small relief put in where clamping section meets extension, so any flashing or swarf on a lip does not hold workpiece off the jaws.

PHOTO 10: Loading the first blank using the overhead crane.

PHOTO 11: Just enough clearance on the bed.

flange, while absolutely mangling the tip I was using. This unfortunately makes the wheel useless and the hard brittle surface of said wheels means it's not worth risking turning the other ones just to have the same thing happen. This did mean a wasted trip, apart from being able to pick up my 7¼-inch 'Holmside' loco that I inherited in 2020 but haven't had the chance to do anything with so it needs a little bit of re-commissioning!

Drawing a blank

So I ordered new blanks for the Simplex wheels – I decided to make them smaller, but only just small enough to fit on my wheel lathe in the workshop. This necessitated buying blanks that were ¾-inch too large in diameter to fit over the bed of the lathe as the next available size was ½-inch too small.

To fit them in the lathe I had to take the gap bed apart and then make up some large extended jaws for the three-jaw chuck. I could have mounted the blanks onto a faceplate and turned them that way, however the set-up time for each one would have been extremely excessive compared to making the jaw extensions! These were simply bits of bar welded onto some spare jaws that have been kicking around the workshop for ages, then machined on the inside to take the blanks.

When machining the extensions I clamped a round piece of brass into the middle of the jaws to ensure they could not move on the scroll and to reduce chatter.

After the preparation was done I could then machine the diameter down to the correct size to fit over the bed then face the blank and put a weight-relieving cut into the face – this is purely to save my back when manipulating the wheelsets on the floor for assembling on the press.

I drilled out the centre to the largest size we have then set the press up on the floor to remove the first wheel from its axle. I did them one at



a time so that I didn't have to think too hard about setting up the back-to-back and the position of the wheels on the axles.

The first wheel came off fine with about 15 tons of force, I then measured the axle and the bore of the wheel to get to a sensible press-fit for the new wheel internal diameter.

Having bored the wheel out I turned it around in the chuck and machined the rest of the outer diameter and the outer face of the wheel along with removing most of the material for the profile. I did not want to machine the profile completely until the wheels were on the axle as it can cause issues with true running and it would have been quite difficult to hold.

De-pressing

I then came to pressing the new wheel onto the axle, it was all going well until about two thirds of the way on when it stopped moving, even at the top rating of the press (20 tons). This then necessitated stripping the press off of the wheelset, turning said set around, reassembling the press and then pressing off the wheel. Unfortunately I got to about 10 tons on the press when one of the top beams bent, quite impressively...

I then set about rebuilding the press with significantly beefier material I had lying around, left over from a wagon build last year. With this done I started pressing the



PHOTO 12: Machining outer diameter, rpm set at 250 but surface speed at that diameter allowed for aggressive cuts. Note smoking pile of blue chips, workpiece is barely off cold.

PHOTO 13: Measuring bore of pressed-off wheel to check against reading from the axle.

PHOTO 14: Dial indicator used to get the bore correct for the press fit on the axle.

PHOTO 15: Weight-relieving inset was put in to save a little bit of backache!

PHOTO 16: Having turned blank around machining lip off produced large rings of swarf. Never be tempted to remove these by hand, they are like razors!

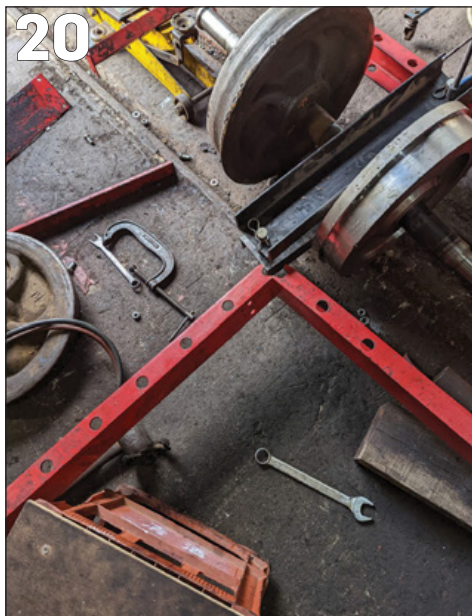
PHOTO 17: Pressing new wheel blank on to correct back-to-back, this was first attempt....

PHOTO 18: ...bending the press due to uneven pressure being applied to each half of top brace, other side is still perfectly straight!

PHOTO 19: The still-straight one and the material to replace it, providing a significant strength improvement.



20



22



23



24



21



PHOTO 20: Result – the next weakest link, the upright, failed straight into Harry's shin...

PHOTO 21: Attempt number 4, this time the wheel picked up on the axle. Note the significantly beefier uprights and cross pieces.

PHOTO 22: Pick-up on the axle – time carefully polishing these out with emery cloth and also on the wheel finally allowed said wheel to go on!

PHOTO 23: Dual operation on the lathe, Harry was bored of watching it do its thing by this point...

PHOTO 24: The visible gap around the pin on the leading coupling rod of 'Russell'. This pin is supposed to be fixed in this rod.

PHOTO 25: Almost 1/8-inch gap underneath the rod cap (a) 25 which completely disappears when pressed up (b).

PHOTO 26: Vesconite bush in trailing coupling rod where pin to leading coupling rod fits. It has failed and is splitting after three seasons in traffic.

25a



25b



wheelset off again – I got to 20 tons and the upright of the press failed and bent out, smacking me in the shin.

Following a reasonably large amount of creative use of language I found some material to make new and better uprights with, before going home for the evening...

The next day a lot of cutting and drilling, followed by a bit of welding, resulted in a pair of new uprights, however because I had put the holes for the lower cross pieces in the middle of the new thicker material, it would now no longer fit over the old wheels – cue more creative language.

So, another strip down and rebuild and it all went together and fit nicely. The wheel came off to uncover a few spots where it had picked up on the axle – some quality time with emery cloth and careful filing sorted that out before the wheel was finally pressed into position. I used a couple of magnets and a steel rule to set the back-to-back as – easiest method I have come across when press-fitting this type of thing.

The second wheel proved a significantly easier job until it came to the point of pressing it on, when the long-suffering press ram finally gave out at about two tons of force. The press had apparently spent a good few years in the Fairbourne workshop and was secondhand when it came to us so it hasn't had a particularly easy life! I ordered a new 30-ton ram and moved onto the next job on my ever extending list while awaiting its arrival.

This was the initial investigation and strip down of the our Welsh Highland Railway Hunslet-style 2-6-4T 'Russell' which has had a cracked coupling rod and a very severe knock ever since I started at the railway. The investigation soon threw up a host of problems, from bearings that had turned in rod eyes and no longer ran on the correct part of the joint, to completely collapsed vesconite bearings, along with axlebox bearings with excessive wear from 2½ seasons in traffic.

Off-key

The biggest issue I discovered, however, was that the quartering for the cranks was set by a small 10mm long key on a small step on the axle, inboard of a taper-lock bush that fits into the outside of the crank. This is not how it was originally built, fitted in 2018 by one of my predecessors.

The fit of the key into the crank would accurately be described as loose, in that it allows approximately three degrees of movement on the crank before it locates. This was repeated on all the cranks so the quartering is approximate at best. I think that this has caused many of the



other issues with the vesconite bushes, although some of those issues are definitely due to poor fitment of the bearings into the rods.

I will be replacing all of these with bronze bearings this winter, along with quartering the cranks properly, re-machining the scored crankpins and coupling rods and machining correct spacers that do not require shims, plus a few other bits.

I will also be re-profiling the wheels as the rear drivers are badly worn, this is due to the rear bogie having no side control and therefore no steering effect on the engine. As result when the loco is going backwards the rear drivers take all of the side loading of cornering, which is considerable since they are located near the centre of the loco.

Just as the new press ram was delivered, the driver who was preparing our Lynton & Barnstaple-style 2-6-2T 'Yeo' for its day in service came up to me and said that he had ►

PHOTO 27: Trailing rod coming off the centre crank pin and leaving the vesconite bush behind.

PHOTO 28: Trailing bush also came out with no persuasion needed.

PHOTO 29: Scoring on the rod eye showing the bush has been turning in here rather than on the crank pin.

PHOTO 30: Grease hole in the vesconite at approximately 90 degrees to the grease nipple...

PHOTO 31: Back of driving crank showing taper lock bush and very short keyway, a very rattly fit on the key.

PHOTO 32: Key in question, about 6mm of its full width key engaged, but not good fit in axle or crank.

PHOTO 33: Vesconite axlebox after three seasons showing significant wear upwards.

PHOTO 34: Vesconite bush in left-hand trailing coupling rod, has completely failed and came out in three pieces with no effort.

PHOTO 35: Random shim on the end cap of one of the coupling rods, also showing the great issue with a railway on a beach, sand gets everywhere!



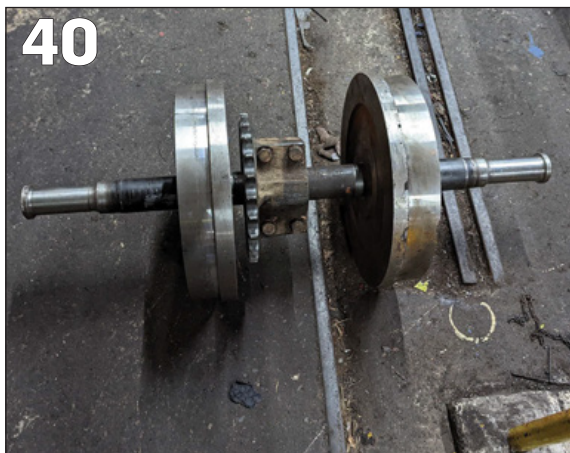
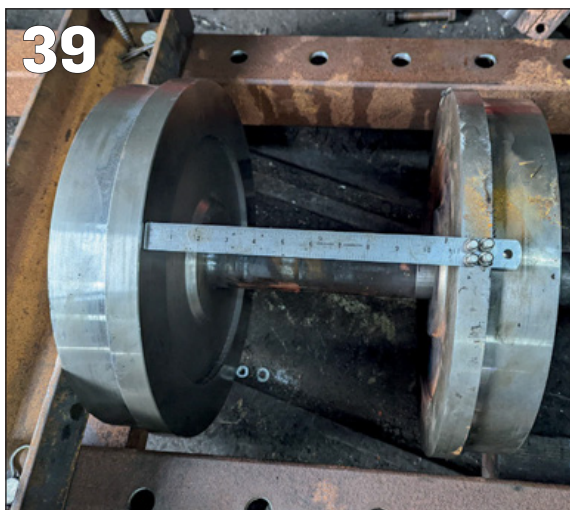
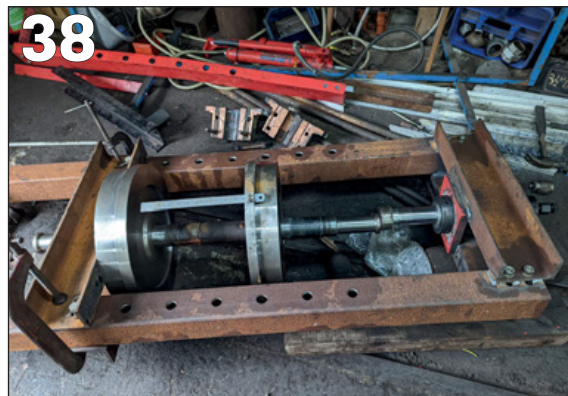
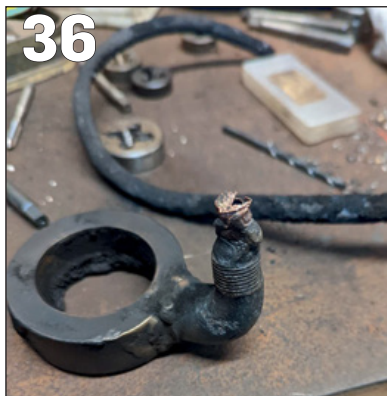


PHOTO 36: 'Yeo' threw a tantrum and broke its blower pipe in the morning...

PHOTO 37: A new piece of pipe fitted and it's good to go, the first train left on time and the crew were still able to drink their morning tea!

PHOTO 38: Upgraded press with its new ram easily pressing the second wheel onto the axle. A much more pleasant experience.

PHOTO 39: Using the magnets and ruler trick to get the back to back correct.

PHOTO 40: The wheelset ready for profiling.

PHOTO 41: Helping a friend glassfibre the inside of his copper-hulled Thames tug.

PHOTO 42: A successful test, there is more to do on this but it is getting there.

PHOTO 43: Harry's Holmside finally somewhere he can work on it, now freed off and awaiting some attention to the injectors.

found a small hole in the blower pipework in the smokebox. This turned out to be a split along almost the entire thickness of the pipe which did fall apart as I took the blower ring and pipework out of the smokebox.

A new piece of thick-wall pipe silver soldered into the blower ring plus a bit of shaping had the loco on the front of the first train in plenty of time for the first departure.

I could then turn to fitting the new ram into the press – this required enlarging the hole in the top plate to allow the larger-diameter ram to pass through, quickly achieved with the oxy-acetylene torch.

With the new ram fitted, the press side of things has turned into an absolute dream! It is smooth, powerful and just better in every way. As I write this one wheelset is pressed together, the second has one new blank waiting for me on Monday morning.



Busman's holiday

This month I have also included a couple of photos of my personal model engineering projects. I have been helping a friend of mine with a model Thames tug that I gave to him last year, the hull is made from soft-soldered copper – my dad Dave Billmore found the tug in the loft of a house he bought in Barnsley in the 1980s, we believe it was built in the 1950s but have no proof at all of that! There was a partially dismantled single-cylinder steam engine with it but no boiler or anything else.

My friend is much more of a small boat person than I so when I inherited the hull it made sense to give it to him to rebuild. He's done an excellent job so far, although with testing the hull had started to leak along some of the seams so we decided to glassfibre the inside to add a bit of strength and provide adequate waterproofing.

The other photo shows the Holmside I have been working on, it is now freed off and I am setting about the injectors and various other bits before putting a boiler ticket on it – more to follow in the future! **EIM**



A GNR Stirling Single in 5-inch Gauge

Bruce's project to build another of his favourite locomotive prototypes this month focuses on the cab and the tender.

BY **BRUCE BOLDNER** Part Five of a short series



The locomotive cab on a Stirling is very plain and minimal. In fact it is the one part of the Stirling design which in my eyes could have done with a few more graceful lines. However it is very distinctive and is in keeping with the locomotive's general persona.

I purchased platework for the footplate, driving wheel valances, spectacle plate, cab sides and roof from Model Engineers Laser. It was then a simple job to curve and solder the panels together.

The half beading on the spectacle plate/cab sheets join proved to be a straightforward soldering exercise. However the beading on the rear edge of the cab required full-round beading

PHOTO 48:

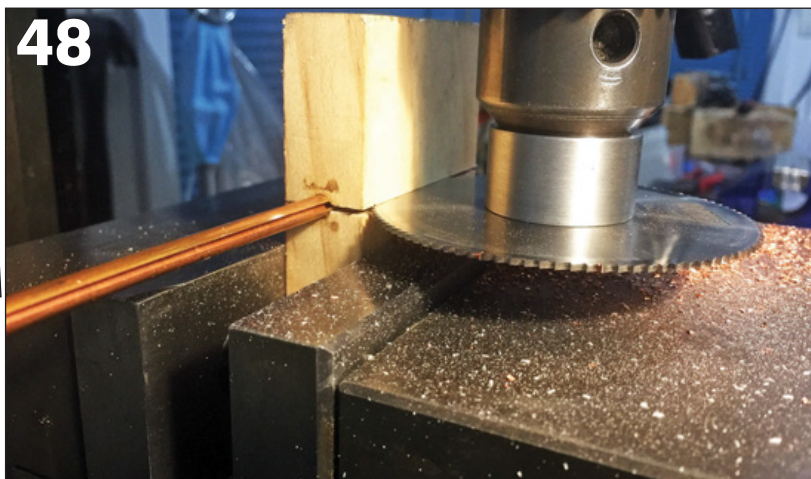
Slitting saw used on wood block to cut groove in the beading.

PHOTO 49:

Beading attached to loco cab.

Photos by the author

48



with a groove cut into it, to enable it to be pushed onto the cab trailing edges. I chose round copper rod, as after annealing it would bend to follow the cab curves more easily. But copper is nasty stuff to machine, as it tends to harden and grab.

To make a jig, I drilled a hole through a block of wood. After clamping the wood upright in the mill vice, I pushed the copper rod through the hole from one side to the other. The rod must be a firm fit in the hole.

I then brought a slitting saw against the wood block and cut right through the wood to the rod, then continued the cut for half the depth of the rod. As the slitting saw cuts a groove into the rod, you must draw the rod through the block against the direction of the teeth of the saw.

A safety note – wear thick gloves in case the copper grabs the saw teeth. I wasn't holding on tightly enough the first try and the copper rod was quickly ripped out of my hands in the direction of the saw rotation and shot across the workshop like a bullet. I hung on grimly the second time and managed to draw the full length of copper rod through against the circular saw (Photo 48-49).

The Tender

I am confused about the provenance of my tender plans from Reeves. The plans advise that the original design was by the late Joe Scarth circa 1970, then revised by David C. Piddington in 1992-3. These plans are for a

horseshoe tender, with the water space extending in two arms to the front of the tender, leaving a U-shaped coal space between.

It seemed strange to me that of the many 5-inch gauge Stirling Single models I have viewed on the internet, I discovered only a minority using this configuration of tender. Did these other owners know something that I was unaware of?

I asked Malcolm High, the then proprietor of Model Engineers Laser to replicate the platework of this tender for me. He did a superb, accurate job, including all the many rivet holes, which in itself was a huge time-saver.

Second generation

Then, however, I belatedly discovered the Great Northern Railway Society in the UK, where an extremely helpful and knowledgeable gentleman pointed me to the Society's excellent publication *Great Northern Railway Locomotive Tenders*. He advised me that the horseshoe tender configuration was a design by Stirling's successor George Ivatt. I would have preferred a Stirling tender for my Stirling locomotive and had assumed that was what the Reeves plans were depicting.

