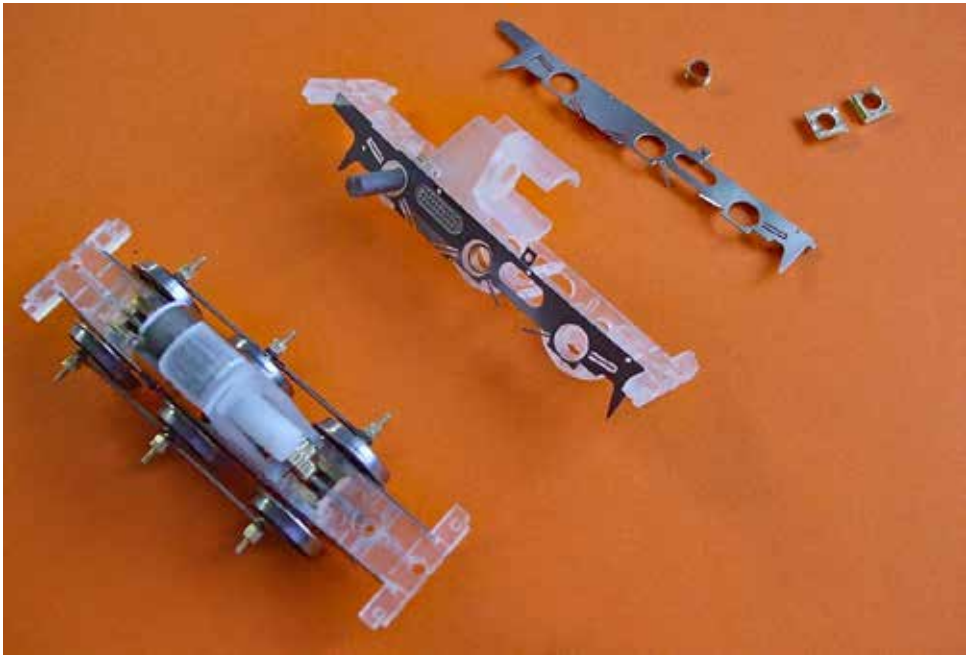
MIXED TRAFFIC

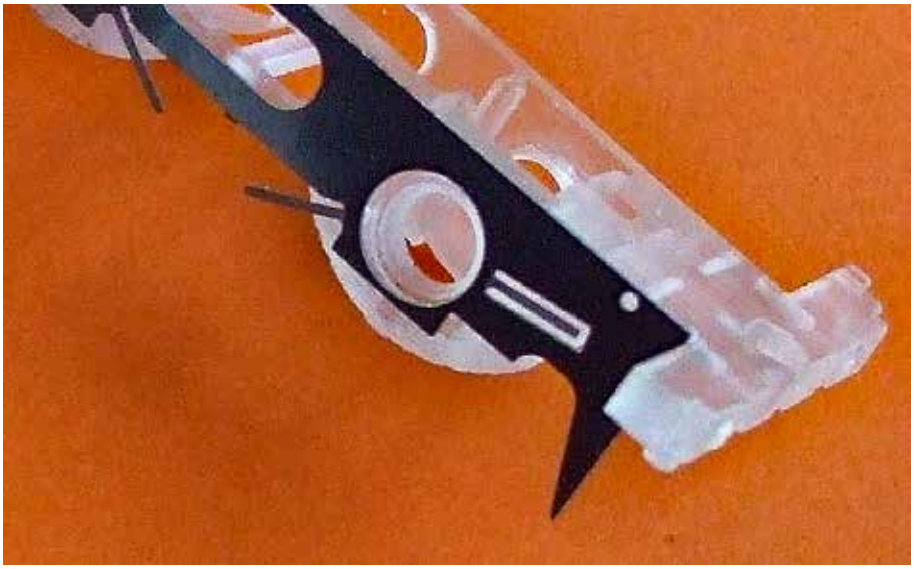
227 April 2022

The 3mm Society Magazine



A LOCO CHASSIS DESIGN

Turn to page 2 to find out about the progress New Products Officer Graham Shirley has made in designing a loco mechanism which could answer members' oft-repeated call for a simply-assembled chassis involving little or no soldering. *Graham Shirley*



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227 April 2022

Contents

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If you receive a magazine with missing or miscollated pages, please contact Tim Barnard [redacted] for a replacement, giving your name and address. Tim also stocks back numbers.

Cover

Turn to page 10 to read how Alan Smith – who also took the photograph – built this North Eastern signal cabin for his Everingham layout.

EDITORIAL

What a pleasure it is to make things. It's why we're here. Whether you've started with some raw materials and tools and made something entirely from scratch, built a kit, created a file for a 3D-print or repainted and titivated a commercial item, you'll have had a good time. Some of you are 3mm polymaths, proficient in all aspects of railway modelling, while others are specialists, concentrating on buildings and scenery, wagons, signals or whatever.

It's an enormous pleasure to see, first-hand rather than in a magazine or online photo, the work of our fellow members at Area Group meetings or Society events such as West Byfleet or Westfest. There's so much to enjoy and appreciate, and so much to learn from conversations about others' approaches and techniques.

I expect that, like me, you are looking forward to the Annual Competitions at the forthcoming Annual Meeting in Swindon, our first in-person AGM since 2019. Those two years of lockdown and anxiety have shown the importance of hobbies (or obsessions) like ours, and if articles in this magazine and reports in the *Newsletter* or the e-Group are reliable indicators, a lot of 3mm modelling has been done and we can eagerly anticipate a lot of entries in the six competitions. Let's hope so. Let's celebrate our achievements. Though there will be but six winners, there will be far more very fine models of all kinds.