However, as I had already nearly completed my tender with the MEL platework by this stage, I decided to finish it with the parts I had. In any case, I reasoned, it would surely not have been uncommon for Ivatt tenders to be coupled to Stirling locomotives

49



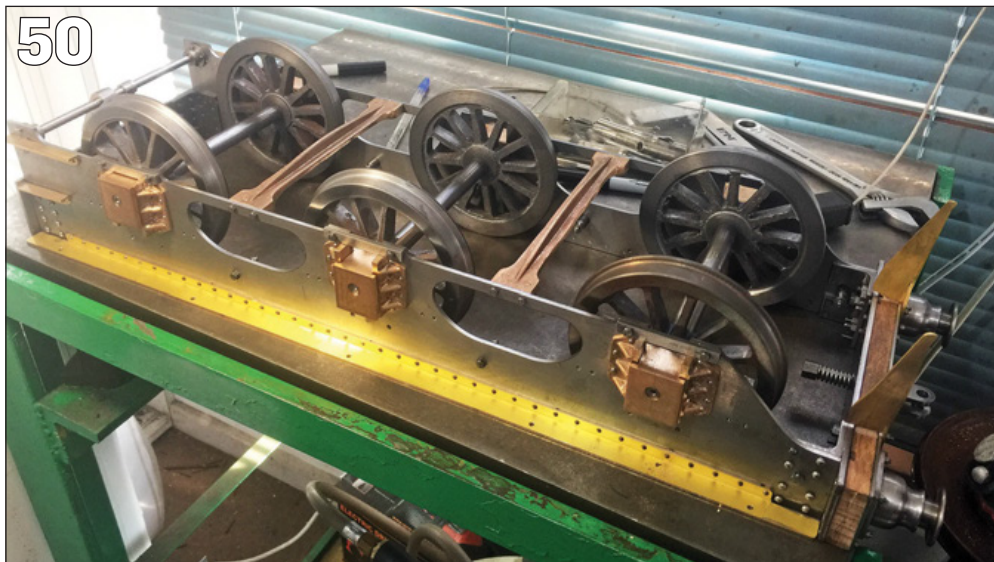
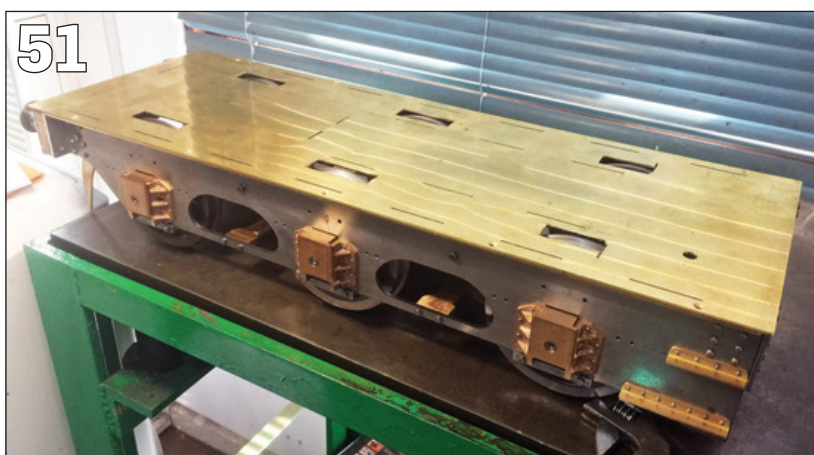
50

51


PHOTO 50:
Inverted tender frame and wheels.

PHOTO 51:
View from above showing cut-outs.

PHOTO 52:
Tender side – note curved top.

PHOTO 53:
Bunker soldered between top and bottom plates.

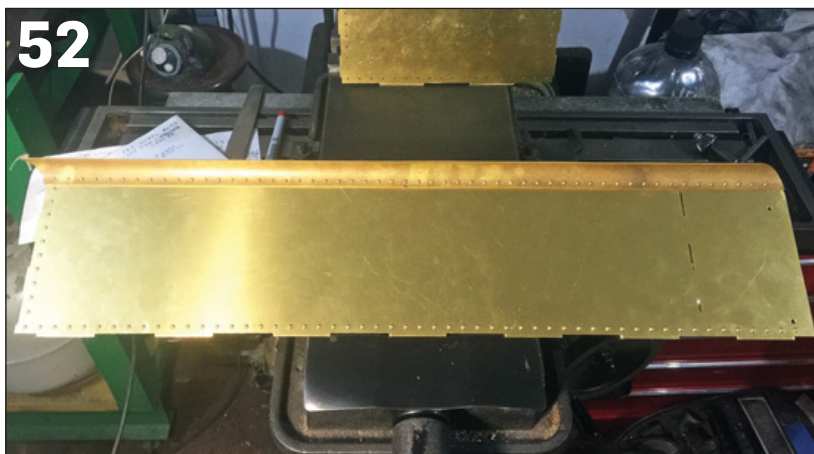
52


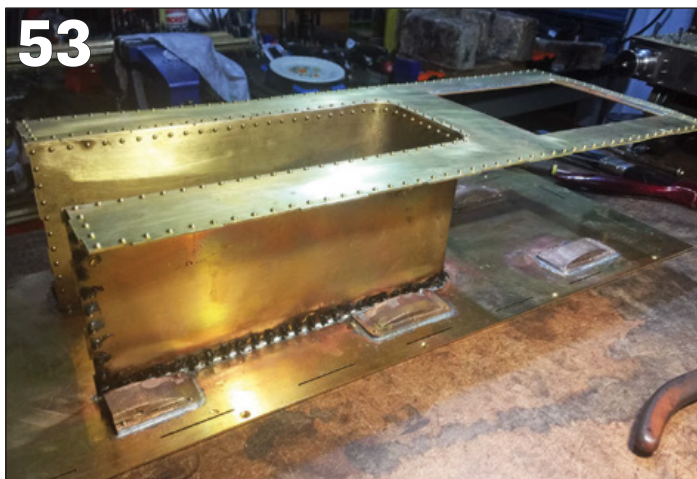
PHOTO 54:
Beading clamped to top strip.

PHOTO 55:
Completed tank platework.

PHOTO 56:
Press-fit water connectors.

PHOTO 57:
Tender pipework.

PHOTO 58:
Injectors located under cab floor.

53

54


in the Ivatt era. I decided to add details such as a coal gate, transverse coal retaining sheet and lifting rings as per Doncaster drawing R22 on page 59 of the GNR Society book.

Some discrepancies remain, however. The two oval frame cut-outs between the wheels on each side of Ivatt tenders were symmetrical. Those on the Stirling tenders were asymmetrical, in that the top horizontal straight line of each cut-out was shorter than the straight bottom line of each cut-out. My frames have the Stirling cut-outs beneath an Ivatt tender tank.

Tender R22 in the GNR Society book is drawn with a sloping coal floor, whereas the Reeves tender has a completely flat coal floor, parallel to the ground throughout its length.

Tender R22 has toolboxes mounted on a lowered step at the front of each water space arm. Indeed this step seems to be a feature of most if not all GN tenders. The Reeves tender of my plans has no lowered steps. In fact it does not feature toolboxes at all.

I wish to re-emphasise that I have no problem with Model Engineers Laser. I asked Malcolm to reproduce the platework of my Reeves tender design and this is exactly what he did, with superb accuracy. And it has built into a very nice tender.

Likewise Reeves may have drawn a tender based on a prototype of which I am unaware. I would be delighted however, if someone could clarify the situation for me (*if readers can answer this conundrum please write to the editorial address on page 3 – Ed*).

Photo 50 shows the tender frame and wheels sitting upside down. I riveted the brass right angle to the tops of the frames to provide an attachment point for the tender tank.

Cut back

The floor plate of this tender has cut-outs for cast wheel wells over each wheel. Be warned not to make the cut-outs over the leading wheels to the full length specified on the plans. If

you do you will find that the cut-out extends in the floor beyond the front vertical sheets of the water tank.

Instead just make the cut to the verticals and not beyond, then cut two of the wheel-well castings to the required reduced length and then solder them to the floor within the water tank space. You will find that once the wheels are sprung, they will not bottom out on the castings (Photo 51).

The curved top strips on the three tender walls are separate strips riveted on as per the prototype. After annealing them a company here in Australia curved them to shape on a large press (Photo 52).

Photo 53 shows the vertical walls of the coal space soft-soldered between the top plate and floor plate. The rivets at the bottom of the vertical walls are coated with JB Weld epoxy resin in the water space. I did not wish to solder them lest the heat disturb the wall to floor solder. Note the shortened front wheel wells.

Photo 54 shows the half-round beading clamped to the top strip, before being soldered and in Photo 55 the tank platework is completed.

Press for action

Photo 56 shows another Mike Boddy design – press-fit water connectors. The left plate is mounted beneath the locomotive drag bar. The right bar swings on hoses from the tender. Press the bars together and O-rings seal the barbs into the opposing sockets.

The centre reinforced pipe carries water from an auxiliary water tank in my riding truck into the boiler via a 100psi electric pump. The nut on this pipe threads into the opposite bar and secures them together. The two barbs on the far ends are for water to the left and right-side injectors. The two next in from them each side are for the axle water pump and bypass.



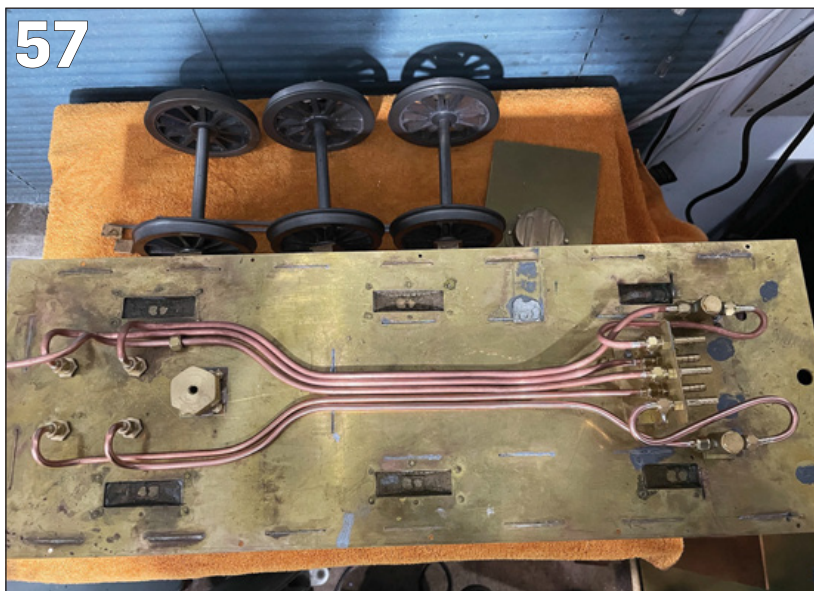
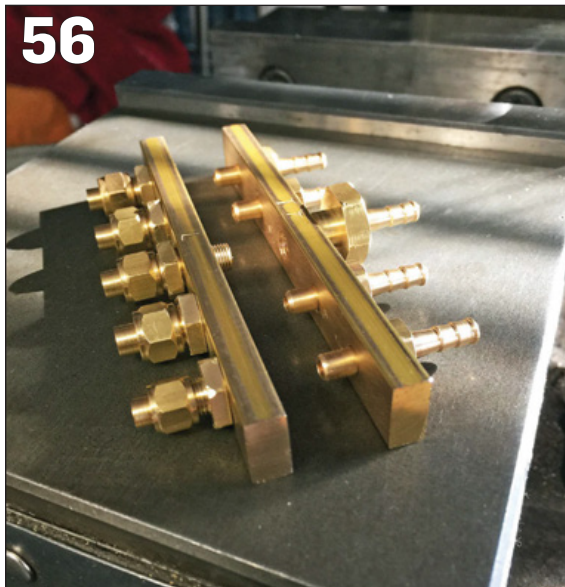
In Photo 57 you can see the tender pipework. The pipe on the left going out of the picture is to the auxiliary water tank with an electric pump in the riding truck. This is very handy when those temperamental injectors refuse to co-operate!

And where do those pesky injectors reside? They are under the cab floor Photo 58. Yes I know it's a dog's breakfast. Are they hard to get to? Extremely! Do they work? Yes.

Always? Well I'll carry out a review and get back to you on that one. They just didn't fit anywhere else without looking untidy. **EIM**

■ Next month Bruce begins the major task of painting the loco.

Parts 1-4 of this series appeared in the July to October 2022 editions of **EIM** – digital back issues can be downloaded or printed copies ordered from www.world-of-railways.co.uk/store/back-issues/engineering-in-miniature or by calling 01778 392484.



Building a ride-on tender from scratch

Peter and Matthew begin a new series describing their latest project – a 7¼-inch ride-on tender, designed from scratch in 3D CAD and intended as a ‘beginners’ project to teach or practice a broad range of skills, whilst resulting in a fine piece of rolling-stock.

BY PETER AND MATTHEW KENINGTON Part one of 11

We had been on the lookout, for a while, for a 7¼-inch gauge ‘workhorse’ steam locomotive to undertake passenger-hauling operations at our local club, the Hereford SME. We wanted something simple, inexpensive and not needing much, if any, work doing on it (we have enough projects already, as regular readers will know).

I came across a potentially-suitable loco more or less at the start of the first lockdown in 2020, but of course we were unable to see it or collect it at that time. I negotiated a potential deal with the owner and we awaited an opportunity to take a look – we had to be patient. Eventually, we made the journey during one of the partial lockdown-lifting ‘windows’ in early summer and we came away with a ‘Maggie’ (Photo 1). This is a derivative of the popular Romulus design, featuring an 0-6-0 wheel-arrangement and Walschaerts valve gear.

Our particular model is even more ‘unique’ in that whilst the running gear is as just described, the boiler is not of a conventional type for a Romulus – it is a marine boiler designed for a Sweet William. The loco had, however, had little use from new and therefore didn’t need much ‘work’ (or so we thought...).

The main requirement lay in re-designing the water valve arrangement for the (twin) injectors, to allow operation from an external (tender) water feed as well as from the saddle tank. We also needed to make and fit an external bracket for the whistle, which was dangling precariously from its pipework inside the cab, plus a few other ‘finishing-off’ issues.

We managed to get the loco ready in time to take to the only club running day at Hereford in 2020... only my car broke down just beforehand and my wife’s car is only suitable for carrying our 5-inch Super Simplex (it has no facility to tow a trailer), so our Maggie didn’t get its first outing until summer 2021!

We named our new loco ‘Idris’

“We decided to design our own, from scratch – we would get exactly what we wanted or if we didn’t we would only have ourselves to blame...”

PHOTO 1: Peter and Matthew’s ‘Maggie’ before modification – the ‘dangling’ whistle is just visible in the cab.

PHOTO 2: Idris with ‘interim’ riding truck: functional but not pretty!

All photos and diagrams by the authors



after the dragon in *Ivor the Engine*; after all it has a fire in its belly, breathes out smoke and lives on a hillside in Wales, so we thought it was appropriate. We subsequently found that this wasn’t a very original name, but it had stuck by then so we didn’t change it.

We initially ran the loco with a simple passenger carriage, which also came as a part of the deal (Photo 2). This highlighted a few issues of which regular readers will be aware – there is still more to come in that particular story. Whilst the passenger carriage arrangement worked, it was clearly far

from ideal (as can be seen in the photo) – it has no brakes, no water-supply, no coal-storage (hence the tin box in front of Matthew), no vacuum pass-through (we improvised with a length of rubber pipe!) and nowhere to store tools/rags and such when not in use. In short, it needed to be replaced.

A Tender for Idris

We looked around at both new and secondhand tenders, but couldn’t find anything which quite met our needs. We didn’t want something too big, but we did want it to include a water tank with a decent capacity, the capability



PHOTO 3: Completed ride-on tender – a delight after so many hours of work!

PHOTO 4: Rear view of the tender.

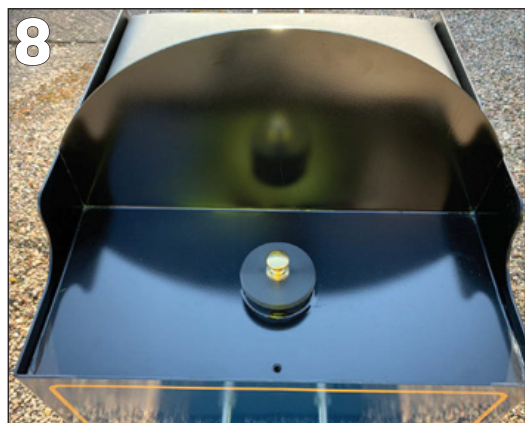
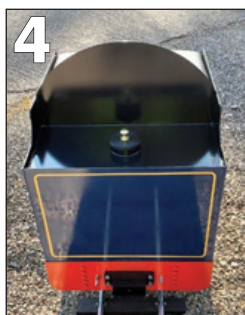
PHOTO 5: Footplate incorporating brake control, twin water-taps, coal tray, two recesses for storage of tools (and snacks?) and custom-cut rubber matting. Note that coal-hole door can be retained in ‘open’ position (as here) – more on this later in the series.

PHOTO 6: Close-up of front buffer beam showing the two quick-connect water-feeds (far left and right), vacuum quick-connect for the vacuum pass-through (to the left of the coupling) and the eyelet for the safety-chain.

PHOTO 7: Rear buffer beam, including a safety-chain eyelet and the vacuum pass-through quick-connect.

PHOTO 8: Close-up of rear section and filler-cap. Note small hole toward bottom of picture – this is a drain-point to prevent the rear section from flooding due to the inevitable spills when filling the water tank.

PHOTO 9: Close-up of the coal chute (with the seat removed) – the coal bunker boasts an impressive storage capacity!



to feed the twin injectors on Idris, a handbrake (ideally acting upon all four wheels), a decent-sized and comfortable seat, provision for safety-chains front and rear and a pass-through for vacuum brakes (Idris is fitted with a vacuum ejector, which works well). Finally, we wanted it to include some form of coal storage which was easily accessible (with a shovel) when driving and had plenty of capacity for long runs (to match the capacity of the water-tank).