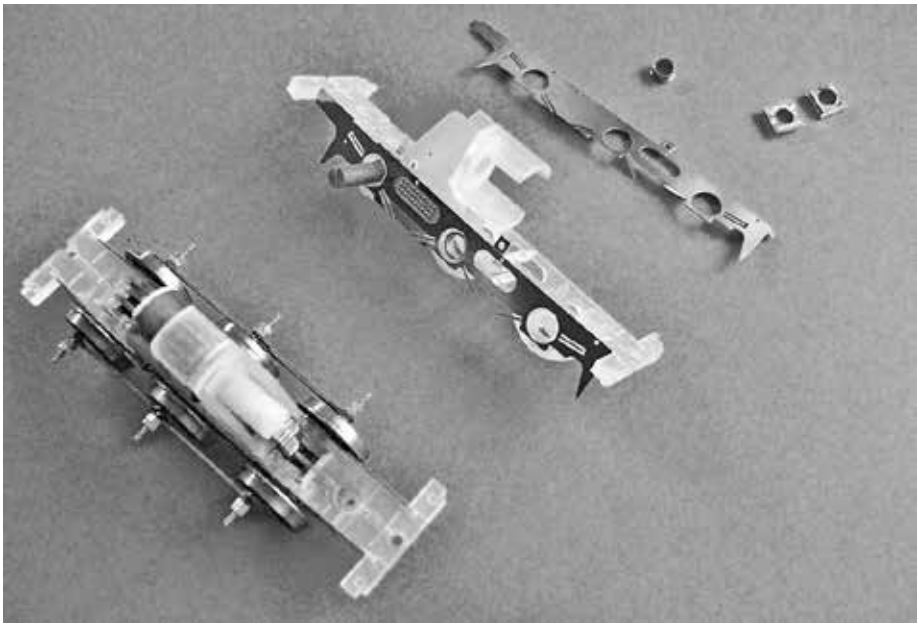
I have a vested interest, of course: the more entries in the competitions, the more photographs there will be for future editions of *Mixed Traffic*.

LOCO CHASSIS CONSIDERATIONS

A progress report from New Products Officer GRAHAM SHIRLEY

Over recent years the prospects of obtaining 3D-printed loco bodies in 3mm scale have greatly improved, with our own Lenny Seeney supplying a number of models of popular prototypes. At the same time, individual members and an Area Group have generously devoted time and funds to producing the necessary chassis and components to permit the supply of ready-to-run (RTR) or near-ready-to-run (N-RTR) models.

It seems to be coming clear, however, that the number of members with the experience, time and patience to fulfil this in the long-term is limited and continued efforts in this direction may not be sustainable. It was, with this in mind, that the Committee sanctioned funding for developing a chassis that could be assembled by members "by screwdriver" or sub-contracted to a commercial organisation that might be able to assemble complete locos on a production-line basis. A process of "design for manufacture" was adopted to achieve this end and to ensure that the required components could be manufactured by 3D printing and etching by commercial organisations. The concept was tried out on a particularly difficult prototype (an LBSCR Terrier 0-6-0T) that would not permit the use of the N20 geared motor but required the gear-train to be carefully packaged.



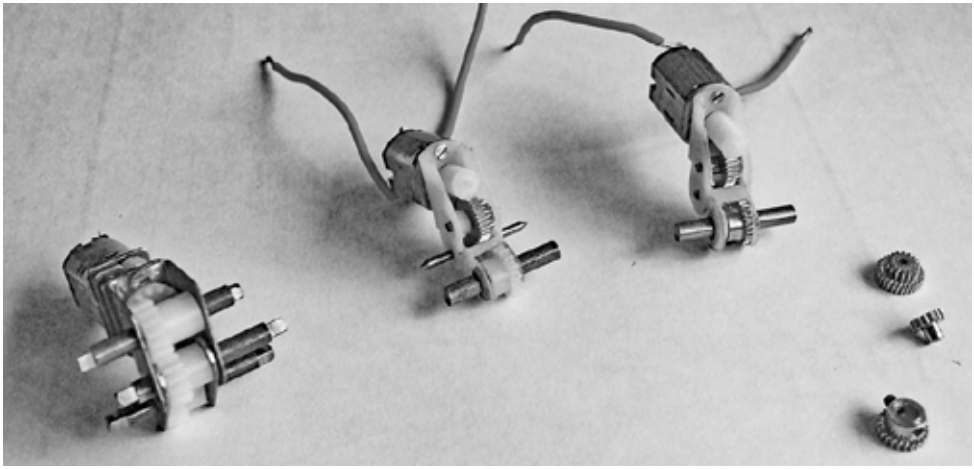
The photograph above shows a completed chassis consisting of a 3D-printed "core" to which etched side frames can be clipped into place and located by

“tongues” and over circular protrusions from the core. These protrusions also accommodate the axle bushes (not shown). The printed core locates the motor and the gear-train is also integral. As the two sideframes (etched in stainless steel) are isolated from one another, they can incorporate fold-out pick-ups, leaving only wires to be soldered between the sideframes and the motor. A number of prototypes have been built and, on completion, they run well straight away.

On the top right of the picture is a pair of hornblocks which can slide in guides printed into the core. This permits the non-driven axles to rock if the modeller wants some flexibility in the chassis, at the expense of a slightly more involved assembly process. Both of these photographs show a 12mm-gauge version of the chassis, with the facility to mount Triang couplings. Prototypes of 13.5mm- and 14.2mm-gauge mechanisms have also been assembled and tried.

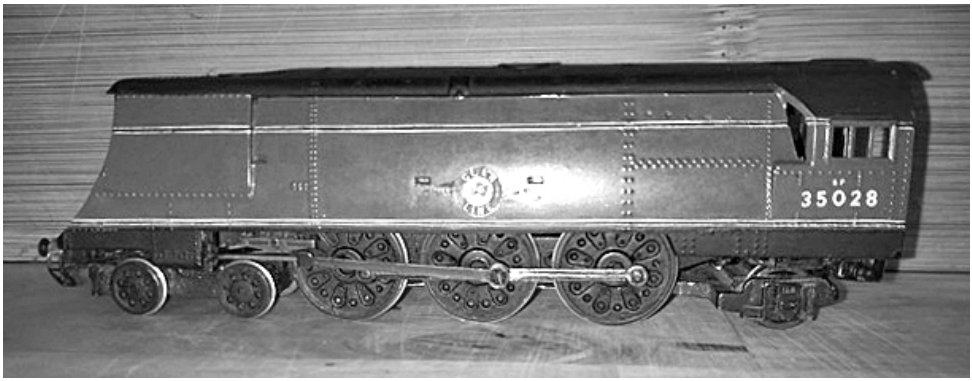
So far, all is fine – but the issue of gear-availability has arisen and this has required some attention since the future of High Level and Branchlines gearboxes could be threatened. It was felt that the Society should ensure future supplies of gears. As a consequence, I have directed my attention towards seeking the means by which gears might be obtained. In addition to providing gears for the chassis concept described above, consideration has been given to the manufacture of gears by 3D printing in both brass and plastic. The photograph below shows (bottom left) a gearbox for the N20 geared motor and, to its right, two versions of gear boxes driven by an N20 motor. The middle version has a mixture of brass and plastic gears while the one on the right has all-brass gears. The individual gears are shown on the right. All seem to run well.