Most tenders we looked at had some or many of these features, but none we found combined all of them. No doubt we could have commissioned a bespoke variant of one of the commercial designs, but we decided to design our own, from scratch – that way we would get exactly what we wanted, or at least if we didn't, we only had ourselves to blame!

Photos 3-9 show some views of the completed tender; after all, if you're thinking of building one, it helps to know what it will look like after all your hard work.

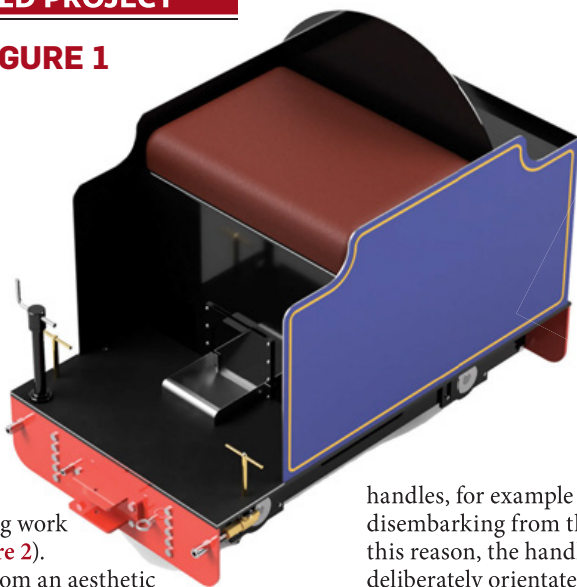
Make mistakes in CAD

One thing we have learnt in our limited experience of designing our own hardware is to make all your mistakes at the CAD stage; the 'build' phase will then be relatively straightforward (famous last words, as we will see in this series...). If any more experienced model engineers are reading this, ask yourself how many times you have built a loco (or tender) to the drawings, only to find that some part does not fit, or worse still, simply does not work.

I have recently been informed of a superheater issue on a BR Standard Class 4 which, if built to drawings, is too small to function correctly, for example. Another example is one I discovered on the tender for a 5-inch gauge GWR Manor which we are also building and which, fortunately, I found at the CAD stage – the braking system, as designed, would run through the wheels and not between them! This is not too hard to rectify, however it is annoying to have to re-make a series of parts simply because the drawing is wrong.

The other nice thing about CAD is that it enables the generation of 'renderings' of the finished design, even down to the appearance of the materials and prospective colour scheme. This allows the visual aspects of the design to be judged and optimised, before any metal is cut (Figure 1) and permits any issues with the braking mechanism or wheels interfering with the water pipework (for example) to be caught before beginning construction or committing expenditure to laser-

FIGURE 1



cutting work (Figure 2).

From an aesthetic perspective, we experimented with both straight and sculpted (Figure 3) side-panels, for example, before settling for the latter. We even (crudely) modelled a pair of feet, to ensure that there was sufficient room on the footplate (Figure 4).

Of course the downside of doing a rendering is that it appears 'perfect' (no paint blemishes or other 'mistakes') – it's hard for the real thing to live up to the 'artists impression'!

Note that one thing which the modelling of the 'feet', in Figure 4, did highlight was the danger of a foot catching one or other of the water-tap

handles, for example when disembarking from the tender. For this reason, the handles were deliberately orientated so that the situation shown in Figure 4 would only occur when the tap was 'on' and that the handle would be in-line with the side of the tender under normal circumstances (in other words when the tap is 'off'). It is unlikely that the driver will wish to disembark from the tender whilst the water is turned on, hence making this orientation a more sensible option.

The Sales Brochure

Before embarking upon a build project of this nature, it is obviously a good idea to know what you will end up with if/when you make it to the end.

FIGURE 2

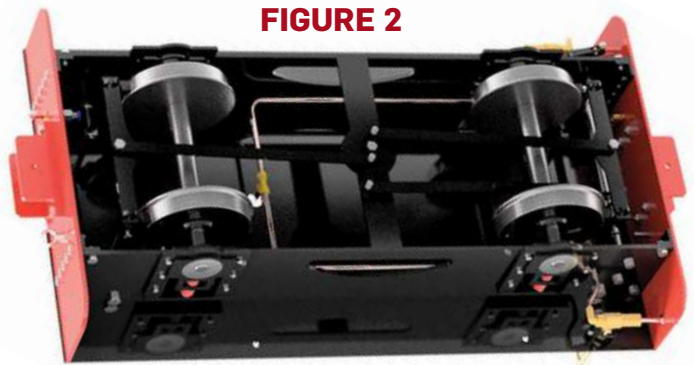


FIGURE 1:
3D rendering of the complete riding truck.

FIGURE 2:
Underside of the riding truck.

TABLE 1:
Full tender specification.

FIGURE 3:
Sculpted side-panel concept.

FIGURE 4:
'Feet' modelled to ensure the footplate area was adequate, during design – this rendering makes footplate look more cramped than in practice – the 'feet' are deliberately generous.

FIGURE 5:
Main structural components of lower tender – upper view. Note that spring-retention plates slide to the top of the horns when assembled, as shown by the dot-dash line, before hornstays are added.

FIGURE 6:
Lower underside view of chassis.

Since this riding truck is a completely new design, from a blank sheet of paper (or computer screen, at least) and not based upon any sort of prototype, you won't be able to find one at your local club or preserved railway, to take a look at (unless your local club is Hereford, of course).

Table 1 shows the 'vital statistics' of the design followed below by its key features. Think of this as a form of 'sales brochure', for the basic design. You are, of course, free to customise this as you wish, which is the great advantage of building your own tender from scratch.

Key Features

- High-capacity water tank made from low-cost (and rust-free!) plastic
- Twin quarter-turn injector feeds
- Quick-connect pneumatic couplings used for water outlets
- Coal bunker with coal chute and 'latching' door
- Storage areas for rags, firing tools, and such which are easily accessible whilst running
- Wind-on handbrake acting on all four wheels
- Vacuum brake pass-through (using quick-connect couplings on both ends)
- Safety-chain eyelets (front and rear)
- Curved seat-back
- Rear drain point (to prevent the rear section from becoming a lake if water is spilt during filling)
- Tab-and-slot construction to simplify welding
- Seat-section is intrinsically self-supporting, easing requirements on weld-quality
- Easy disassembly, notably of the top and bottom parts, allowing access to the water-tank for cleaning, if needed (this separation also simplifies painting, assuming that the side-panels and the base/frames are to be of different colours)
- Water filter in filler tube

With regard to the two points concerning welding – whilst we're now getting quite competent at welding (TIG in particular, which is what was used in this design), I still tend to err on the side of caution and the design does not fundamentally rely upon the strength of its welds, either in supporting the driver or in

TABLE 1 – Tender specification

Parameter	Value	Units	Notes
Length	860	mm	~34-inch
Width	485	mm	Body width to match Idris (~19in)
Height (floor above rails)	180	mm	To match Idris' footplate height
Water tank length	390	mm	Internal cavity size (min)
Water tank width	480	mm	Internal cavity size (min)
Water tank height	310	mm	Internal cavity size (min)
Capacity	32	litres	
Wheelbase	520	mm	
Brakes	4-wheel		
Injector water-feeds	2-off		With taps
Vacuum pass-through	Yes		
Steel thickness – body	3	mm	
Steel thickness – base/floor	6	mm	
Steel thickness – frames	6	mm	
Steel thickness – buffer beams	6	mm	
Steel thickness – horns/blocks	6	mm	
Steel type (body)	Mild-steel		
Seat length	338	mm	
Seat width	~479	mm	To fit neatly inside the truck sides
Seat-base height above footplate	320	mm	
Footplate length	300	mm	
Footplate width	495	mm	To match Idris. Full width of tender baseplate.
Footplate material	Rubber mat		Chequer pattern
Coal bunker length	200	mm	Under seat
Coal bunker width	480	mm	Internal width of tender sides

preventing a loco runaway (for example due to a poor weld between the buffer-beam and the frames – no such weld exists in this design).

Even the couplings, which do make use of welding in their construction, do not rely upon these welds for their pulling strength. The design is therefore suitable for the ‘hobby-welder’ who is perhaps a little nervous of their welding skills.

Hopefully you are now ‘sold’ on the design (please sign here... and then here...) and keen to make a start.

Skill Level

Whilst this project might seem daunting if you are relatively new to the hobby of model engineering, it is actually relatively straightforward (at least, the way we did it). If you followed (and completed) Matthew’s recent(-ish) series on the building of a simple oscillating engine from bar stock (EIM Feb-June 2021), then you will have most of the skills needed to complete this project.

The main one you may need to add is welding (ideally, TIG welding), although most items could be bolted together (with additional brackets in some areas), so don’t let this put you off. You can also ‘outsource’ the welding to a friendly fellow club-member (you have joined a club by now, haven’t you?) or a local metal fabrication shop if you’re not quite ready for such challenges yet.

The tender has been deliberately designed to be a ‘quick’ and ‘simple’ build, although the words ‘quick’ and ‘simple’ are relative terms and I’m not suggesting that you can move straight from a Meccano kit to this build, completing it in an afternoon.

I wouldn’t be surprised if a skilled and experienced practitioner (one more skilled and experienced than either Matthew or I) could assemble a tender to this design in seven (and a quarter...) full-on days (excluding painting), although it took Matthew and I considerably longer as we were grabbing time at weekends and Matthew was tied up with GCSE revision (including at weekends) for almost the whole time. And yes, he still had a full-on set of exams (actually, three sets), despite exams having been officially ‘cancelled’ due to Covid!

The intention in this series is to go into perhaps a little more detail than is strictly necessary to enable the building of a (relatively simple) riding truck/tender. Some of the thought processes in arriving at the final design will also be explored, along with details of the fabrication, construction and assembly of the individual components. This will hopefully both make the construction

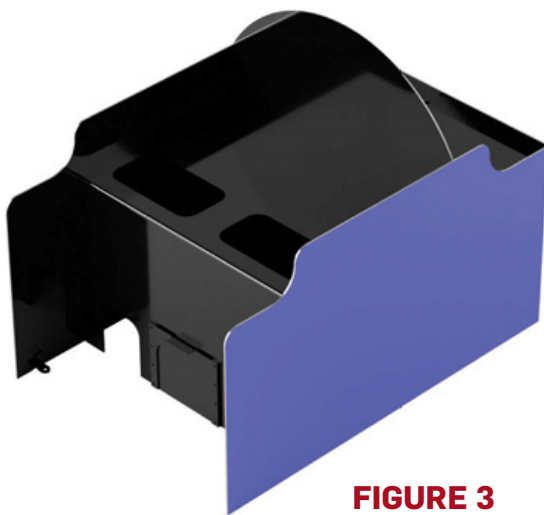


FIGURE 3

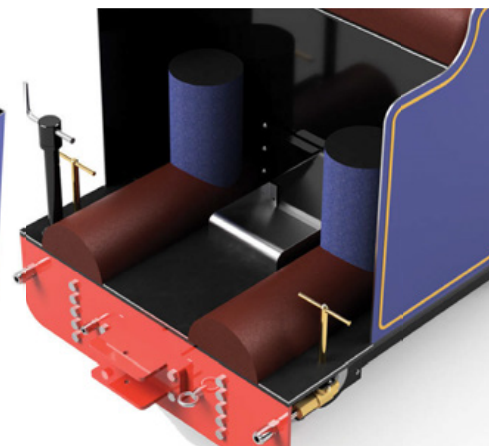


FIGURE 4

process easier and also give some insights into the methods used and the reasons behind their use, which may be of benefit in other design projects, being (or yet to be) undertaken by more experienced readers.

We may even get letters suggesting better solutions – these are to be encouraged, as it will help us (and hopefully other readers) to learn. A large part of the enjoyment of the hobby (for Matthew and I, at least) lies in learning new skills and techniques – even if they are old skills or techniques of which we simply weren’t aware (and there are a lot of those...).

Laser-cutting

The tender was designed to make as much use of laser-cutting as possible – any component which could sensibly be laser-cut, was fabricated this way. We have a friendly local metal fabrication shop which has a laser-cutter and charges reasonable rates; there are plenty of others around the country. There are also specialist model-engineering suppliers in this area, so it is not hard to find a suitable source for these components. Note that since all of the materials to be cut are suitable for any type of laser-cutter (of an appropriate power level), there is no need to seek out a specialist ‘fibre-laser’ provider (as would be required for cutting brass or copper, for example).

The drawings will need to be produced in a dxf file format, typically, although

“A large part of the enjoyment of the hobby lies in learning new skills and techniques – even if they are old skills or techniques of which we simply weren’t aware...”

some (most?) cutting houses will work directly from paper drawings, if necessary, usually at extra cost.

A note on tapping holes

It is worth noting that where a laser-cut hole is to be tapped, it is a good idea to specify that a much smaller hole is cut by the laser-cutter and to then widen this to the required tapping-hole size using a normal twist-drill. The reason for this is that the laser-cut hole will have a very hard internal surface, due to the extreme heat generated by the laser during the cutting process. Attempting to thread this hard surface directly is likely to be hard work and lead to a prematurely blunt (or, worse, snapped) tap. It is much better to risk blunting a drill-bit, since these are much easier to sharpen and also less likely to break and get stuck in the hole. ▶

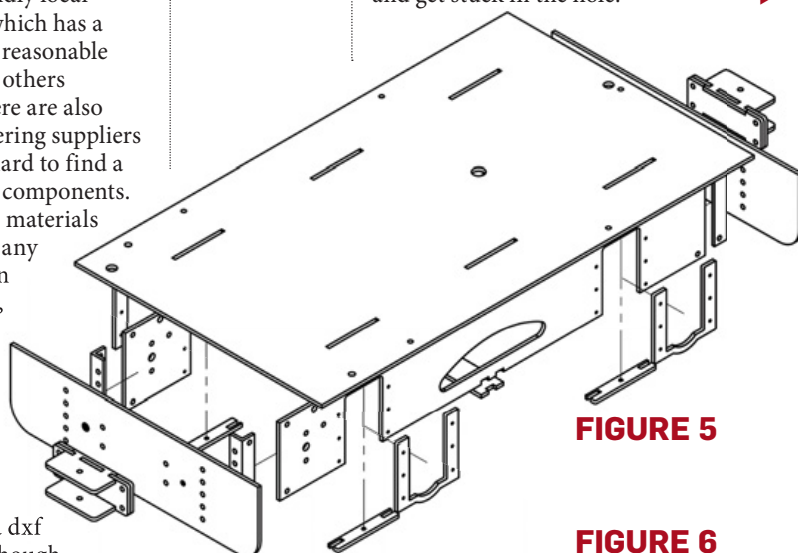


FIGURE 5

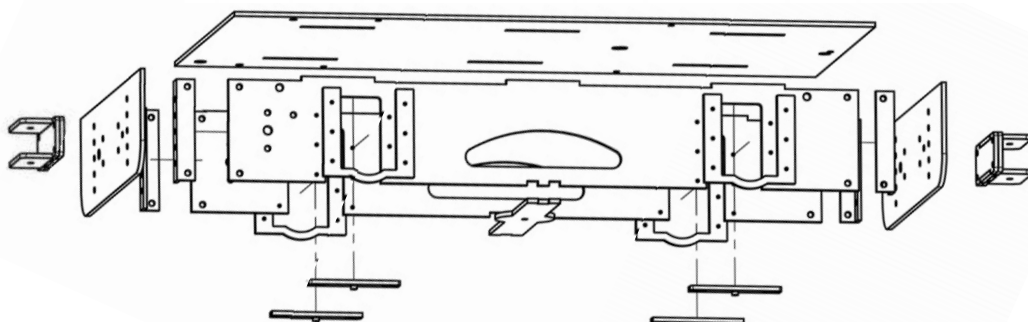


FIGURE 6

Baseplate

Turning Figure 7 as reproduced here by 90 degrees clockwise (to form a 'landscape' view) the front of the tender will be on the left, the two 10mm holes (on opposite long sides of the baseplate) being clearance holes for the water-tap controls and the 16mm hole being for the handbrake control.

This hole is deliberately over-size for this requirement, allowing the hole to also act as a drain point in the eventuality that the tank or one of its seals develops a leak and allows water to build up on the baseplate, within the water-tank compartment. Such, unwanted, accumulations of water have the opportunity to drain through this hole as well.

Finally, the five 8mm holes appearing around three sides of the baseplate are intended for the M8 bolts which attach the tender body to the baseplate. There are thus only five bolts which need to be removed to separate the two parts of the tender, making it relatively easy to access the tank, for example, should debris need removing (although the filter, to be described later in the series, should hopefully ensure this is a rare event).

Frames

The frames are made from 6mm mild steel and differ slightly right (**Figure 8**) and left (**Figure 9**) – the left-hand

The 100mm long tabs at the top of the frames insert into corresponding slots in the baseplate and are designed to be TIG-welded in place, without the

need for additional filler. The 'excess' metal designed into the tabs is used as the filler – this technique works very well and both makes the welding process much simpler for the novice (no need to juggle both a torch and a

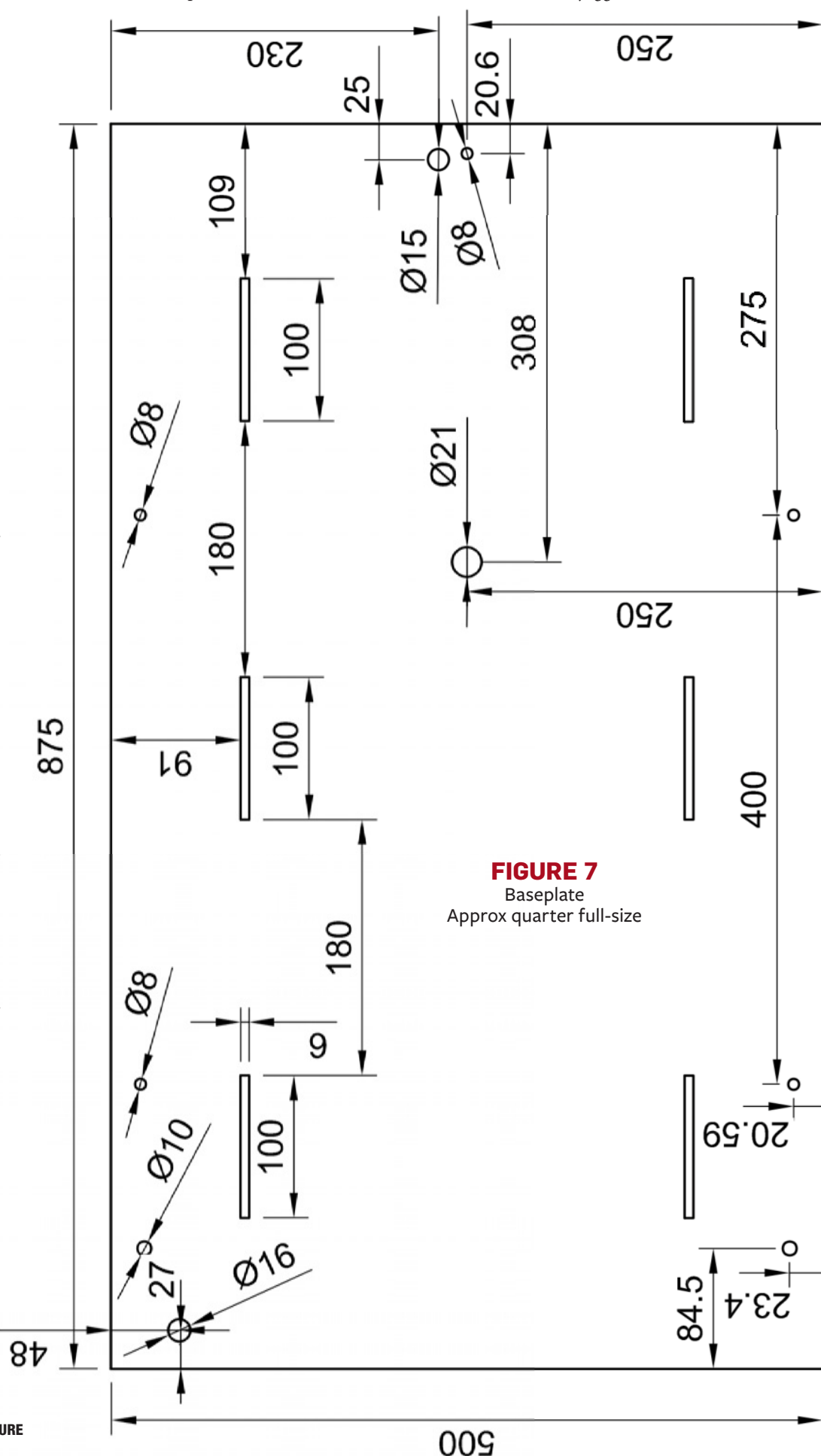


FIGURE 7
Baseplate
Approx quarter full-size

like a squashed letter 'D' lying on its back, is purely cosmetic. It is nominally a weight-saving (as well as a decorative) measure, however it probably saves very little weight in the grand scheme of things and can be omitted if desired.

The horns are obvious, with surrounding holes for attaching the hornblocks/hornstays (or their laser-cut equivalents). The remaining holes are either used to attach the buffer beams or various parts of the braking mechanism, as will be described in their respective sections.

Figure 9 shows the drawing for the left-hand frame, when viewing the tender from the rear. All dimensions, hole-sizes etc. are identical to those for the right-hand frame in Figure 8, except that in the latter there is an additional hole between holes 1 and 2 (numbered in Figure 9). The hole allows the brake cam-shaft to exit the frame, for connection to the control column via its control cam, and is not needed on the left-hand frame.

Buffer Beams

The buffer beams (Figure 10-11) are constructed from 6mm mild steel. Our examples were laser-cut, along with many of the other components, however this is arguably not necessary given the simplicity of the shape. As with the other laser-cut components, the holes were deliberately cut under-size and widened with standard twist drills; this is particularly important for the holes which will be threaded.

The ¼-inch BSP threaded holes accommodate the quick-connect bodies for the water connections (outer two) and the vacuum pass-through connector (centre-left hole). The M8 threaded hole allows for the attachment of an eye-bolt, to accommodate a safety-chain.

The remaining holes either allow the buffer beam to be bolted to brackets which attach them to the frames or attach the coupling (these latter holes are threaded M8), with the bolts used here also having nuts added, for additional security and strength. The pulling force of the whole of the train relies upon the integrity of these bolts/threads, so high-quality stainless types should be used.

The dimensions for the rear buffer beam in Figure 11, are identical to those of the front one in Figure 10 with the exception that the ¼-inch BSP threaded hole has moved down to the centreline of the buffer beam plate. Its left-right position is the same as is shown in Figure 10. **EIM**

■ Next month Peter and Matthew build the couplings and frame stretchers for their tender.

Making realistic louvres...

Rich is back with yet another useful technique, this time creating a piece of essential stock detailing.

BY RICH WIGHTMAN



I needed some small louvres to go on the side of a diesel shunter type loco body I was working on, as shown in the heading photo above. They would need to look like engine cooling vents and I would need eight in all sized at about 3½-inch x 2¼-inch. They were for decorative purposes only and would be simply glued to the body.

Of course my first reaction was to jump on the old PC and have a scan through eBay and a search on Google. Nothing suitable came up so I had a look around the house to see what if anything had louvres, thinking that I might find something of use at our local recycling point. I found some on the back of the microwave and some on the plastic casing on the back of the TV, but nowhere near enough to supply the amount I needed.

My next thought was to make some using those wood strips that are used as coffee stirrers in takeaway cafes and the like, but I quickly dropped that idea as they would stand out too far and would be tricky and time-consuming to make. What I really needed were some metal ones, made from aluminium would do, but how to make them?

Back in the March 2020 issue of **EIM** I showed how I made some firing shovels for my steam loco 'Conway'

ABOVE: The finished louvres mounted on the body of Rich's battery loco.

All photos by the author

(the build of which is soon to be described in our pages – Ed) by making a punch and die and pressing them out (Photo 1). Perhaps I could do the same to make some louvres. In my workshop I have a steel rack screwed to one wall and which has plastic bins that hook on to it. Taking a look at



that I could see how it had been punched out. To make these louvres some sort of jig would be needed to make sure that said louvres were equally spaced. At this scale even the slightest discrepancy will stand out like a sore thumb.

I made a few scribbles on a bit of paper to give me an idea of the size I wanted and started from there. I will not be showing any drawings or plans for this project as I hope the photos will suffice and give you an idea of what can be done.

You will of course need a press of some sort. With a bit of adapting it should be possible to use a decent-size vice. I made my own press and showed how in an article published in the March 2012 edition of **EIM**. It's one of the most used items in my workshop, employed almost on a weekly basis and well worth the effort of making one (**Photo 2**).

Making a punch

I started with the punch, a bit of $\frac{1}{4} \times 1 \times 1\frac{3}{4}$ -inch mild steel bar. I figured mild steel would be okay for this job as I only needed to punch eight light gauge aluminium louvres. With the bar held in the milling machine vice I rounded over the edge with a corner rounding cutter I have (**Photo 3**). It wouldn't take much effort to file the profile by hand if you don't have a cutter. Then each corner was rounded over with a file (**Photo 4**).

As a practice piece I used a bit of scrap MDF to make the die. The MDF was held in the milling machine vice and using a $\frac{1}{4}$ -inch cutter I machined the first slot $\frac{1}{4}$ -inch deep. The table was moved by $\frac{3}{8}$ -inch and the second slot cut followed by 12 more at the same spacing. This gives $\frac{1}{8}$ -inch between each slot (**Photo 5**).

The aluminium I have used for the louvres is quite thin at 0.028-inch which is 22 gauge or 0.71mm for the metric-minded, so a plate was needed to hold the blanks in place and prevent them from curling up out of shape. This I made out of 6mm aluminium plate with a single similar-sized slot machined through (**Photo 6**).

If my plan worked I would then machine more slots to match the slots in the die. Initially my idea was to sandwich the blank between the die and aluminium clamp plate, punch a slot and then move the whole thing along, punch the next slot and so on but it proved too difficult to accurately move the piece to keep punch and die aligned and the louvres equally spaced. However early trials proved to be successful and nice louvres were punched in sample pieces of the aluminium. The MDF die didn't stand up too well and was soon unusable but the idea worked. ►



PHOTO 1: Firing shovels produced on Rich's home-built press.

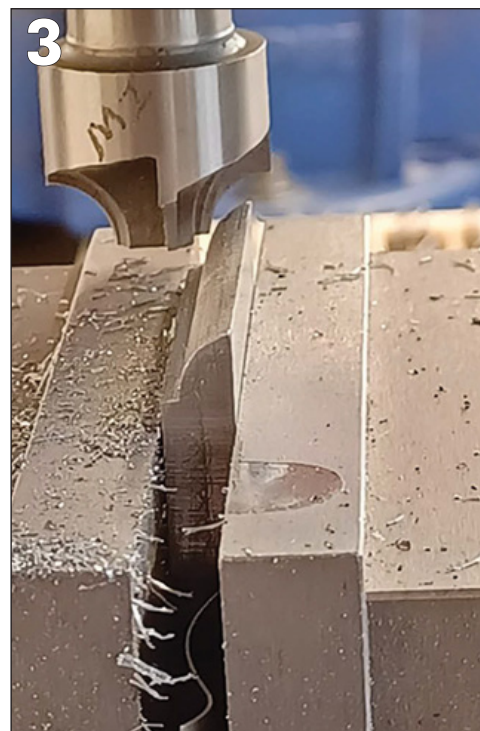
PHOTO 2: The home-made press in question.

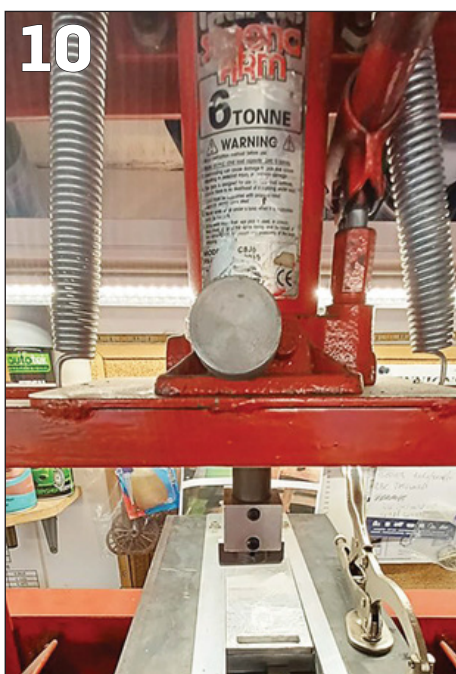
PHOTO 3: Rounding over the louvre punch.

PHOTO 4: Punch finished by having its corners rounded over to match.

PHOTO 5: The test die, made out of MDF.

PHOTO 6: The hold-down plate for the pressing operation seen in use.





“The MDF die didn’t stand up too well and was soon unusable but the idea worked...”

PHOTO 7: The aluminium die being machined.

PHOTO 8: The jig plate on Rich’s press.

PHOTO 9: The die in position on the jig plate.

PHOTO 10: The punch mounted on the ram.

PHOTO 11: Aligning the punch and die.

PHOTO 12: The punch and hold down plate in place.

PHOTO 13: The first louvre punched out.

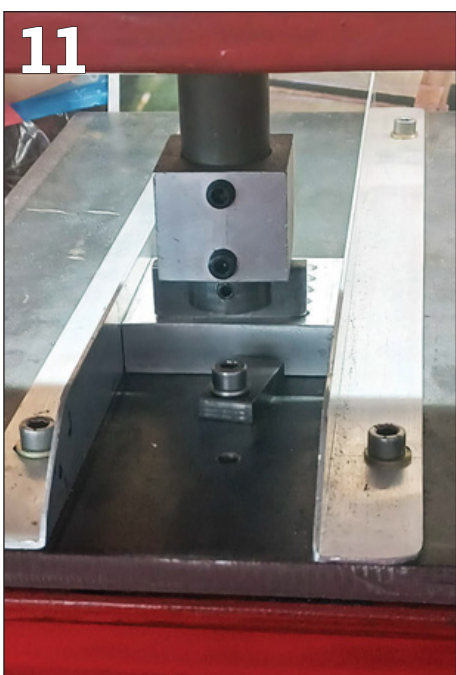
PHOTO 14: Eight louvres punched.

PHOTO 15: Once trimmed, the louvres were glued onto the body side.

The next die I made was from a 5/8-inch thick block of aluminium 2½-inch x 2¼-inch. Five slots were machined ¼-inch deep x 1¾-inch wide spaced at 3/8-inch as before (**Photo 7**). Note the MDF die underneath used a spacer. This time though the die would be fixed in place and the blank moved along as each louvre was punched.

I have a piece of 10mm thick steel plate that I use on my press – this has a number of holes tapped in it for mounting various jigs and such like, including two lengths of angle and a mole grip-type clamp fitted to one side (**Photo 8**). The die is set in position onto this steel plate between the two guide angles and a couple of stops front and back keep it located in the correct position (**Photo 9**).

The punch is mounted on the ram spigot (**Photo 10**) and brought down into the first slot in the die to align the



14



two. The steel plate is then clamped to the press bed (**Photo 11**).

The aluminium blanks are cut to 2½-inch wide by about 3¾-inch long so that they fit between the two guides and can be trimmed to size after punching. The die sits between the two guide angles and the aluminium hold-down plate also sits between the two guides (**Photo 12**).

Louvre production

Okay let's make some louvres. I positioned the blank over the first slot in the die and placed the hold-down

"Each time the blank was moved forward the louvres engaged with the slots in the die ensuring equal spacing..."

15



plate over the blank and clamped with the mole grip. I have made a few pen marks on the angles to aid alignment of the blank for the position of the first punch.

I jacked the press down and the punch went through the aluminium blank quite easily. The punch was set so that the ram came to rest on the hold-down plate thus ensuring equal depths of punch each time (**Photo 13**).

I released the punch to clear the hold-down plate, released the mole grip, lifted the hold-down plate slightly and moved the blank forward so that the newly punched louvre engaged with the second slot in the die.

The process could now be repeated. Each time the blank was

moved forward the louvres engaged with the slots in the die ensuring equal spacing. I have put a short video showing the process and which explains a lot on Youtube at this link: <https://bit.ly/3E9WpKu>

For this job I punched eight louvres in each blank (**Photo 13**). Finally each was trimmed with tin snips and any sharp edges cleaned up.

Masking tape was used to mark out the positions on the loco body and the louvres simply glued on with general purpose glue (**Photo 15**).

The rather drab-looking sides of the loco body now look a lot better with the louvres adding some much-needed detail. I hope you find this little project of interest. **EIM**

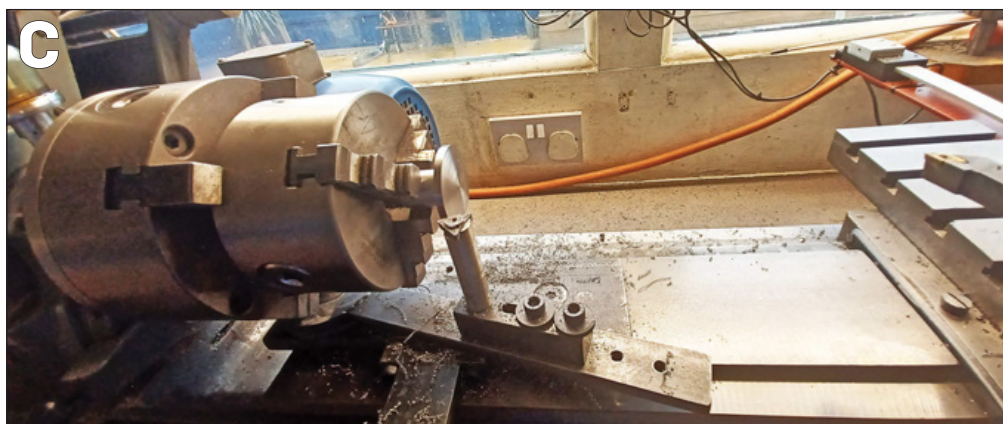
A



B



C



Buffer stop...

To finish I would just like to show you a quick job I carried on a slightly different note, but still concerned with the same loco and which may be of interest to readers.

I made four buffers (**Photo A**). They are not sprung, just straight forward turnings from steel (**Photo B**) but you may notice that they are domed. To achieve this I used my large-radius ball turner to achieve the dome (**Photo C**).

I described the ball turner in an article that was published in the December 2021 issue of **EIM** (to obtain a back number see page 9 - Ed). There is a video on YouTube of the buffers being turned at the following link: <https://bit.ly/3CmtfXk>

PHOTO A: The buffers turned up from steel and domed.

PHOTO B: The buffers mounted on the loco buffer beam..

PHOTO C: Using the large-radius ball turner to create the domed finish on the buffer.

A Ramsomes Revival

Howard and Isaac continue their project to complete an unfinished 2-inch scale Ramsomes, Sims & Jeffries 2-inch scale traction engine, this time attaching the boiler to its tender.

BY HOWARD AND ISAAC TRENDLELL Part two of an occasional series

In the first part of this series in the June 2021 issue we introduced the 2-inch scale traction engine that we bought as an unfinished project on Ebay, and described our initial investigations and dismantling. Now Isaac takes up the story...

Progress had stalled somewhat in recent months and the Ramsomes had taken a bit of a back seat due to the purchase of a classic mini project and a seized engine on my dad's telehandler! But now we have finally been able to do more work on moving the project onto the next stage.