At the time of writing other gearbox options are being considered in the hope that, ultimately, the Society might be able to supply types to complement or replace those supplied by High Level and Branchlines. The intention is that they will be compatible with the narrow frames of 12mm-gauge locos.



BFB DRIVING WHEELS

RICHARD BRICE makes Bulleid drivers for 14.2



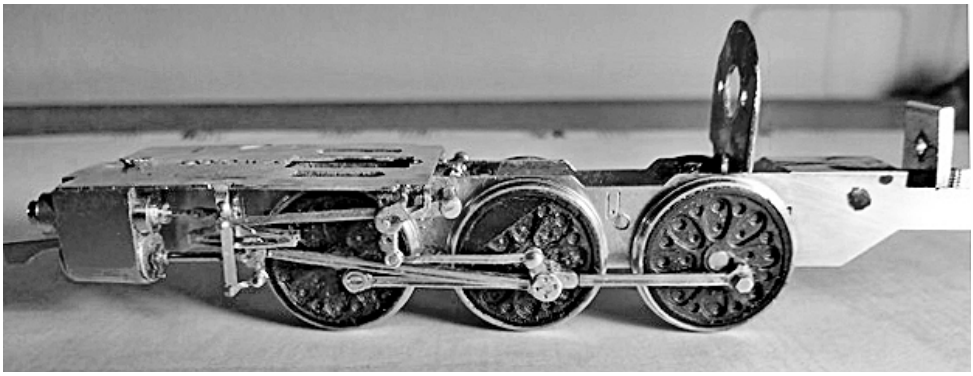
Bulleid-Firth-Brown wheels were used on all O V S Bulleid's locos for the Southern Railway. In 3mm scale, I don't think we need to bother with BFB wheels for the main-line diesels, the straight electric locos, tenders or the trailing truck on the Pacifics. This still leaves a requirement for Pacific drivers, front bogie, Q1, (incidentally the same diameter as the Leader wheels) and a 4ft 6in wheel for the diesel-electric and diesel-mechanical shunters. If you model in 14.2 you will be aware of the lack of BFB wheels for 14.2 gauge.

There are several solutions to this dilemma, all of which I have tried, with one exception. Let me deal with that first: wheels are available in the SQ range for both the Pacifics and the Q1. These cannot, of course be used directly for 14.2, but Andrew Shillito has pointed out that the SQ centres were designed to be compatible with 14.2 rims. He says that the wheel centre is thinner than normal for 12mm to enable 14.2 tyres to be fitted. I think the centre can be pressed out of the 12mm tyre and a 14.2 tyre put in its place. Maybe a spot of Zap will be needed and if the boss is not wanted it can be filed off. SQ axles should shortly be available for 14.2, alternatively one could use 2mm square bar pushed through and bonded to 1/8in tubing which has been drilled out to accept the square bar (2.83mm across corners, according to my tables), thus making an axle.

It may be possible to purchase wheel rims from Peter White, but supply cannot be guaranteed as they are ordered in batches as and when needed. Currently Peter has no spare crankpins, but the shouldered axles are available at 80p each. Don't worry, though: just buy sets of wheels as normal and press out the centres – and don't throw them away as they can be placed on a wagon with the destination Ashford, Horwich or wherever. So we can now have Q1 and Pacific wheels – and the quartering is sorted out.

My experience goes back before SQ wheels. My Q1 uses etched overlays and 40 years ago a friend converted a Triang Merchant Navy for me by making new tyres from stainless steel and setting them on the original wheels; he managed to get the required BB dimension by setting the tyres to the front edge of the wheels and pulling the wheels very slightly off the axles (the overall length of a Triang axle is almost the same as a 14.2 gauge one). It works and although the wheels are rather thick this is of no importance if using the original frames, and one could always chamfer the backs (as shown in the sketch on page XX).

When I converted an Atlas Battle of Britain into a working loco (described in *Mixed Traffic 203*) I used some spare Triang wheels for the drivers. They were thinned down in the lathe, mounted on 1/8in split axles and tyred with home-made aluminium tyres (my little lathe won't cope with making them from steel). Fortunately I had six pairs of centre drivers so didn't have the problem of the large bushed centre hole, using split-axles meant there was no need to insulate the wheels but if I had to, I would do this by the technique of cutting alternate spokes, expoxying and then cutting the other spokes and epoxying again. Yes I know that that BFB don't have spokes but you get the idea. I re-used the Atlas bogie wheels, after re-tyring, and the rear truck and tender wheels are ordinary disc wheels – the centres being virtually invisible in 3mm.



Going back to *Mixed Traffic 203*, yes Father Christmas did bring me a Worsley Works chassis etch (above). I've only just got round to using it. When I looked at the ex-Atlas wheels I was surprised at just how good they are: compare them with photos and they seem to have the edge. As they are already quite thin, all that is needed is to turn them down to accept tyres, open out the centre hole to 2mm, glue the tyres on and...would that life were that simple. Crank throw on the Atlas model is about 5mm, but needs to be about 3mm. To solve this, I filled the existing crankpin holes with epoxy (having cleaned off all traces of the cement Atlas use) and re-drilled. New crankpins from tube were then glued in with Zap, although you could drill and fit the crankpins supplied with the spoked wheels, or use a 14BA cheesehead screw (same size as the Society crankpins).

Axles were made from 1/8in silver steel to the normal dimensions for 14.2 gauge. When I assembled the wheels I used a spot of Zap to hold them tight. For the front bogie wheels, I cut the axles in half, consolidated the wheel to the half-axle with some Zap, held them in a collet and turned them down to take some tyres I had already made (but I'm fairly sure that the tyres from wagon wheels could be used). This wheel/axle combination was then assembled into the frames with the half-axles glued into a piece of brass tube.

As for the 4ft 6in wheels, these are Romford 4mm scale BFB tender wheels. They scale to the right size and are metal. The centre hole can be enlarged and a split axle used. On the diesel-mechanical I didn't bother thinning the flanges – it's rather bumpy over the points so for the diesel-electric I thinned the flanges using a small file held against the wheel revolving slowly in the lathe and this has worked well. If the fact that the wheels are too thick is a worry, the tyres can be shifted slightly out and then the excess turned off, leaving a boss, or chamfer the wheel backs and the thickness won't be obvious. Using split axles again means that you don't need to worry about brake gear and sand pipes touching the wheels. By the way, I think that it's only in 3mm scale that we have a 4ft 6in BFB wheel! Modellers in 12mm should be able to use the wheels as they are.