Firstly, we got the crankshaft and connecting rods connected to the crossheads with a makeshift gudgeon pin made from a couple of short lengths of silver steel, in order to show where to locate the boiler to allow us to mark out the placement of the required holes in the hornplates. This was a large undertaking in itself, made necessary because the barrel of the brand-new and never-fitted boiler had already been drilled to accept the cylinder block so we couldn't just fit the boiler and tender in any old place!

We got the boiler and tender onto the bench with wooden blocks, metal shim plates and ratchet straps holding it all together. This allowed us to test the motion (crankshaft, con rods, piston rods and pistons) to see whether the pistons collided with the end caps on the cylinder block which would mean making fine adjustments to the final relationship between the tender and boiler, forward or backward.

When we got close to the right spot, we realised that we would need to tighten the motion up so that there was less play in the whole system as this would make our measurements inaccurate (less than desirable when working with fine tolerances!).

Lathe debut

As part of the tightening process, I decided to fabricate new versions of the connectors that join the crossheads to the piston rods. The original connectors were loose on the piston rod and hadn't been made properly to fit the engine.

We saw this as a good time to remake them as they would be an easy first project for the first-time lathe user. We had got our trusty Myford ML7 up and running only a few weeks prior, so this small but important

TOP RIGHT:

Setting up the boiler and tender assembly on the bench for marking out.

CENTRE RIGHT:

View from the 'cab end'.

BELOW:

Piston clearance to cylinder end caps being checked.

FACING PAGE

TOP: Special jig made up for aligning new holes.

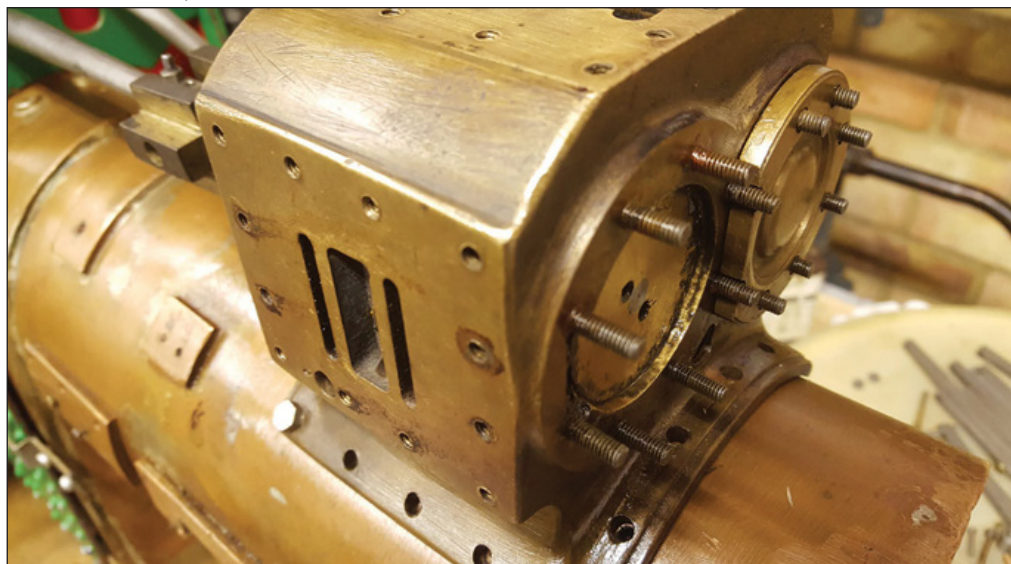
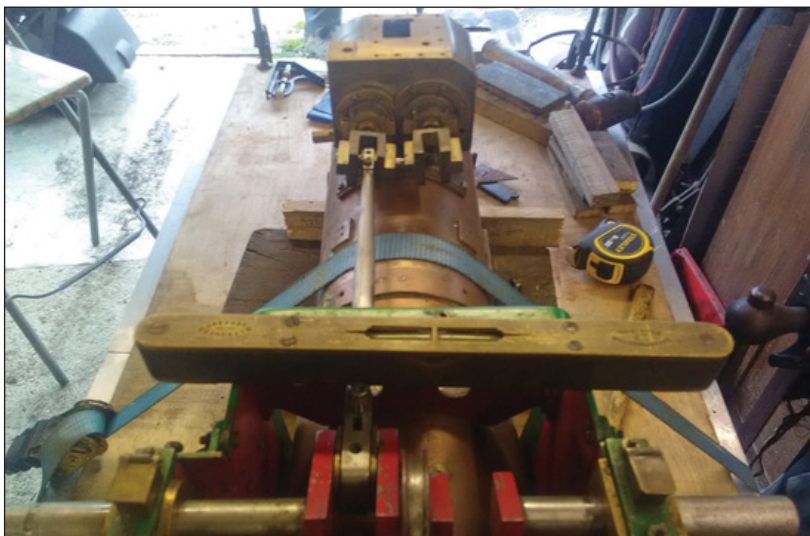
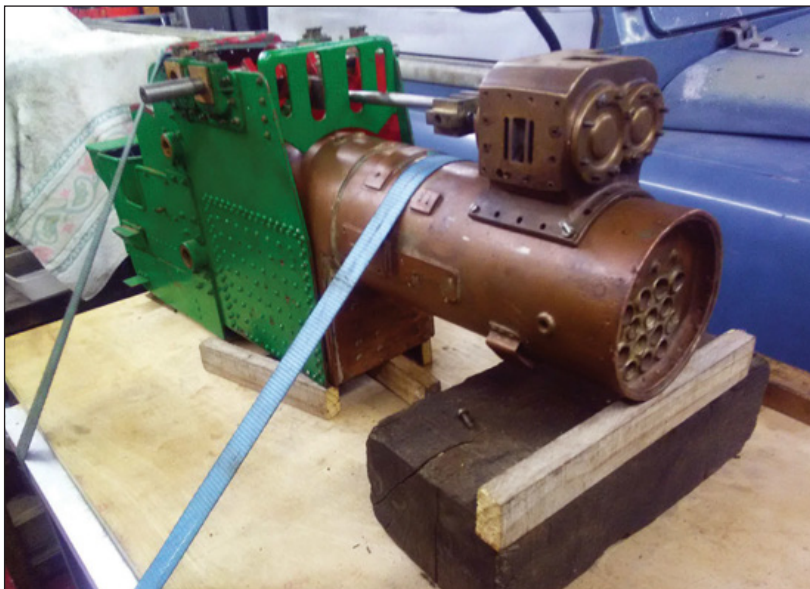
FACING PAGE

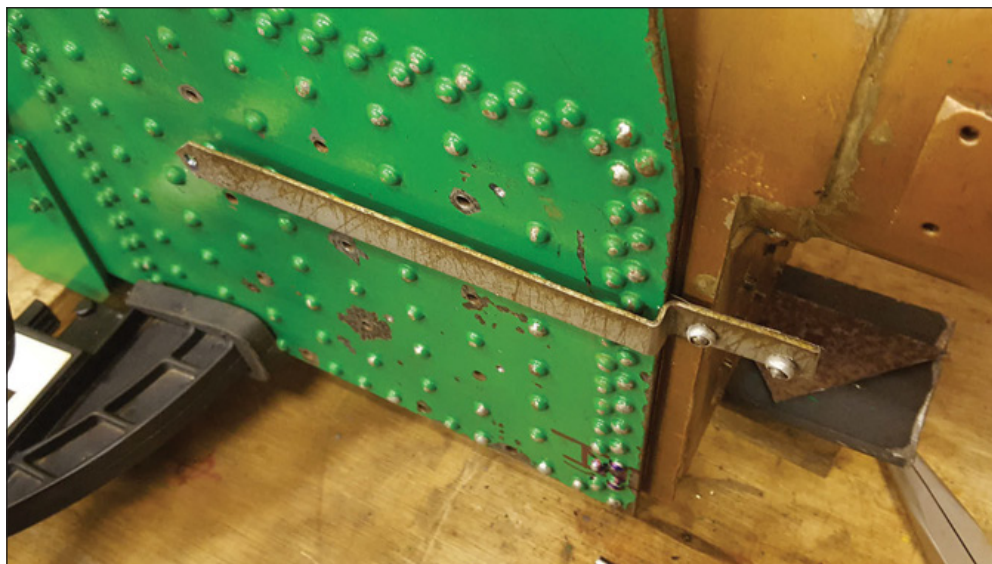
CENTRE: The jig in situ on the hornplate.

FACING PAGE

LOWER: Careful task of accurately aligning the boiler to the tender.

Photos by the authors





component would be the first test for the lathe.

In the metal stock tray, I found a suitable piece of mild steel of just the right diameter and length to make two connectors. I then set the piece of steel in the lathe's three-jaw chuck and made sure it was all tight prior to starting the lathe.

With the centre drill in the Jacobs chuck in the tailstock, I started to centre drill the end of the steel so it would take a live centre to ensure maximum accuracy. With the live

"I should have made the spigot much longer – well that is just part of the learning process..."

centre inserted, the bar needed to be turned down to match the diameter of the original connector already fitted to the engine. I slowly took the piece of bar down by 5 thou' on the hand wheel (10 thou' on the workpiece) until I got the correct measurement for the diameter of the bar.

Once the correct measurement was obtained, the next process was to turn down a small section of the bar for the 1/4-inch UNF thread to be put onto the shaft so the connector would screw into the crossheads. The desired

section was made using a small parting tool of the right width to make the section of bar a suitable length for the thread.

With this last process the machining of the component was finished, so using the same parting tool the component was parted off and the knife tool was put back in place to make another identical connector – using the same method.

After both connectors had been completed, I realised a problem; the 1/4-inch UNF thread needed to screw the connectors to the crosshead blocks couldn't be made due to the very short length left to fit a suitable die. I should have made the spigot much longer – well that is just part of the learning process! Later following further reassembly of the remaining motion, we would discover our new connectors were the least of our worries...

As we made further adjustments to the motion, we could start to think about marking up the final position of the boiler and tender ready to drill the holes. Various theories were considered of how to drill the required 18 holes in the hornplates so that they would line up with the corresponding solid stays in the boiler. A template of the holes could be used but the position of the template would be guesswork so that was no good.

Doing a jig

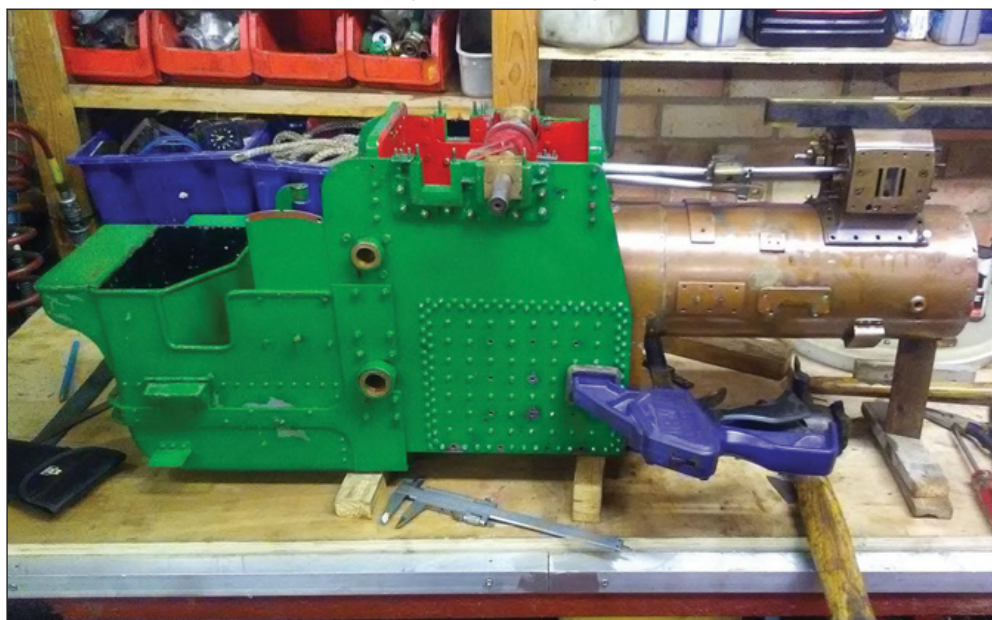
A better method was suggested to us, whereby a small jig was made up in the form of a pair of long thin plates joined together at one end and open at the other and drilled with a pilot hole. The idea is to pass one 'leg' of the jig down between the boiler and tender and line up the hole in the boiler stay, the position of that hole would then be transferred to the outside of the hornplate which could then be marked and drilled accordingly.

This method would then be repeated for the remaining holes with the eventual result of all 18 lining up in the right place.

Once we had marked the position of the boiler to the tender, the next job was to drill and tap the solid stays ready to receive the mounting screws. The stays themselves were exactly as they were when the boiler had been made, in other words not flat or uniform; so it was over to the mill to make them so.

Using a pair of thick parallels to sit the boiler on and armed with a spirit level and set square, we shimmed the base flat to ensure the mill and stays were perpendicular to each other and set about milling them flat down to a uniform height equal to the width between the hornplates, to make sure we could accurately drill the stays.

We repeated the process for the





ABOVE/ABOVE RIGHT: Isaac mills out the firebox stays.

BELOW: Initial holes in the hornplate drilled and test fit.

BOTTOM: Success – the boiler and tender are joined into one unit for the first time.

other side and, once complete, we transferred to the drill press and set about drilling holes to tapping size for 2BA and cutting the threads. We drilled all the way through the stays so that we could line up our special jig

from inside the firebox. This also has the added advantage that, if necessary with long enough screws, we can fit lock nuts on the inside to prevent them from coming loose, quite critical when one considers that this holds the whole thing together!

Now with the stays drilled and tapped, the time came for the nerve-racking job of marking and drilling the hornplates – get this wrong and we would have a lot of work to put it right. The old adage of ‘measure twice – cut once’ now came in to play, but we measured at least a dozen times!

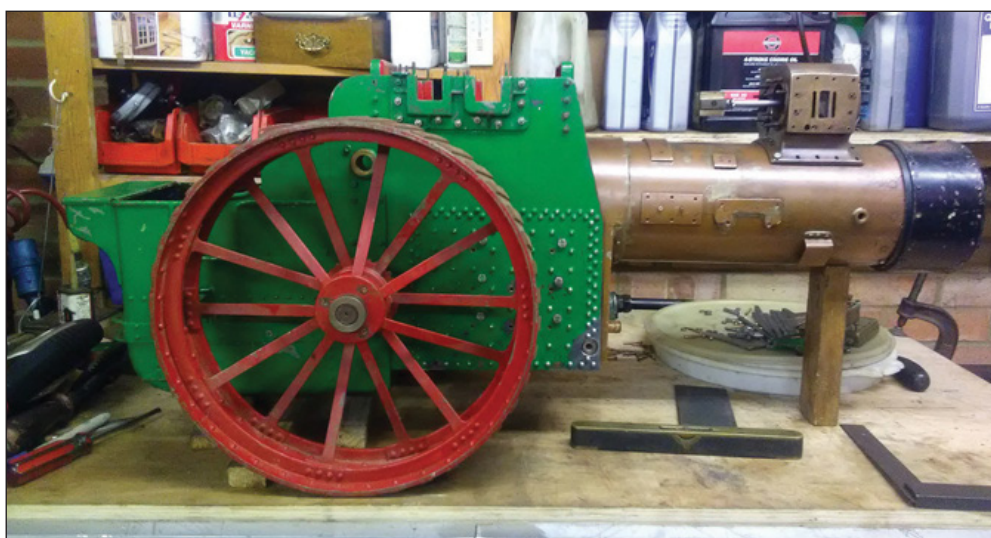
Hand-made holes

With the whole assembly once again strapped down and levelled up to the previous marks, the jig was employed on the first hole. Sliding the inside leg down between the boiler and hornplate a $\frac{3}{32}$ -inch drill was placed through from inside the firebox through the pilot hole in the jig. The hole in the outer leg of the jig was then used to mark the hornplate and a new hole drilled, initially with a hand drill rather than a power drill to lessen any chance of losing control of the drill bit.

The process was repeated taking care to ensure the holes were straight, since we were doing this by hand rather than on a drill press. Once all 18 holes were drilled the final act of joining the two large components together was completed with 2BA stainless steel set-screws.

With the boiler and tender now as one, our attention will turn towards setting the motion in place and assembling this with the crankshaft and, as we have alluded to above, we will have some major alignment issues to overcome... **EIM**

■ Part one of this series appeared in the June 2021 edition of **EIM** – to obtain a digital or printed copy, see page 9.



7¹/₄-inch Gauge Society AGM

Echills Wood hosted this year's popular gathering and John was there.

BY JOHN ARROWSMITH

This year the AGM of the 7¹/₄-inch Gauge Society was held at the Kingsbury Water Park, home of the Echills Wood Railway for the second year running – the Society had been invited by the Railway to hold its AGM there following a successful event in 2021.

Visitors started to arrive on Thursday 15th September so by the time I arrived on Saturday 17th there were already more than 70 locomotives booked in. Obviously this large number of engines takes some organising but the EWR is second to none in providing the necessary facilities for both locos and Society meeting visitors, so the weekend was managed without any real problems. It was a large gathering just enjoying the railway and all its features.

The railway itself is about 1¹/₄ miles long and winds its way through a wooded area of the park starting at the main station, Harvesters, where the line also extends to the station at Far Leys.

The usual place to start is the main shed and steaming bays and this area was always full of activity all



PHOTO 1: The K36 raises the atmosphere as it waits to leave the busy shed area at Echills Wood.

PHOTO 2: Helen Briggs attends to the fire in her 14XX 0-4-2 GWR tank.

PHOTO 3: Sally Nicholson comes through Far Leys Station on her dad John's Romulus.

PHOTO 4: The large Mikado K36 2-8-2 built by Paul Edmonds pauses at Northgate Halt.

Photos by the author



weekend with locos being prepared, departing for their track turn or returning after a good shift. This always creates lots of atmosphere with the familiar odours of hot oil and steam (**Photo 1**).

Having their engines ready to go out on the main line, drivers have a choice of taking a train or just enjoying their own loco without the responsibility of carrying passengers.

Female drivers are not always part of these events but there were a number here who were thoroughly

enjoying their track time and making light work of the interesting circuit such as Helen Briggs from Norfolk with a very nice GWR 14XX 0-4-2 tank loco (**Photo 2**) who happily sauntered round the track. Another competent driver is Sally Nicholson who handles dad John's Romulus with consummate ease (**Photo 3**).

Transatlantic comparison

There was a great variety of locomotives on show and it was interesting to see the huge difference



**PHOTO 5:**

The Mikado dwarfs UK prototypes around it.

PHOTO 6:

The Harrison family leave the shed with their Romulus 2-4-0.

PHOTO 7:

The O1 with Ben Pavier at the regulator heads for the track.

PHOTO 8:

Sol Johnson and his Stafford loco and train approaches Far Leys.

PHOTO 9:

All the way from Scotland was Gavin Forsyth with his Hunslet.

PHOTO 10:

A 4-6-0 LNER B1 with owner Alan Gildersleve approaches Wren Tunnel.

PHOTO 11:

The winners of various Proficiency Badge levels receive the acclaim of the meeting.

PHOTO 12:

Jeff Stevens receives the Society plaque in recognition of holding the meeting at EWR.

PHOTO 13:

Plenty of atmosphere as a Thomas Two-led train approaches Harvesters.

PHOTO 14:

Alan Mitchell brings his Lynton & Barnstaple 'LYN' into Harvesters with a heavy train.

in loading gauges of British and American prototypes. For example the American K36 2-8-2 Mikado owned and built by Paul Edmonds (**Photo 4**) and based on a narrow-gauge prototype dwarfed standard-gauge British locomotives (**Photo 5**).

I also noted the number of younger drivers operating during the weekend. For example, Stuart Harrison always brings his family with him to drive a Romulus loco and I caught two of his grandsons taking grandad for a ride (**Photo 6**).

Another young driver was Ben Pavier taking dad Paul's GNR O1 2-8-0 around the track (**Photo 7**). Meanwhile Sol Johnson from the Mid Cheshire club was happily driving a nicely presented Stafford 0-6-0 saddle tank loco (**Photo 8**) for a long shift on the track. I also met Gavin Forsyth and his uncle Jim who had travelled from Glasgow to run their Hunslet and were really enjoying the event (**Photo 9**), while a very nice LNER B1 4-6-0 with a notably white cab roof was giving owner driver Alan Gildersleve a good day (**Photo 10**).

AGM meeting

Of course the main objective of the weekend was the AGM meeting and this started promptly at 4pm when the Society's acting chairperson Janet T. Royston asked the assembled members to stand for a minute's silence in memory of both Queen Elizabeth II and chairman Frank Cooper who died in May.

The current committee members then all stood and introduced themselves and informed the meeting of what their role was in the Society management. An audio address by President Brian Reading was played for the members and he thanked everyone for attending and the EWR for hosting the meeting again.

The minutes of the previous AGM were formally accepted followed by the annual report with no comments arising from the floor. The meeting then voted all the current officers back into office which was followed by a proposal to reinstate the original subscription rates operating before the Covid pandemic – this was passed by the meeting.

Annual awards were the next agenda item with the Brian Reading award being made to John Cross for his Holmside tank locomotive. The Charles Simpson award made to a non committee member for outstanding services to the Society went to Tony Knowles but there were no nominations for the Junior award.

Bob Whitfield introduced forthcoming events and remarked how successful the mini gatherings held during the year had been – the



next one would be at the Abbeydale Railway of the Sheffield ME.

The Chairperson announced that a new Gold level award in the Society's Proficiency Scheme will be trialled in the next month or two, providing a full range of tests for members to consider. A large group of members had been taking the Bronze and Silver tests and these members were invited to assemble at the meeting to try and invite others to follow in their path (**Photo 11**) – this produced a couple of comments on the subject of a new 7¼-inch gauge choir!

Next year the 50th Anniversary meeting of the Society will be held at the Mizens Railway in Woking and full information will be forthcoming. The dates of the meeting are Friday 22nd to Sunday 24th September but visitors can arrive from Thursday 21st.

Golden plans

The meeting was then asked if anyone had any photos or information about the early years of the Society that could be used in the 50th Anniversary edition of the *News*. Thanks were also paid to current Editor Tim Morton Jones for the quality of the present Society magazine.

A presentation was made to Jeff Stevens in recognition of all the work he has done to get the AGM event organised (**Photo 12**). Thanks were also made to all the EWR catering staff who had worked so hard over the weekend keeping everyone fed and



watered – appreciated by all the Society members attending.

A discussion then ensued about the venues for future meetings and the Chairperson said a number of areas were being considered and details will be published at a later date.

Once the meeting closed running continued on the track and of course on Sunday when the general public were allowed into the railway to enjoy rides as they usually do on a Sunday. This provided some heavy train movements with well-loaded trains running through most of the day. (**Photo 13-14**).

It only remains for me to offer my sincere thanks to everyone at the EWR for another great weekend with excellent catering and good humour, it was a real pleasure to be there. **EIM**





End of an era as Rhiw Valley holds its final open day

One of the UK's longest-lasting but less well-known miniature railways held its final Open Day on 2nd October ahead of closure after half a century of operation.

The Rhiw Valley Light Railway was built to 15-inch gauge close to the mid-Wales village of Berriew in the early 1970s by miniature railway enthusiast Jack Woodroffe.

Jack was already a model engineer running a 7¼-inch gauge garden line which when he retired he planned to upgrade to 10¼-inch gauge. These plans changed when on a visit to Severn Lamb Ltd he viewed the 15-inch gauge steam locomotive 'Zebedee' which was under construction at the time for a line at the Longleat Safari Park.

Jack bought a 90-acre mid-Wales farm, only two miles from the well-known 2ft 6in gauge Welshpool & Llanfair Light Railway, and his line was operating by 1973 when its first steam loco 'Powys', an 0-6-2T built by Severn Lamb, arrived.

The private line continued to run, with regular open days, until 1990 when Jack died. After this the open days were continued by his widow Helena and his son

Mike – Helena effectively subsidised the operation and in 2003 a second steam engine arrived. 'Jack' is an 0-4-0 tender loco started by Jack Woodroffe and completed by TMA Engineering in 2003, while the fleet also includes 'Monty', a petrol-driven 0-4-0.

For several years the line had only one open weekend a year, coinciding with the W&LLR's Gala, but over the past decade a programme of monthly open days had been held over the summer months. With the aid of a small team of volunteers, Mike also had plans to further expand the around three quarters of a mile line and to add a third steam loco, a 15-inch gauge version of his favourite Lynton & Barnstaple Manning Wardle 2-6-2Ts.

However Helena died recently aged 93 since when Mike, who lives in the Midlands, had found running the line more challenging.

"Mike said that since his mother's death railway activities had "not been the same" and that there was the extra financial burden without his mother's contribution," RVLR volunteer Mark Lyddon told **EIM**.

"The cost of coal, or its alternatives, are

unlikely to reduce in the near future. Because Mike ran the railway as a benign dictatorship he carried all the myriad mundane tasks such as arranging boiler inspections, insurance and repairs which often entailed extra visits to the railway, a great consumer of his time."

Mark added that a lack of volunteers was also a growing problem (and one currently shared by many heritage railways). "We have about 15 volunteers and probably only three will see 60 again.

"Two of them regularly have other weekend calls on their time and allowing for sickness and special occasions can leave us quite tight in numbers for operations."

The final open day saw more than 200 people taking a final ride on the line, Mike telling **EIM** editor Andrew Charman that the day left him with a feeling of both sadness and relief.

The very final train was double-headed by both Powys and Jack and completed two runs in each direction of the out-and-back circuit that runs around two large fields on the property..

The line will now be dismantled over the coming months but the future of the stock is yet to be determined.

Mark admits that many will be sad to see the line go. "The RVLR is almost unique as an overgrown garden railway," he said. "We have never had huge visitor numbers but we have all had fun."

TOP: The final double-headed train heads out onto the Rhiw Valley Light Railway .

ABOVE: The finale attracted a big attendance .

LEFT: All available motive power was in use.



Photos: Andrew Charman

For Doncaster in May read Harrogate in February

Just as this issue went to press we learnt that the National Model Engineering Exhibition is set to make a comeback in 2023 – but not at its Doncaster venue, and not in the month of May.

While an official announcement is yet to be made, it seems that the show will be heading for the Great Yorkshire Showground at Harrogate – its home before the move to Doncaster in 2016.

The show was last held in May 2019, with the last three years lost to the Covid pandemic and its aftermath. Now model engineering clubs are being sent invitations to attend the 2023 event which will not only be moving back to its former Harrogate venue, but also being held earlier in the year, on 24th and 25th February.

Simon Boak, who started the show in 1994 and ran it until retiring ahead of its move to Doncaster has now returned to organising the event at Harrogate, adding that the exhibition halls at the Yorkshire Event Centre have undergone extensive refurbishment and renovation since the show was last held there six years ago.

The dates also indicate the switch from a three to two-day event. In his invitation to clubs, Simon adds that scaling back to two days will save on costs for exhibitors, traders and organisers. Evidence from recent events has shown that Friday and Saturday are busy days while Sunday attendance has declined.

We hope to bring you more news on the welcome return of the National show as we get it.

But no London show in '23

Less positive news, if not really surprising, is that there will not be a London Show in 2023 – the event last having been staged in January 2020 at Alexandra Palace just before the Covid pandemic hit.

Organiser Meridienne Events, which also runs the popular Midlands Model Engineering Exhibition, have not given details of the reasons for the decision but we do know that the logistics of running a show in London have become steadily more difficult in recent years, not least the costs of attending and securing accommodation for both exhibitors and visitors.

For some time the show has had to compete with a major snooker tournament held at Alexandra Palace over the same weekend, putting pressure in particular on car parking, while **EIM** understands that the venue has now introduced charges to all its car parks, further increasing the costs of entry.



Scenes like these, photographed by **EIM** editor Andrew Charman at the 2018 event, are set to return at the National Model Engineering Exhibition next year – but not in Doncaster, but Harrogate.



LETTERS

What happens when the coal runs out?

We see lots written in the 'full-size' heritage press these days about the ongoing threat to coal supplies, but very little it seems on the likely consequences for our miniature locomotives.

Is anything happening in the miniature world to address an issue that can only become more significant as time goes on? I would not want to be starting a model build project that could take me a good few years to complete if there was the very real prospect of having no suitable fuel to run it on once it was built.

Mike Metcalfe

The editor replies: It's a very valid point that Mike makes, but rest assured neither the miniature engineering movement or **EIM** is ignoring the question of future coal supplies.

We have already carried articles on experiments with potential substitutes – back in the November 2021 issue we reported the experiences of the Andover club in trialling various 'eco' coal substitutes while tech ed

Harry has described some interesting experiences on the Fairbourne Railway with a substitute made from rapeseed waste.

The latter in particular we hear widely varying reports about, some railway operators saying it's a workable solution while others dismiss it as a non-starter. We are in conversation with the company behind it and plan to publish a more in-depth feature on it in due course. We will also be following other developments closely in conjunction with our sister magazine *Narrow Gauge World*.

On which note, we also have a feature coming up on a company in New Zealand that is proposing completely new boiler technology for future builds and loco replacements, evolving from the work of the late and much respected engineer Livio Dante Porta. This boiler burns biomass and its proponents claim it could make steam the sustainable answer for the future.

Interesting times – rest assured we are fully aware of the importance of this

question, it cannot be ignored and we are following developments closely. Keep reading **EIM** for more in due course...



Planning for the winter ahead

Public trains are stabled away for a while but there's much going on in the clubs...

COMPILED BY **ANDREW CHARMAN**

A shortened *Club & Track News* this month due to the special report on the Federation annual Rally on the next pages, but still lots to get in!

Our news pages this month report on the sad closure of one of Britain's long-established miniature railways, but there is also news this month of the reopening of another.

As reported in these pages last month the **Poole Park Railway** is a 10¼-inch gauge line laid down back in 1949 in the Dorset seaside resort by Southern Miniature Railways, which also ran other lines including in Bognor Regis and Southsea – only the Poole one survives. The local council ended a tenancy agreement with a previous operator in 2017 and initially wanted the track removed before seeking tenders for a new operator.

A public backlash put paid to that idea but the following years were trying as groups tried and failed to run the line. Eventually grant aid and further finance saw the council put some £350,000 into the line, including having the track rebuilt by miniature railway specialist Track Systems.

A grand reopening took place in September with the Borough Council of Poole running the line supported by volunteers. Mind you they quickly discovered the challenges of operating a miniature railway, suffering a minor derailment within a week of reopening allegedly caused by stones being deliberately placed on the track.

A big selection of Society magazines and newsletters have been dropping through the **EIM** mailbox in recent weeks, both electronic and physical, including the latest colourful and large-format edition of *7¼ Inch Gauge News* from the Society of the same name, their popular AGM meeting featuring in the pages of **EIM** this month.

Proficiency progress

Reading the editorial page I'm glad to see plans to move forward with the Society's Proficiency Scheme – as an acquaintance of late Society chairman Frank Cooper your editor knows that this programme was dear to Frank's heart and the forthcoming Gold Award is a positive move. Imparting knowledge to a wider spread of people is one of the great aspects of our hobby to be encouraged.

Writing in the latest *Criterion*



THIS PAGE:

Ken Jones has been roving with his camera, checking out some miniature lines for us including the very impressive Lakeshore Railroad in South Shields, the only publicly operating 9½-inch gauge line in the UK.

from the **High Wycombe ME**, Chairman Bill Richardson reports on what he describes as “the busiest public running day for some time.” Reading on it seems that the August public running day saw some 803 tickets issued, an all-time record apparently and always good to read – lots of public visitors means boosts to club funds, helping clubs better serve their members and encourage their model engineering projects (yes okay, and hopefully also encouraging more submissions to us describing those model engineering projects!).

On a related note, excellent news in the latest edition of the *COSME*

Link from the **City of Oxford SME**, with plans to set up a new workshop for the use of members. Society officials have apparently been having discussions for some time with the aim of attracting new members and providing better facilities for existing ones, and have been inspired by the facilities other Societies have access to.

Workshop plans

The intention is to revamp the existing workshop building and divide it into two sections, one for locomotive and carriage storage and the other as a workshop housing lathe, pillar drill, guillotine, sand blaster, a large





workbench and storage cupboards and eventually a mill. The Society has been fortunate in being able to purchase a complete workshop contents for a reasonable price.

This is great to read as while running trains through the summer months is a core activity for most of today's model engineering clubs, enabling members to build things is just as important as that is what the hobby is all about, and having such facilities available at a club is particularly useful in these modern times of restricted living space, costs and such conspiring against setting up a workshop at one's home.

The cover of the latest newsletter from the **York ME** features midgets of a different type – submarines! It seems in the Second World War two X Craft, midget submarines, were built in the unlikely marine hub of Huddersfield. Broadbent Engineering, until this point known for making cylindrical tanks for agricultural use, built X20 and X21, while four more were built in

Gainsborough and Chersterfield.

Of course the York newsletter does not forget about more core model engineering subject matter and the model of the month, a superb Adams Radial tank built by member Martyn Blackburn, certainly strikes a chord with this correspondent, reminding me of the one on the Bluebell Railway – this was my closest preserved railway as a child while when my fiancée Rosemary and I bought our first flat in 1988 it was right over the Bluebell line's Sharphorne Tunnel!

Celebrations at the Puffing Park track of the **St Albans & District ME** with the recent grand opening at the club's annual barbecue of a new 45mm garden scale track. Writing in the club newsletter club chairman Mike Collins says that the new facility is already very popular and suggests that judging by the chatter around it may quite quickly be enhanced. There are also hopes that it will attract more members to join the club.

Elsewhere in the newsletter your

"One of the happiest photos of Her Majesty was when she rode on the footplate of locomotive 'Mariloo' at Exbury Gardens..."

ABOVE: Ken also called in at the Beckonsot Model Village near Maidenhead and captured what is one natty 7¼-inch gauge tramcar. Note though, while photos of various miniature railways are always interesting, we'd far rather run pictures from the club tracks – but we need some sent in... Photo: Ken Jones

LEFT: So is it a Virginia? Rugby members Glyn and George bring a very American-looking loco to life on the raised track. Photo: Rugby ME



editor was drawn to a piece on promoting the St Albans' club exhibition using social media. Now while some readers may immediately think of "The evils of Facebook" the piece does show how when used properly social media can be a very powerful tool in getting our messages out to the wider world. I very much concur with this, using social media all the time 'in the day job'...

Nice to see the President of the **Bradford ME**, Jim Jennings, complimenting us on the up-to-date nature of our *Club News* pages in the latest edition of the Society's *Bulletin* – we try our best!

Royal recollections

Notable elsewhere in the newsletter is a photo of a member's 'Poppy' locomotive at the September public running day wearing a wreath made by member Yvonne Coppin and marking the passing of Queen Elizabeth II. We know of several clubs that made similar arrangements and we are reminded just how much of a global event her passing is by *The Workbench* of the **Durban SME** in South Africa, which opens with a message of condolence to all British model engineers.

All this does remind your editor of one of the happiest photos he ever saw of Her Majesty, riding on the footplate of locomotive 'Mariloo' during a private visit to the 12¼-inch gauge **Exbury Gardens Railway** in 2008. The late Leopold de Rothschild, who built the Exbury line, was a close friend of the Queen and during her visit she officially named his newest loco.

Elsewhere in the **Durban** newsletter is a quite scary picture of a Gauge 1 boiler, cut longitudinally into two halves! Apparently a member built it as a hoped-for improvement on the original Smithies-type boiler designed by LBSC, but the regulator was too close to the water level and the loco primed – even a superheater tube in direct contact with the flame could not dry the steam quickly enough to prevent the ejection of dollops of steam, oil and water. So lesson learnt, but slicing it in half? A bit drastic...