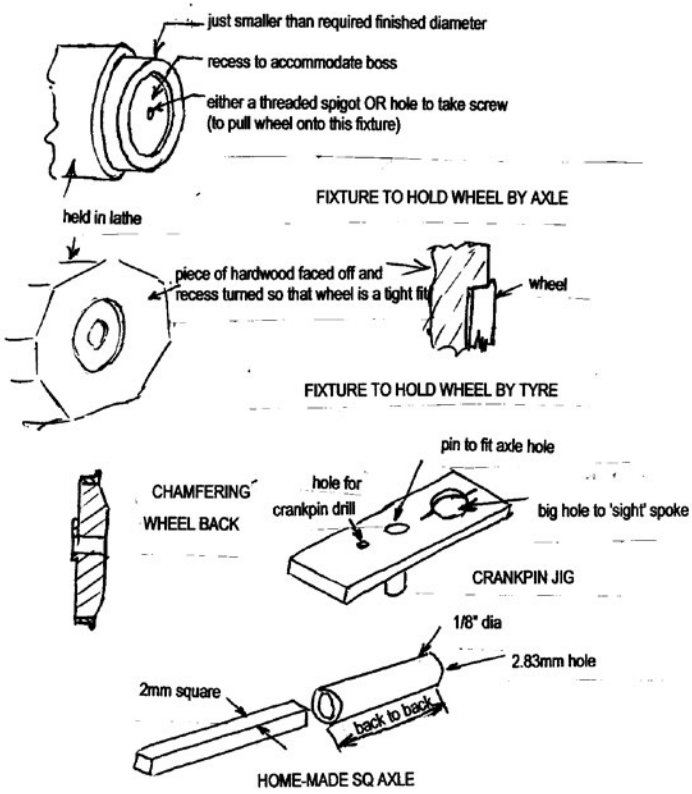
WHEEZES FOR TURNING WHEELS

There are some principles which must be observed when turning wheels, or they are likely to be eccentric. Various simple holding fixtures are used when doing this work. A self-centring chuck can't be relied on to hold something really true, and once the work is taken out of the chuck, it won't go back *exactly* the same. A collet should always hold things true. They are expensive, but they do save a lot of time, especially when turning axles and wheels on an axle. Remember that accuracy is dependant more on how the job is done than the machine it's done on: I think that even the Chinese lathes which retail for about £150 could be used for fitting tyres as I have outlined.

It's generally easiest to turn wheels centring them by the axle hole. Some sort of a fixture is necessary to hold the wheels accurately. To make this, chuck a piece of metal, face it off and either drill and tap for a screw to hold the wheel on with, or turn a spigot to fit the axle hole. The spigot can then be threaded for a nut. If using a screw, be sure that it is a really good fit. Generally I have the front face of the wheel against the fixture so there needs to be a recess turned in the fixture to

accommodate the wheel boss. Whilst using the fixture, hide your chuck key! It's so easy to forget and loosen the chuck jaws. Given that you already have the tyres (make sure there are no burrs on them), all the wheel centres can be turned to the same size by using the index collar on the cross-slide once the first one is done. Turn to a force fit, or a tight fit and glue depending on which you prefer. If you don't have a big enough piece of metal, or if the lathe is not able to cope, there's no reason not to use a piece of plastic or hard, fine-grained wood – a suitable woodscrew should hold the wheel well enough for what is wanted and you'll only be turning six wheels anyway.

Let's say the wheel is tyred and accurate to the centre hole yet still needs to be worked on. Then chuck a piece of good plywood, or a bit of hardwood, and cut a recess to take the wheel. If the wheel is slightly loose, then use a piece of paper when putting the wheel in to tighten it up. Licking the wheel can also make all the difference between the wheel being gripped or not. This works, of course, because of the slight taper on the tyre so is only suitable for working on the back of the wheel (for example, to chamfer a thick wheel).



Concluded on page 23

UNDOING THINGS

GEOFF HELLIWELL describes some useful tools

Generally speaking, most articles in modelling magazines are about how to *do* things: how I made this, how I fitted that. But how often do things not go quite to plan? And, even when authors admit to getting something wrong, how often do they then tell you how they got it all apart again? Being a lifelong "toolaholic", I have loads of tools for putting things together but sometimes struggle when things ain't quite right and I have to get everything apart again. When building locos, very often parts such as wheels and gears are pressed on, but there is then very little room to apply force in the opposite direction should the need arise, or there is a risk of damaging delicate parts if too much force is applied. Sometimes things are soldered together and have to be taken apart, but it is often not just a case of heating it up again. What then? To answer that, here are some of the bits and pieces that I use as "undoing tools".

I regularly search eBay for watchmakers' tools, and there I came across a pair of watch-hand removers. These look a bit like miniature tyre levers, with knurled grips (above). The first job I found for them was removing the minute gear from the end of an N20 motor. These are only a couple of millimetres in diameter and the slightest damage and they are ruined. The mini tyre levers did the trick (but it is still dead easy to drop the gears into the hole in the space-time continuum called the carpet!). They have become much-used items in my toolbox.

Another thing that has always been a bit of a struggle when things don't go right is removing plastic-centred driving wheels from axles. Just pulling the tyre with brute force risks distorting the plastic centre, so what is needed is a way of applying the force to the centre boss. What I came up with was a pair of wedges, each with a 1/8in slot in the end. These are made from 1mm brass or nickel silver thinned to almost a knife edge. This is easily done with a sanding disc or just a file. These are inserted either side behind the wheel and pushed together so that the wedges force the wheel off. You do, though, need to be careful to ensure that the opposite frame is well supported as that is the one you are pulling against. They appear top centre in the heading photograph.

Sometimes, when the axle is accessible, it is possible simply to support the frame and knock the axle out of the wheel using a suitable punch. However, the frame needs to be well supported and, wherever possible not just from one side of the bearing. I made another useful item from a short piece of mild steel bar. Like the wedges described above, this also has a 1/8in slot in the end but is much thicker. It is made from 1/4in steel bar and is cut away underneath so as to allow it to be used in restricted spaces. When clamped in the vice, it can be used as an anvil to support the frames whilst the wheel is removed from its axle using a suitable punch. In the photograph it is beneath the two wedges.

Another useful undoing tool is a small pair of bent-nose pliers. The bend allows them to be used as pair of levers to get things like gears off shafts. They won't get something off a shaft if it is really tight, but they are really good for getting nylon gears off, for example.

The last thing I want to mention isn't really a tool but nevertheless makes life a lot easier for us folks who join stuff together with hot metal. Copper unsoldering braid is quite magical stuff: apply a bit of flux to the braid, lay it against the solder you want to remove and apply heat to the braid. For reasons I don't understand, the molten solder is drawn to the heat and soaks into the braid. Magic!

THE THREE MILLIMETRE SOCIETY

The Society's fifty-fifth Annual General Meeting will be held on **Saturday 21 May 2022 at Grange Leisure and Community Centre, Grange Drive, Stratton St Margaret, Swindon SN3 4JY**, starting at 2.30pm sharp. It is hoped that after two years without a full AGM as many members as possible will want to attend.

The Annual Competitions will be held for the first time since 2019. As a lot of modelling has been done in the two years of the Covid-19 emergency we hope that there will be more entries than usual.

Directions to the venue, including a map, and details of the competition rules were included in the 2022 Annual General Meeting calling notice mailed to members in January.

AN NER BRIDGE SIGNAL CABIN

Scratchbuilt by ALAN SMITH

At something of a loose end between loco kits and idling through a book on NER signalling, I came across a drawing of a bridge signal cabin. These were not uncommon in the North East prior to the wholesale introduction of colour lights and the subsequent demise of mechanical signalling. Some, however, still exist and after some research I happened on Wylam, which seemed to fit the bill, although the model is not an exact replica.

On my layout, Everingham, I always felt there was a need for a signal box at the imagined south end of the layout, but space was at a premium, the running lines being sandwiched between a goods yard and the loco shed – so a bridge cabin would certainly be the answer. Most of my railway buildings are based on prototypes in East Yorkshire but, as it happens, the loco shed is an adaptation of the one at Alston, so a cabin of this sort, alongside, would be in good company! The nearest one to my supposed location was at Whitby.

As will be seen from the photograph, there is a significant amount of ironwork associated with this type of box. For the main supporting trusses, I had in stock some Scale Link etched frets for trusses with a similar criss-cross configuration. These were too deep, so were reduced in height and suitable top and bottom flanges and flange angle added, with end stiffeners. The rest of the structure is created from various brass sections, the main legs being H-section. The staircases were a bit of a nightmare. A brass side stringer was attached with double-sided tape to a diagram with parallel lines representing the step spacing and the steps were soldered to it individually, using a thin piece of ply as a spacer and as an attempt to keep the step at right angles to the stringer. The steps were cut from nickel silver strip and when all were fixed, the second stringer was added.

The model was designed to be in three parts: the substructure, the cabin, and a separate roof. The cabin is constructed from Plastikard. The sashes and glazing bars were painted on to glazing material using a ruling pen. The roof is curved and was probably felted on the prototype to reduce weight.

Internal detail includes a desk for the train register, a pot-bellied stove, an old armchair (every signal box I ever went in had one), a cubicle for an inside toilet (not modelled), a block-instrument shelf and a lever frame. The frame was created from a segment of 10mm-diameter tube soldered to a flat base. The base was made over wide in order that it could be part cut through and bent to 90 degrees to be gripped in the vice. Slots for the levers were then cut across the frame, initially with a piecing saw, then opened out with a junior hacksaw blade. The levers were fashioned from thin brass strip and soldered into the slots, then painted the appropriate colours. All ironwork is painted black and woodwork light stone, following my LNER painting specification.

The NER Bridge Signal Cabin at Everingham South

ALAN SMITH GALLERY

Not all of railway modelling is a deadly serious business, as the LMS and LNER vans in this picture, “A Good Night Out”, show.

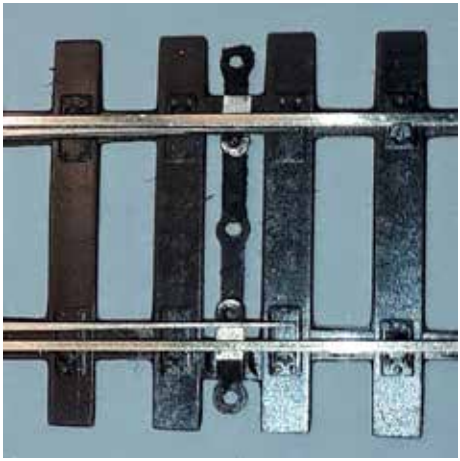
NEW PRODUCTS GALLERY

Barry Witteridge painted and lettered his Helliwell/Seeney WR Hymek as D7033. Turn to page 20 for Paul Furner's comparison of this model and Lincoln Locos' Class 24.

Barry Witteridge

British Finescale's 14.2mm-gauge point kits are also new. They have a 3D-printed base, machined Society fine-scale rail forming the common crossing (left below) and the point blades (right below), which have lugs and pins to fit the tiebar. For more about them, see "What's New" on page 19.

Peter Walters



FRANK CRUDASS REMEMBERED

Frank Crudass's legendary Littlehaven Town layout (*Model Railway Constructor*, April and May 1961) was dismantled when he switched to EM gauge. A number of Frank's models were acquired by the late Terry Smallpeice and some are now owned by Paul Hopkins. The Jacobean-gabled half-relief shops above have found a place on Portsea. The Bedford OB bus is scratchbuilt and the lorries adapted and repainted Matchbox Toys. The Foden horsebox has a scratchbuilt body.

Photos by Paul Hopkins

Tim Woods

GALLERY

Tim Woods describes building this Shell-BP tank opposite. At Garry Hall's request Railtec have produced their WR numberplates and shedplates as 3D transfers in 3mm scale. Here they are on Triang Castle 5069 *Isambard Kingdom Brunel* and Hall 6954 *Lotherton Hall*.

Garry Hall

DOING BATTLE WITH A TANK

TIM WOODS builds a Parkside railtank chassis

After too many years avoiding the challenge, I finally thought I would extract the bits and pieces from the drawer and have a shot at constructing an Air Ministry Class A tank wagon, as described in Roger Marsh's excellent articles in *Mixed Traffic 128* and *129*. With help from Paul Furner's guidance notes, and his useful idea for a jig, all seemed well until I tried to install the wheelsets...not enough hands available. After a lot of twiddling and muttering I had created a very good representation of a chassis whose springs had collapsed on one side. My second attempt was rather more successful. The most important issue was to get the chassis square and running true, so I took the following steps.

As I was using Kean-Maygib wheelsets, I reamed and countersunk the solebars and glued bearings in place. I drilled out the v-hangers to receive pieces of transverse rod later – Paul Furner's notes indicate a need to add a further v-hanger on the outside of each solebar. (A simple jig had been constructed for my first attempt, as in Paul's notes, but I laid it to one side until a little later on.)

Using 12mm-gauge wheels, I needed to file the central chassis structure where it would foul the wheels. Filing only needed to be done at an angle on the underside of the structure, and the top surface shows no evidence of it.

It seemed to me that the best way to get a true-running chassis was to secure the central chassis structure to a board and glue one solebar in place to it, upside down. This set overnight. The following day, I placed the wheels in the bearings and fitted the opposite solebar, ensuring the wheelsets were square to the solebars. This created a somewhat delicate unit. Once it had set I checked it for free running. Next, using Paul's jig, and with the chassis now upright, I glued on the headstocks. At this point it became possible to add the brakes, the extra v-hanger and the buffers.

The process of adding the end baulks, tank saddles and barrels is fairly straightforward and Paul's notes helped. My overall sense of this Parkside chassis is that considerable care needs to be taken with every step of preparation before glue is applied. That is true of course with every model, but the fiddly nature of getting it square when there are vertical stanchions and a skeletal chassis structure to contend with make this one an interesting challenge.

References

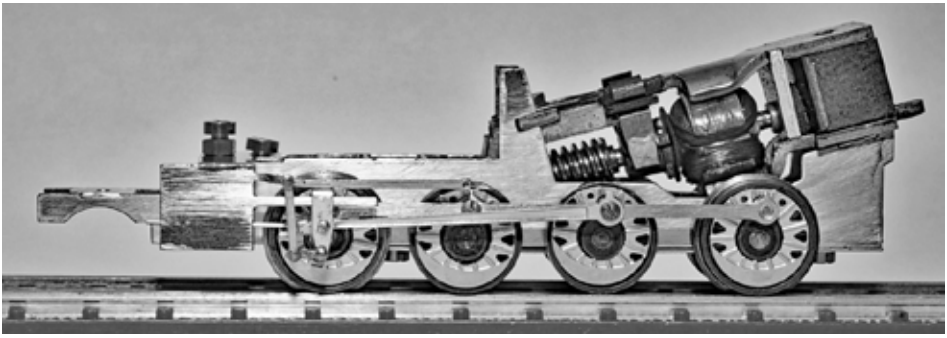
- Paul Furner's instructions and notes with the chassis kit
- *Mixed Traffic 128* and *129* (July and October 1997): articles by Roger Marsh
- *Mixed Traffic 136*: (July 1999) Review of Parkside chassis by John Sutton
- *British Railway Tank Wagons* by T Tourret (Cheona 2001)
- *Modellers' Back Track* Vol 3 Nos 1 and 2 (1993): articles on Air Ministry tanks

A TRIO OF 8-COUPLED LOCOS

GARRY HALL builds more locos in the spirit of Triang

When Lenny Seeney brought out a 3D-printed WD 2-8-0 and tender I had to get one as I saw plenty in York in the good old days. The number I chose is from a loco photographed in York. As in previous models I wanted it based around Triang, so drew up a chassis to etch which would use Triang Jinty wheels and the reliable XT60 motor. It does not concern me having the motor showing in the cab. As the motor fixing hole protruded from the cab I decided to remove the lug from the motor and use the magnet holding screw to secure the motor to the chassis instead. Some material was removed inside the firebox to clear the XT60.

The WDs had unique driving wheels so I also drew up some discs to be etched at the same time. As is usual with my chassis etches I used slot-and-tab construction with the sides made by laminating two pieces of nickel silver, resulting in strong 0.9mm-thick side frames. Once soldered up the chassis is very strong and not flexible (a flimsy chassis might give rise to issues later). One flangeless centre wheelset had a wheel taken off the axle, the gear wheel removed and the wheel replaced. The tender also has an etched chassis – a one-piece etch which still allows all eight wheels to go round Triang curves if necessary.



Regarding the model's Whyte notation, it is a 2-8-0 despite having two sets of flangeless drivers. It annoys me when some people refer to the Triang Jinty as an 0-4-0 because its centre wheels are flangeless. That is irrelevant. The term "coupled wheels" refers to how many sets of wheels are joined by a coupling rod. The BR 9F is a 2-10-0, yet its centre wheels were flangeless. I am not a rivet counter or into building exhibition models, and I find it very annoying when some people "down" Triang. They want "perfection", but my modelling has different aims.

Once the etched discs were fitted and painted black the unusual profile did not stand out, so a dry brush of grey/rust shows them up better (although it wants toning down a little, I think).

The WD's valve gear is based on the Triang style for ease of assembly. Time is too short these days, and as we get older, eyes and dexterity come into play. The coupling rods are laminated, like the frames, and the two outer holes have Triang coupling-rod pins soldered in. The "cylinder" block is a section of square plastic glued to the frames for insulation purposes, with a Triang-style cylinder cover glued on top with the etched slidebars between.

At the time of drawing up the chassis I decided I would use the same frames for an LMS 8F. I have no idea if the wheelbase is the same or not but that did not matter to me. This was an etched kit with a white-metal smokebox, boiler and firebox. I had started it a long time ago but the kit chassis was not practical for me, so the whole kit was put on hold. I wanted the weight of the white-metal castings, but they were not as detailed as the etches, so I filed off any detail and soldered the etches around the castings. This gives some nice weight and a good appearance, although I am still not a fan of the thin material used. The smokebox door was a problem as it was not a correct-looking one so I found a small 00 door and used that instead.

Once the chassis was assembled it was a question of removing a little white metal on the insides of the firebox and part of the boiler to accommodate the XT60 motor. Again the tender chassis is one of my own one-piece folded items. The number chosen for this model was because I have the original smokebox number plate in the condition it came off the loco.

At the time of doing these two locos I also had an etched SR Class Z 0-8-0T kit, so thought I might as well do three eight-coupled locos at the same time. The etches for this loco were even thinner than others and although there are “strengthening” plates to solder in, it does distort and easily creased where the edge of the strengthener is. The chassis is the same design as used for the WD and 8F, but I did alter the wheelbase to match what was in the kit and had valve-gear parts etched to suit. I had to remove a little metal from the rear spectacle plate to allow the motor to fit, and then made up a piece of scrap brass to curve over it for a coal load which covered the gap.

These locos look good and run nicely on the layout. I did a WR 2-8-0 in a similar manner previously. The pick-ups for all three locos are simply a piece of copper-clad paxolin with a phosphor-bronze wiper attached. As these locos needed so many Jinty driving wheels I got some of them from Mark Haynes at the Society Triang spares shop, which I have used for a variety of spirit-of-Triang projects.

WHAT'S NEW

FINE-SCALE POINT KITS
British Finescale
From the Society Shop: £20 per kit

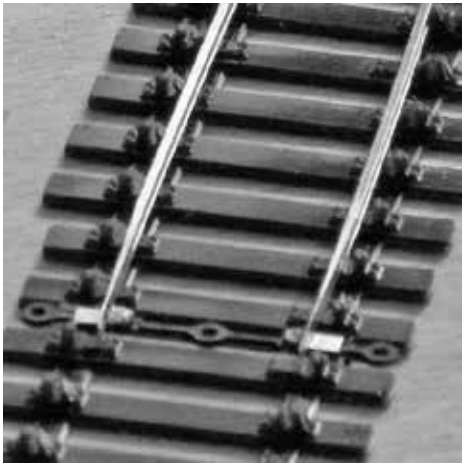
Wheels and track are the fundamentals of any model railway scale. From the earliest days of the Society the provision of these has concentrated the minds of those responsible for Society products. Kits are very nice, but without wheels or track to run them on kits are just static exhibits.

It has been a long process to ensure wheels and track of the requisite quality are available to support 3mm fine-scale modelling. A die to shape wire into a bullhead rail profile was created long ago and thirty years have passed since the first fine-scale driving wheels were released. The flexible trackbase for 14.2mm gauge has been around for a dozen years, as have the loose chairs from which to make pointwork. What has been missing all this time is a way to meet the greatest challenge in building fine-scale layouts: a foolproof way of building reliable pointwork. That is about to change.

British Finescale is one of the legion of small outfits who provide components and sundries for model railways. Until recently its focus has been on N gauge and its products a range of point kits to supplement the commercial ranges. About a year ago the owner, Wayne Kinney, moved into fine-scale 00, with a new approach to point building that exploited the improved 3D resin printers that were available. They were a minor sensation on the internet forum RMweb, which is how they came to my attention. It was clear from discussions on RMweb that it was feasible to adapt the design to 3mm scale. After an exchange of e-mails Wayne agreed to develop a B6 point for the Society.

The design brief for Wayne was that the trackbase had to use Society bullhead rail and be compatible with the Society flexible trackbase. It also had to comply with Society 14.2mm-gauge standards. To assist in that the rail has been provided from Society stocks in return for a hefty discount on the general sale price.

The kit is made up of a 3D-printed base, two switchblades machined to a fine point from bullhead rail, some more rail machined to create a crossing, a tiebar and sufficient bullhead rail to complete the turnout. The sleeper base is printed in brown resin. All the chairs are an integral part of the print and this includes chairs to hold the rails making the crossing, chairs for checkrails and slide chairs to support the point blades. Society bullhead rail is a sliding fit into these chairs, loose enough for easy assembly but tight enough to hold the rail firmly. Two nice details are that four of the seven slide chairs have a thin locating lug to hold the rail and prevent it flexing when the blades switch over, and secondly that the chairs holding the check rails automatically provide a small amount of lead-in to the check-rail gap.



The switchblades have to be cut to length before assembly. They are provided with lugs and small pins are soldered on.

These are a push fit into holes in the tiebar. The blades come ready planed – milled – to a very fine point, meaning that no joggling or recess filing is required on the stock rails. On the other hand care does have to be taken when assembling the point not to damage the switchblade ends. To protect them while they are in transit or storage they are shipped inside a protective shield.

The only soldering required is for the electrical connections. A wire needs to be soldered to the crossing so frog polarity can be switched and the switch rails need to be electrically bonded to the nearest stock rail. There are comprehensive instructions for the kits, though at the time of writing the decision on whether to include them in the kit or offer to users as a downloadable file on the Society website still has to be taken.

The advice from our testers – all experienced makers of handbuilt track – is to read the instructions and follow them. It saves having to retrace steps. Our testers all report that these kits can be assembled in under an hour and that they work first time.

This is a fine product that will be welcomed by those who model in 14.2mm gauge and should also persuade many of those wondering whether 3mm fine-scale is for them that the fundamental components for a layout are available.

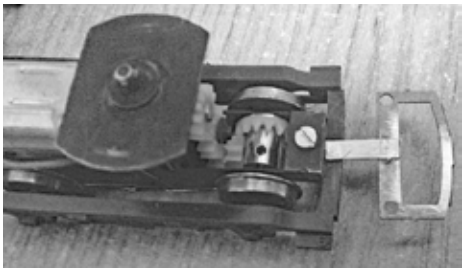
Wim Harthoorn

WR HYMEK DIESEL HYDRAULIC
Geoff Helliwell and Lenny Seeney
BR CLASS 24 Bo-Bo DIESEL
Lincoln Locos

I retired last October and through the generosity of my company and colleagues I was able to buy these models. My sense of humour immediately found it amusing that the Hymek, whose prototype had a central body-mounted engine driving a power train to the bogies, has bogie mounted motors, and the Class 24 prototype had bogie-mounted motors while the model has a single chassis-mounted motor with a mechanical drive to the bogies.

The Hymek is a collaboration between Geoff Helliwell and Lenny Seeney and the Class 24 is from Lenny's Lincoln Locos stable. In both cases the body is by Lenny and both are excellent. The improvement in quality over the last few years is phenomenal. Both are supplied ready to drive but require you to fit a number of details, such as handrails on the Class 24. You also need to paint them and find a way of glazing them. The Hymek has two electrically-linked power bogies built by Geoff and fitted into the body shell using his excellent press-stud method. Lenny has opted for a centrally-mounted double-ended motor driving a gear chain on each bogie. Both locos pick up from all wheels and the power trains are connected to all four axles.

The Hymek as supplied tips the scales at 83 grams and requires the fitting of buffers, interior cab detail and the fuel tank. Geoff's photo's in *Mixed Traffic 226* show better than my words how good it looks. To match my Anita-style couplings I glued a 10mm extension to the top of the bogie drawbar and the coupling underneath that.



I found the model beautifully controllable from a barely noticeable crawl to flat out. The only very slight downside is its top speed is a little under that of the prototype. I only noticed that because I am used to Triang locos with their ridiculous top speed. I was pleasantly surprised at its haulage capability, given its light weight: it started smoothly and cruised round the

garage with eight Kitmasters, then trundled thirty wagons at 30mph: just beautiful to watch. It glides without hesitation across Peco H0m points in the fiddle yard and the handbuilt ones in the station. Additional weight could be glued inside the body shell or into he fuel tank before fitting it if you felt it necessary. This would improve adhesion especially if you have steep slopes on your layout (conspicuously missing in my bit of East Anglia).

The Class 24 has Lenny's large-loco style of chassis with a large double-ended motor centrally mounted with drive shafts to a worm drive over each bogie. The bogies are a neatly designed 3D-printed unit that includes the bogie sides. The buffers are supplied separately and Lenny has put a bent wire coupling on one bogie.

The 24 weighs in at an impressive 200 grams, helped by two large weights at each end, cast to give a representation of the cab interior, and another weight in the fuel tanks between the bogies. Needless to say, its haulage capability is excellent: 13 carriages (all I had with couplings) didn't seem to slow it down at all. Like the Hymek it moves smoothly from a crawl to full tilt, which due to different gearing and drive arrangement is a little faster than the prototype. Again it had no problem on any of my trackwork, the eight wheel pick up ensuring no stalling by either loco.

Which do I prefer? I would happily take either. The Hymek needs a little more work because I may need to add weight if I want to increase its haulage capability and it has a couple more details to fit. The 24 has better haulage as supplied but a lot more care was needed to separate the body from the chassis. Price-wise there was £15.00 in it: £180.00 and £165.00 respectively, including P&P. If you think that is expensive, I ask you to look at the price of a 00 loco these days (which has the advantage of mass production and large production runs). Geoff and Lenny, I thank you for your expertise and the time and effort you are putting into your products. I am a very satisfied customer.

Paul Furner

CRANKPINS
Society Products
From the Society Shop: prices in text

As a number of members are adopting 3D printing for wheel centres, the Society has made crankpins, nuts and washers available in packs of 10 of each item, in long and short forms. These are:

SD125: 10 off each crankpin (short), nut and washer – £6.60
SD126: 10 off each crankpin (long), nut and washer – £6.60
SD132: 10 off nut and washer – £5.10

These items are identical to those supplied with Society fine-scale wheels and so can be used to replace any broken or lost items. Those designing 3D-printed wheels should know that the current batch of crankpins measure 0.96mm diameter over the plain portion of the pin.

These crankpins can also be used with SQ wheels instead of the fully-threaded 14BA screws supplied with those wheels. To fit the crankpins to SQ wheels, a broach can be carefully used to open up the hole so that the crankpin fits with a little interference. Note that if it is too tight a fit there is a risk of bending the pin when inserting it in the wheel. A touch of adhesive may provide peace of mind.

(Members using these crankpins – and any other – may care to consider that, if using one-piece coupling rods and all-flanged wheels, the coupling rods need to have a side-float on the crankpins that is equal to the side-play between the chassis and the backs of the wheels. In general, the

plain portion of these crankpins does not provide sufficient side-float for small radii curves so it is suggested that the nuts be assembled in such a way as to provide the required side-float and then secured by a touch of varnish.)

Graham Shirley

BLASTPIPE

You invited comments on the new N-RTR Hymek loco shown in the last issue [*and in Barry Witteridge's photograph on page 12 of this issue – Ed.*]. This is a nice-looking model. Lenny Seeney has done a very good job to produce the body and Geoff Helliwell's motor bogies are excellent.

Put straight on to a test track, it ran very well. My son tested it on his continuous loft layout, with five kitbuilt coaches. He was very impressed and it ran without fault. I have since added some lead strips to the body sides, as indicated in the accompanying instructions, and this has produced faultless running and very fine controllability whilst shunting twelve Parkside Iron Ore Tippler wagons through the many points on my terminus layout.

I am now in the process of finishing the model and hope I can do justice to the excellent work of Lenny and Geoff.

John Williams
Eynesbury, St Neots

The detail of Lenny Seeney's body married to one of Geoff Helliwell's chassis makes the Hymek an impressive model. The only improvement I have made was to replace the handrails on the nose ends of the loco. I wasn't brave enough to tackle those either side of the doors.

Barry Witteridge
Poundon, Oxfordshire

I was interested to read how impressed you were with my B12/3 at the Inaugural Meeting of the Society. That loco nearly made me give up scratchbuilding as beyond my skills. The body caused few problems, but the mechanism nearly defeated me. The chassis rolled with no binding, and the shaft drive from the tender spun freely, but as soon as I tightened up the grub screw on the worm wheel the loco could hardly move. I played around with the mesh to no avail.

It never occurred to me to suspect the motor, a Romford Terrier, of being a duff design. Luckily, I showed the model to a more experienced modeller who told me the Terrier wouldn't pull the skin off a rice pudding as the magnet was too weak; his advice was to try a K's motor. I did, and the loco would now romp up a 1 in 30 grade with a train in tow. I had read an article in a magazine where someone had used a Terrier, so assumed it must be okay. That taught me two lessons: don't assume the trade always know what they're doing, and don't assume that because it's in a magazine it must work.

The rest is history. Eight more locos followed in 3mm and another fifteen in S, but I had come very close to giving up on scratchbuilding.

Jas Millham
Chelmsford

OBITUARY

Dennis Snook, who died in January, was a stalwart of the Bristol Area Group and a fine friend to many Society members. Once a BR signalman, he knew about operation and was often found at the controls of his own and friends' layouts at exhibitions all over the country. He designed his home layout to be fully signalled and built his own lever frames. For the Dean Forest Railway he was a director, life member, driver and track designer. "Den taught me many of my modelling skills and was on the end of a computer or phone to talk to when I had a problem," writes Caroline Cleaveley. "Recently he arranged the signalling diagram for my office layout, which will from now on run in his memory." Geoff Gay

adds "I met Den at an exhibition in the 1970s and through his enthusiasm I joined the Society. This started a lifetime friendship. Many hours were spent running the timetable on his large layout in