Staying in South Africa and *The Smokebox* from the **Rand SME** includes a fascinating piece on railcars on the nation's main lines which really were rail-cars – mostly ancient Austin Sevens with their wheels and tyres making way for flanged replacements. Apparently the Seven's track (width between the wheels) was just right for the 3ft 6-inch gauge of South African main lines...

Finally another packed newsletter from the **Rugby ME**, with on the front page a great shot of two members

Continued on page 43 ►

Fewer visitors but plenty of fun

The Federation's annual Rally focused on some pressing matters while enjoying the hobby.

BY MIKE CHRISP

This year the Federation of Model Engineering Societies annual rally was kindly hosted by **Sutton Coldfield ME** at the club's attractive Balleney Green site at Little Hay. The rally took place on Saturday 3rd September, however SCMES ran an informal visitors' day on the Sunday for people wishing to make a longer weekend of it. According to the records for Saturday, there were only 23 visitors with 13 locomotives, and this was a reduction on 2021's attendance.

Those who did make the effort to come enjoyed an excellent day and felt sorry for the absentees. We are very grateful for the efforts of SCMES members and friends who worked hard beforehand to ensure everything was ready and spent time during the event looking after their visitors.

The Little Hay site boasts a ground level track approximately half a mile long for 7¼ and 5-inch gauge locomotives and rolling stock, a 480ft long raised track with 5, 3½ and 2½-inch gauges and a very attractively landscaped 300 long SM32 (16mm scale 32mm gauge) layout that SCMES operated for the event, along with a 'bits and pieces' stall for club funds.

Global co-operation

Saturday's proceedings included the annual competition for the Australian Association of Live Steamers Trophy awarded to the best working steam locomotive at the event modelled on a Commonwealth prototype in any gauge from 2½ to 7¼-inch inclusive. The winner is chosen by a team of three judges consisting of last year's



ABOVE:

Activity in the steaming bays for the 480ft raised track at Sutton Coldfield.

BELOW:

Sue Parham passes the attractive 300ft long SM32 layout on the raised track.

Photos by the author except where stated

winner and representatives of the host society and the Federation. This year's judges were Martin Parham, Phil Davies and Ivan Hurst respectively.

A similar annual competition for the Federation of Model Engineering Societies Trophy is held in Australia at the AALS Easter Convention. These trophies commemorate the affiliation of the two organisations and were first contested in 1966.

This year's AALS Trophy winner was David Mayall with his 5-inch gauge BR Standard Class 2 locomotive. Very finely detailed and extremely well finished, it ran sweetly and attracted many admiring comments. Mike Chrisp, an FMES

Vice President, awarded David the AALS Trophy during the presentation which was introduced by Bob Polley, the FMES Chairman.

FMES Vice Chairman Paul Naylor followed to say a few words about a matter that affects us all concerning the need for encouraging active and enthusiastic volunteers to support the representative organisations including, of course, FMES.

The representative organisations carry out co-ordinated activities that are essential for the existence of much of the hobby (such as boiler testing and providing health and safety guidance) let alone other support that is or could be provided to enhance the





ABOVE: Mike Chrisp presents David Mayall with the Australian Association of Live Steamers Trophy. Photo: Sue Parham

BELOW: David Mayall enjoys a run with his award-winning 5-inch gauge BR Class 2 loco.

hobby's prospects for growth and modern relevance.

Without new volunteers bringing new energy and abilities to sustain and enable these, the representative organisations will cease to be. Paul ended this sombre comment with an appeal to all to consider volunteering to support and enhance their hobby.

SCME Secretary Martyn Cozens and Ivan Hurst, the other FMES Vice President, then brought formalities to a close. Martin Parham received the SCME award for having travelled the furthest to attend the event.

The day concluded with a barbecue, much enjoyed by all present, accompanied by a choice of hot and

cold drinks which had also been available throughout the day. Bacon baps were served first thing and hot samosas and a selection of cakes at lunchtime. Thanks are due to Ray and Anna Gilbert of SCMES for all their work with the catering.

FMES is pleased to announce that next year's rally and competition will be held at Frimley and Ascot Locomotive Club's extensive mixed-gauge ground level and raised track in Surrey (on the perimeter of the famed racecourse) over the weekend of 16-17 September 2023. Please see www.fmes.org.uk for more details as they are published, as well as other news and events concerning the hobby. **EIM**



"In the days before ordering lovely laser-cut metal, trying to cut the bar frames out of steel plate put me off at a very early stage..."

Continued from page 41

steaming up an American-style loco on the Society's raised track. It looks like a 3½-inch gauge 'Virginia', another loco that appears on the list of my started but not completed build projects over the years. Mind you my efforts to build this engine were very short-lived. In the days before ordering lovely laser-cut metal, trying to cut the bar frames out of steel plate put me off at a very early stage!

Sun stopped play

Rugby was one of several clubs forced to abandon its public steam services during the hot, dry summer due to the fire risk to a parched environment – in fact the local Fire Service had to attend a small fire quite close to the club's raised track.

While obviously this is a serious concern I do admit to a sense of wry amusement as I write these words with early October torrential storms rattling the office windows! (and then the first thing I spot in the South African Rand SME's newsletter are the words "Spring is in the air..."). Still, I've seen the reservoirs in the Welsh mountains and we need a lot more of the wet stuff yet... **EIM**

NOTICE BOARD

When the current editor first took over **EIM** back in the March 2018 issue he was asked several times if the readers' *Notice Board* section would be reintroduced, printing free of charge private for sale or wanted ads, queries and such like. We replied if the ads were sent to us we'd print them.

In the time since we have been able to print *Notice Board* requests on occasions, but rare occasions. Below is the latest and gives us an opportunity to emphasise that this is a free service that readers are welcome to take advantage of. If you have something for private sale, are searching for that elusive casting or drawing, or just want to alert your fellow model engineers to something of interest, simply send in details to the address on page 3, marked 'Notice Board' and we'll put it in! We would like run this column every month...

FOR SALE: A trailer to suit a 1-inch or 2-inch scale traction engine. New, constructed in wood with a lifting seat for storage. Unwanted and space needed. £50. For details and photos please ring Derek on 01772 752150 or e-mail derekwells1@hotmail.co.uk



DIARY

NOVEMBER

- 1 Romney Marsh ME** Bits & Pieces/ Bring & Buy Evening, Rolfe Lane, New Romney, 7.30pm
- 2 Bradford ME** meeting, Annual Auction, Saltaire Methodist Church, 7.30pm
- 2 Bristol ME** meeting, Talk on the Camerton Line, Begbrook social club, BS16 1HY
- 2 Leeds ME** meeting, The Myford Lathe by Geoff Shackleton, Mid Yorkshire Golf Club, Darrington, 7pm
- 5 Grimsby & Cleethorpes ME** Bonfire Night public running, Waltham Windmill, DN37 0JZ, 12-4pm
- 5 Tiverton & Dist ME** afternoon/ evening running, Rackenford track, EX16 8EF
- 5 York City ME** Bonfire night running, Dringhouses, The Pastures, York YO24 2JE 5pm
- 6 York City ME** members running, Dringhouses, The Pastures, York YO24 2JE
- 9 High Wycombe ME** club meeting, Accuracy relating to timekeeping by Geoff Mansfield, Rossetti Hall, Holmer Green HP15 6SU, 7.30pm
- 10 Cardiff ME** meeting, Five Boys and A Pasty by John Sheen, Heath Pk, Cardiff CF14 4AW
- 10 Norwich SME** meeting, Ipswich road URC, Norwich
- 10 Worthing SME** club meeting, Field Place, 7.30pm
- 12 York City ME** meeting, evening talk, Dringhouses, The Pastures, York YO24 2JE 7pm
- 15 Grimsby & Cleethorpes ME** members meeting, Hartley Lodge, Waltham Windmill, DN37 0JZ, 7.30pm
- 16 Bristol ME** meeting, via Zoom, 'on the computer' – contact secretary@bristolmodelengineers.co.uk
- 16 Leeds ME** meeting, 'Record' and other vices by Jack Salter, Mid Yorkshire Golf Club, Darrington, 7pm
- 19 Cardiff ME** Steam Up & Family Day, Heath Pk, Cardiff CF14 4AW
- 19 SMEE** Engine Builders Group meeting, Marshall House, London SE24 0HW, 2.30pm
- 20 Tiverton & Dist ME** running, Rackenford, EX16 8EF
- 20 York City ME** members running, Dringhouses, The Pastures, York YO24 2JE
- 24 Cardiff ME** meeting, members' projects, Heath Pk, Cardiff CF14 4AW
- 24 Worthing SME** club meeting, Field Place, 7.30pm
- 26 SMEE** Rummage/Disposal Sale, Marshall House, London SE24 0HW, 2.30pm (viewing from 11am)
- 27 High Wycombe ME** Sunday morning Steam-up, Watchet Lane, Holmer Green HP15 6UF
- 10 Havering MRC** public Santa Special trains, Lodge Farm Park, Romford. RM2 5AD
- 10 SMEE** Christmas Social, Marshall House, London SE24 0HW, 2.30pm
- 10 York City ME** meeting, evening talk, Dringhouses, The Pastures, York YO24 2JE, 7pm
- 11 Bradford ME** Santa Special public running, Northcliff track, Shipley, 11am-3-15pm
- 11 City of Oxford SME** public running, Cutteslowe Pk, Oxford OX2 8LH, 1-4pm
- 11 Guildford ME** Small Model Steam Engine Group open meeting, Stoke Pk, Guildford GU1 1TU, 2-5pm
- 11 Worthing SME** Santa Run, Field Pce, Worthing, Sussex 2-5pm
- 14 High Wycombe ME** club meeting, Bits & Pieces Evening, Rossetti Hall, Holmer Green HP15 6SU, 7.30pm
- 18 City of Oxford SME** public running, Cutteslowe Pk, Oxford OX2 8LH, 1-4pm
- 18 Tiverton & Dist ME** Sunday steam-up, Rackenford track, EX16 8EF
- 20 Grimsby & Cleethorpes ME** members meeting, Hartley Lodge, Waltham Windmill, DN37 0JZ, 7.30pm
- 21 Bristol ME** meeting, via Zoom, Look back at the last year – contact secretary@bristolmodelengineers.co.uk
- 26 High Wycombe ME** Boxing Day Steam-up, Watchet Lane, Holmer Green HP15 6UF
- 26 Bradford ME** Mince Pie Special public running, Northcliff track, Shipley, 11am-3-15pm
- 26 Grimsby & Cleethorpes ME** Boxing Day public running, Waltham Windmill, DN37 0JZ, 12-4pm
- 27 Havering MRC** public running, Lodge Farm Park, Romford. RM2 5AD, 11am-3pm

DECEMBER

- 1 Cardiff ME** meeting, Old pictures of Cardiff by David Green, Heath Pk, Cardiff CF14 4AW
- 2 SMEE** Digital Group online meeting, contact digital@sm-ee.co.uk, 2.30pm
- 3 Tiverton & Dist ME** steam-up, Rackenford track, EX16 8EF
- 4 Guildford ME** Open Day, Stoke Pk, Guildford GU1 1TU, 2-5pm
- 4 York City ME** members running, Dringhouses, The Pastures, York YO24 2JE
- 7 Bournemouth SME** AGM, Littledown Railway, Bournemouth BX7 7DX
- 7 Bradford ME** Films & Social meeting, Saltaire Methodist Church, 7.30pm
- 7 Leeds ME** meeting, Quiz Night, Mid Yorkshire Golf Club, Darrington, 7pm

Details for inclusion in this diary must be received at the editorial office (see page 3) at least EIGHT weeks prior to publication. Please ensure that full information is given, including the full address of every event being held. Whilst every possible care is taken in compiling this diary, we cannot accept responsibility for any errors or omissions in these listings.

Coming next month in... THE MAGAZINE FOR MODEL ENGINEERS **ENGINEERING in Miniature**



- Conway – challenges of a loco build
- Midlands Show full report
- Ride-on tender project continues
- G1 cab interior restoration
- ...and much more!

December issue on sale 17th November

Contents correct at time of going to press subject to change

Large Locomotives - All Electric!



**No Noise
No Fumes
No Reduction in Power**

**100% Electric
0% Emissions
0% Compromise**

**LARGE SCALE
LOCOMOTIVES**

Light Railway Engineering

www.largescalelocomotives.co.uk Tel 07368 254 382

PNP
Railways

Wagon Parts

5" | 7¼" | 10¼" Gauge



**QUALITY ASSURED
MADE IN
THE UK**
By Paul Norman Plastics Ltd

Tel: 01453 83 33 88 | www.pnp-railways.co.uk

Steamways Engineering Ltd



**WORKING LIVE STEAM SCALE MODELS, SPECIALIST PARTS
MANUFACTURE. PRE-MACHINED KITS FOR WORKING
STEAM LOCOMOTIVES IN 5" AND 7¼" GAUGES**

- BESPOKE PARTS MACHINING
- STATIONARY AND MARINE
ENGINES MANUFACTURED
- FULL PAINTING & LINING
SERVICE
- EC COMPLIANT
BOILERS FOR
SALE
- UNFINISHED
MODELS
COMPLETED



ALL MAJOR CREDIT AND DEBIT CARDS ACCEPTED

STEAMWAYS ENGINEERING LTD
Dovecote House, Main Road, Maltby Le Marsh, Alford,
Lincs, LN13 0JP
Tel/Fax: 01507 206040
Email: info@steamwaysengineering.co.uk

www.SteamwaysEngineering.co.uk



SUBSCRIBE

If you're enjoying reading *Engineering in Miniature*, and you would like to explore the hobby in depth, in your own time, why not subscribe and we'll deliver a lot more directly to your door, every month.

There are 2 easy ways to receive *Engineering in Miniature*. Which format is best for you?

PRINT



- Have each issue posted through your door in high quality print.
- Get away from a screen and enjoy the tactile nature of flicking through the pages of the magazine.
- Receive your issue one week before it is on sale in the shops.

3 ISSUES FOR £5

After your three issues your subscription changes to a quarterly Direct Debit of £10.99.

DIGITAL



- Instant access to the magazine as soon as it's published.
- Read the magazine on your tablet, desktop or smartphone.
- App is free to download, in-app purchase of individual issues, or take out a subscription.
- Page view replicates of the print version and a mobile-friendly digital version makes for easy reading.

SUBSCRIBE

from just £4.17 an issue!

VISIT: www.bit.ly/eimsmags20
CALL US ON: 01778 392465
 (Quote: EIM/MAG20)

DOWNLOAD:
www.bit.ly/eimsdigital

MAXITRAK.COM

OVER 40 YEARS
EXPERIENCE

The best of model rail and road

5" Gauge L.M.S 4F

Painted Kit

£6850

Ready to Run

£7065

Option for TIG Welded Boiler



1.5" Scale Allchin

Ready to Run

£3495



5" Gauge Brush

Unpainted Kit £995

Painted Kit £1935

Ready to Run £2160



Pay Monthly terms & conditions apply

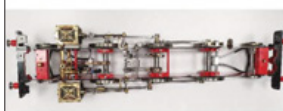
10 /11 Larkstore Park, Lodge Road, Staplehurst, Kent,
TN12 0QY Tel : 01580 893030 Email : info@maxitrak.com



POLLY MODEL ENGINEERING LIMITED



Find us on



Build your own 5" gauge coal fired 'POLLY Loco'

Buy with confidence from an

Established British Manufacturer



Supplied fully machined, assembly requires hand tools only – no riveting, soldering or other complex processes. Kit includes British made boiler UKCA & CE stamped and accepted under Australian AMBSC regulations.

Model is supplied as a succession of kit modules. Spare parts easily available.
12 models to choose from, tank engines, tender engines, standard gauge/narrow gauge – something for everyone! Prices from £5999 including VAT and UK carriage. Build & cost is spread over 12 months.

Catalogue £3.00 UK £8 international posted (or download for free!) and enquire for further details or visit our website where you will find other Polly Locos, Kits, drawings and castings for scale models and comprehensive ME Supplies.

Polly Model Engineering Limited
Atlas Mills, Birchwood Avenue,
Long Eaton, Nottingham,
NG10 3ND, United Kingdom

www.pollymodelengineering.co.uk
Tel: +44 115 9736700
email:sales@pollymodelengineering.co.uk

Tracy Tools Ltd

Model Engineering Supplies

Visit our website:

We ship anywhere in the world

www.tracytools.com

PRODUCTS

- Taps and Dies
- Centre Drills
- Clearance Bargains
- Diestocks
- Drill sets (HSS) boxed
- Drills
- Drills set (loose) HS

- Endmills
- Lathe Tooling
- Reamers
- Slot Drills
- Specials
- Tailstock Die Holder
- Tap Wrenches
- Thread Chasers

Acme
Taps



Taper Shank
Drills HSS



Reamer



Taps &
Dies



UNIT 1, PARKFIELD UNITS, BARTON HILL WAY, TORQUAY, TQ2 8JG



Tracy Tools Ltd

Tap & Die Specialist, Engineer Tool Supplies

Tel: 01803 328 603

Fax: 01803 328 157

Email: info@tracytools.com

www.tracytools.com



TEE
Publishing Ltd

A leading specialist supplier and publisher of technical and modelling books for the model engineer and modeller worldwide for over 60 years.

OUR RANGE INCLUDES BOOKS ON THE FOLLOWING TOPICS:

- Boilermaking, Soldering, Brazing and Welding
- Casting and Foundrywork for the Amateur
- Gears and Screwcutting
- Hot Air Engines
- Lathes and Other Machine Tools
- Stationary Steam Engines

For our full range please see our website

**ORDER
NOW FOR
CHRISTMAS**

www.teepublishing.co.uk

T: 01926 614101

E: info@teepublishing.co.uk

**UK MANUFACTURES OF LIVE STEAM
LOCOMOTIVE KITS IN GAUGE 1 & 3**



GER E22, Gauge 3,

Spirit kit £2,255.
Static kit £1,353.

Pack 1, body work
In stock

Spirit fired, twin cylinder, hand and axle pump

www.barrettsteammodels.co.uk

Tel no. 01922 685889

The Old Exchange, 47a Coronation Rd, Pelsall, Walsall, WS4 1BG

MODEL MAKING METALS

1/32in. to 12in. dia. bright steel, stainless steel, bronze, spring steel, brass, aluminium, silver steel, steel tubes, bolts, nuts & screws, tap dies + drills, white metal casting alloys.

Fine materials, chain, plastic.

Lathe milling machines and equipment, new and secondhand.

Mail order nationwide and worldwide callers

Mon.-Fri. 9 - 5pm. All cards welcome.

*Send now for a **FREE** catalogue or phone*

**Milton Keynes Metals, Dept. ME, Ridge Hill Farm, Little
Horwood Road, Nash, Milton Keynes MK17 0EH.**

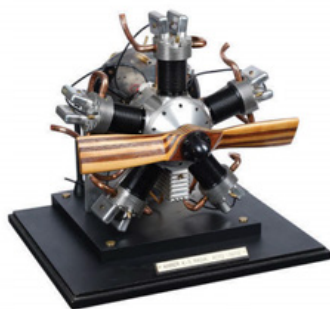
Tel: (01296) 713631 • Email: sales@mkmetals.co.uk

www.mkmetals.co.uk

ADVERTISERS' INDEX

ABBOTS MODEL ENGINEERING	49
AP MODEL ENGINEERING	50
BARRETT STEAM MODELS	48
DREWEATTS	49
GB BOILER SERVICES	50
HOME & WORKSHOP	52
HORLEY MINIATURE LOCOMOTIVES.....	50
ITEMS MAIL ORDER	50
LARGE SCALE LOCOMOTIVES.....	45
LIVE STEAM MODELS.....	49
M J ENGINEERING.....	49
MACC MODEL ENGINEERS	50
MAXITRAK	47
MECCANO SPARES.....	50
MILTON KEYNES METALS	48
PAUL NORMAN PLASTICS	45
POLLY MODEL ENGINEERING	47
R.A BARKER ENGINEERING.....	50
SILVER CREST MODELS	5
STATION ROAD STEAM.....	51
STEAMWAYS ENGINEERING	45
STUART MODELS	2
TEE PUBLISHING	48,50
TIGGY ENGINEERING	50
TRACY TOOLS	47
WALKER MIDGLEY INSURANCE.....	49
WE BUY ANY WORKSHOP	50
WILLIAM ROWLAND	4

THE TRANSPORT SALE | 1 NOVEMBER 2022 | 12PM



A fine exhibition standard model of a Kinner K-5 radial aero engine
Est. £1,000-2,000 (+ fees)

AUCTION LOCATION
Dreweatts
Donnington Priory
Newbury
Berkshire RG14 2JE

ENQUIRIES
+44 (0) 1635 553 553
transport@dreweatts.com

Catalogue, viewing times
and free online bidding at
dreweatts.com

DREWEATTS
EST. 1759



Drawings and Castings for Model Traction Engines
Locomotives and Model Engineering Supplies

2" scale Burrell Gold Medal
7 1/4" Bagnall NG Loco

2" scale Burrell 10 Ton Roller

Pre-owned
We always have a stock of models and workshop equipment to sell. Check our web site regularly.

Colour Catalogue – send £3.50
Includes all our range of Traction Engines and Locomotives, Steam Fittings, Nuts, Bolts, Rivets, Materials.

Machining and Gear Cutting Services

2, 3 & 4" Scale Traction Engine Lamps

Rubber Tyres

2&3" Scale Fowler A7 Traction Engine 3" Scale Wallis & Stevens 8HP

Schoolfield Corner, Church Lane, Dogmersfield, Hampshire, RG27 8SY - Visitors by appointment only
Tel: 01252 890777 email: sales@mjeng.co.uk web: www.mjeng.co.uk

A.m.€ 01952 879607

Abbotts Model Engineering
Makers of 5" & 7" Gauge
Locomotives & Rolling Stock

See Website for up to date info.
Please re-fresh your website browser.

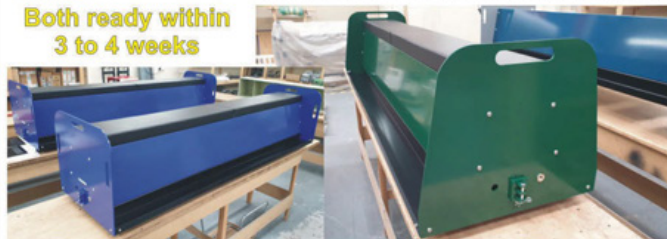


7.1/4" Commercial Passenger Coaches

From £1100

Both ready within
3 to 4 weeks

Choice of steel end plates
All wheel vacuum braking available



5" Commercial Raised Driver / Passenger Coaches



From £795

Single & dual bogie braking &
Passenger safety end guards available
Choice of colours

Unit D7, Haybrook Ind Est, Halesfield 9, Telford, TF7 4QW

Shop open Mon to Fri 9.00am to 4.00pm
Locomotives, Coaches & Trucks all on display
(See website for products & updates)

www.ametrains.co.uk

INSURANCE FOR CLUBS SOCIETIES & INDIVIDUALS

Club & Society Public Liability automatically includes all members anywhere in the UK or Europe without extra charge.

- Road Traffic Act insurance for miniature road vehicles
- Models & Home Workshops
- Directors & Officers
- Portable Track
- Road Trailers
- Personal Accident
- Boiler Testers Professional Indemnity
- Modelling & Model Engineering Businesses
- Commercial Miniature Railways up to 2ft gauge

PLUS

Vintage Tractors, Stationary Engines, Traction Engines, Motor Rollers Lorries & Low Loaders, Steam Cars, Memorabilia & Collectables and, of course, Home Buildings & Contents and Cars.



Individual Modellers, get a quote
and buy instant cover online at

www.walkermidgley.co.uk/individual-modellers-insurance

0114 250 2770

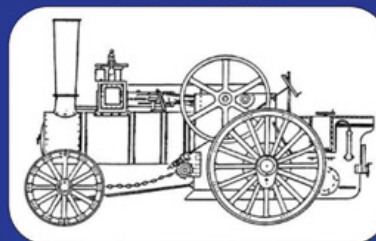
enquiries@walkermidgley.co.uk www.walkermidgley.co.uk

Walker Midgley
Insurance Brokers

Walker Midgley is a trading name of Advisory Insurance Brokers Limited. Registered in England with company number 4043759. VAT Registration Number: 44284724. Registered address: 2 Minster Court, Mincing Lane, London EC3R 7PD. Authorised and regulated by the Financial Conduct Authority.

LIVE STEAM MODELS LTD

Drawings & Castings for
3" – 6" Traction Engines including
Burrell, Foster, Fowler, Marshall, and
Ruston-Proctor.



Celebrating 30 Years of Trading—1992—2022

Full engineering services, technical
support and wheel building available. Horn plates,
tender sides and wheel spokes laser cut.

Comprehensive range of model
engineering materials plus BA & BSF screws, nuts,
bolts, rivets, boiler fittings & accessories.



Phone - 01332 830 811
Email - info@livesteammodels.co.uk
Unit 7, Old Hall Mills, Little Eaton,
Derby DE21 5EJ



CLASSIFIED ADVERTISEMENTS



TEE
Publishing Ltd

**STOCKISTS OF A WIDE RANGE OF BOOKS FOR
MODELLERS AND MODEL ENGINEERS**

W: www.teepublishing.co.uk

T: 01926 614101 E: info@teepublishing.co.uk

ITEMS MAIL ORDER LTD

MAYFIELD, MARSH LANE,
SAUNDBY, RETFORD,
NOTTS, DN22 9ES

Tel/Fax: 01427 848880

BA SCREWS IN BRASS,
STEEL AND STAINLESS.
SOCKET SCREWS IN STEEL
AND STAINLESS.
BA SOCKET GRUB SCREWS
FROM £1.93/10

EMAIL: lostignition8@gmail.com or
PHONE: 01427 848880 FOR FREE PRICE LIST

www.itemsmailorderascraws.com

AP MODEL ENGINEERING

INCORPORATING MODEL
ENGINEERING PRODUCTS, BEXHILL
T: 07811 768382

E: apmodelengineering@gmail.com

AP Model Engineering
supplies the largest range of
battery electric diesel outline
ready-to-run locomotives,
locomotive kits, riding cars, rolling
stock and accessories in 5" scale,
7 1/4" scale and 3 1/2" scale. Quality
products at affordable prices!

www.apmodelengineering.co.uk

GB BOILERS

**COPPER BOILERS FOR LOCOMOTIVES
AND TRACTION ENGINES etc.**

MADE TO ORDER

Constructed to latest standards. UKCA stamped.
Over 20 years experience.

Enquiries, prices and delivery to:

☎ **Coventry 02476 733461 / 07817 269164**

Email: gb.boilers@outlook.com

Current lead time is 4-6 months



Laser cutting

Do you need very fine marking
or cutting, Boiler name Plate ?

Variety of Material thickness
Brass, Steel, Copper
and many other materials
with minimum font heights
less than 0.2mm !

Call Mike to discuss :

Tel: 07738 271770

webuyanymworkshop.com

Home workshops cleared,
good prices paid, especially
for those with either Myford
7 or 10 lathes.

Send your photos to
andrew@webuyanymworkshop.com
Or call me on 07918 145419

*I am also interested in buying
Polly steam locomotives,
especially those that need
some 'TLC'*

HORLEY MINIATURE LOCOMOTIVES

7 1/4" Drawings and castings

Dock tank
BR STD Class 2 2-6-0
BR STD Class 2 2-6-2T
BR STD Class 4 2-6-4T
BR STD Class 5 4-6-0
BR STD Class 7 4-6-2
BR STD Class 9 2-10-0

L.M.S. Coronation Class 8 4-6-2
(Duchess)

5" Castings only

Ashford. Stratford. Waverley.

7 1/4" Castings only

Dart, Roedeer. Green Queen

HORLEY MINIATURE LOCOMOTIVES LLP
Phone: 01293 535959 E-mail: hml95@btinternet.com

www.horleyminiaturelocomotives.com

Meccano Spares

Reproduction & Original
Meccano Parts.
www.meccanosparses.com
Tel: 01299 660 097

RABARKER
Engineering

Trade
enquiries
welcome

**Manufacturer of Steam Fittings
for Model Engineers**

3" to 6" Scale

From Lubricators, water gauges,
gauge glass protectors,
whistles & sirens,
4" & 6" Injectors

sales@rabarker.co.uk

www.rabarker.co.uk

Phone: 01245 462100

Mob: 07980 855510

Briars Farm, Main Road, Boreham,
Chelmsford, Essex CM3 3AD



**MACC Model
Engineers Supplies LTD**

0161 408 2938 www.maccmodels.co.uk

We supply a vast range of materials
Brass, Steel, S/Steel Phos Bronze
Sheet and Bar.

Copper and Brass tube upto 6" dia



We also stock a range of high
quality, British made steam fittings.
BA Nuts and bolts, taps and Dies.....



TO
ADVERTISE
HERE
CALL
BEV
ON
01778
392055

STATION ROAD STEAM

ENGINEERS • LINCOLN

LOCOMOTIVE BUILDERS • BOILERMAKERS

Full-size and miniature engines of all types bought, sold and part-exchanged

We keep a large, constantly-changing stock of second-hand engines in all scales and gauges.
We are always interested in buying engines - from part-built through to exhibition-winning models.



4 INCH SCALE BURRELL SCC TRACTION ENGINE

A finely built Burrell SCC traction engine, in excellent condition throughout. Commercial boiler by Franklin & Bell, complete with canopy and driver's seat. The boiler has had a recent cladding off inspection, hydraulic and steam tests with new certification issued.

ref 10703 £26,500



7 1/4 INCH GAUGE 0-4-2T BRIDGET "EXMOOR PONY"

A well-built 7 1/4 inch gauge 0-4-2T "Exmoor Pony" to Ken Swan's excellent "Bridget" design. It's an engine we've sold in the past - last with us in 2009, it's been well looked after since and remains in very similar condition. The engine has been serviced, we've fitted new safety valves and replaced the little end bushes, boiler has had hydraulic and steam test with new certification issued. It steams freely and runs very well in either direction.

ref 10688 £6,950



7 1/4 INCH GAUGE MANNING WARDLE 0-4-0ST "CHATHAM"

A professionally built 7 1/4 inch narrow gauge Manning Wardle 0-4-0ST "Chatham", to Derek Brown's excellent "Anna" design, serialised in "Model Engineer" magazine. The work of a builder whose work has been much featured recently on our website, it's a finely built locomotive in first class order throughout.

ref 10788 JUST IN



3 1/2 INCH GAUGE "ROB ROY" 0-6-0T

Unsteamed from new, the locomotive is turned out beautifully, paintwork and lining both to exceptional standard. Fit and finish of motionwork and valve gear is excellent, the chassis runs well on air in both directions.

ref 10716 £2,350



3 1/2 INCH GAUGE OS "BRITANNIA"

This is a 3 1/2 inch gauge OS-produced Britannia. It has been carefully assembled but never steamed - it is in pristine condition, having spent its life on a length of display track under a fitted Perspex cover. Coal-fired silver-soldered copper boiler, four-element superheater, working pressure 80psi. Feed by injector and axle pump with auxiliary hand pump in the tender. Twin safety valves.

ref 10767 £6,750



5 INCH GAUGE LNER B1 4-6-0

A 5 inch gauge LNER B1 built to Martin Evans' "Springbok" design. The engine is in running order - although requires a variety of jobs attending to. Pistons and/or valves leak, axle pump is ineffective (although injector and hand pump both work), the cab roof is missing. The boiler has had hydraulic and steam test, with new certification issued.

ref 10356 £5,750

We are always interested in acquiring engines of the type that we sell. If you know of a steam engine for sale, in absolutely any condition, please let us know. Engines bought outright, or we are happy to take them on a commission sale basis, or pay you a finder's fee if you put us in touch with an engine which we later purchase. All engines listed are on our premises, available for inspection by appointment.

Please do contact us, even if all you have is a rumour of an engine being available!

For full details, high resolution photographs and video see our website

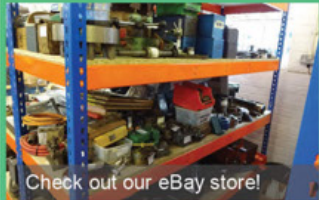
Unit 16-17 Moorlands Trading Estate, Metheringham, Lincolnshire LN4 3HX

email: info@stationroadsteam.com

www.stationroadsteam.com

tel: 01526 328772

HOME AND WORKSHOP MACHINERY



Check out our eBay store!

144 Maidstone Road, Fools Cray, Sidcup, Kent, DA14 5HS

tel: 0208 300 9070 - evenings 01959 532199

website: www.homeandworkshop.co.uk

email: sales@homeandworkshop.co.uk

visit our eBay store! Over 6500 items available; link on website;
homeandworkshopmachinery



ebay



3 1/2" Britannia 4-6-2 rolling chassis and castings; check out our website for more pictures £1150



Pacific poss. 5" locomotive 4-6-2 Boiler kit, casting set and frames see website for more pictures £1800



Elliot 12" rotary table 4 1/4" height £500



Harrison Graduate wood lathe £1450



Myford Super 7 long bed 31" lathe £2950
see web site for further photos



Transwave 7.5HP 5.5KW HD Static converter £500



RJH Antelope 6" vertical finisher + extractor, emergency stops etc £1650



Neat cut and soluble cutting oils £10 each



Colchester Bantam 2000 lathe (long bed) metric leadscrew, Dickson post £4950



Stanier precision vice 55mm jaw New / New Zealand £195



Startrite Robland K210 £2450



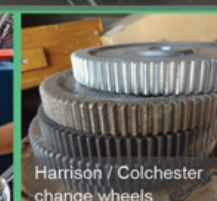
X-Y 12" x 6" table £525



Myford Super 7B hardened bed very nice £4250



See us at 'The Midlands Show'!
13th-16th October
stands 79-80



Harrison / Colchester change wheels



Multico M1 240V Mortiser
Chisels Original £750



Harrison M250 lathe 5" x 20" 240 VOLTS FROM NEW £5450



Sealey 150 litre V Twin Compressor, 10 bar £495



Bofford 280 5" x 30" geared head precision lathe (never used) £3500



Chester Cub 630 6" x 30" centres chucks, steadies hardly used £2950



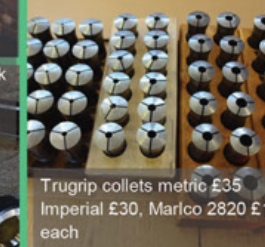
Meddings L1 MK.V drilling machine £2250



Warco GH40 Geared Head 31" x 9" table, 3MT £1400



DP / MOD gear cutters £20 each, please enquire for availability



Trugrip collets metric £35 Imperial £30, Marlo 2820 £15 each



Clarke 917 vacuum former £495



Myford ER25 solid collet chuck made by Myford (Notts) New £70 More in our eBay shop!



Colchester Triumph 7 1/2" x 30" gap bed centre lathe, 2" spindle bore, 3 jaw chuck, 4 way tool post from university (nice condition) £2750



Myford ML7 Tri-Lever lathe, two speed motor, stand, etc. £1625



Bridgeport 42" x 9" powered both ways! turret milling machine / R8 VARIABLE speed Chrome slides, nice! £6450



Tripus 240V switch £90



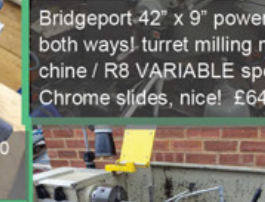
Crown Windley Brothers 6ft x 4ft cast iron surface table £1425



Myford ML10 robust lathe £1400



Myford gearbox unused £1000



Harrison M300 lathe £3950



Startrite SD320 Profi 12" planer thicknesser 240V £1500

Please phone 0208 300 9070 to check availability.
Distance no problem – Definitely worth a visit – prices exclusive of VAT
Just a small selection of our current stock photographed!

Worldwide Shipping

POWERED BY
barclaycard

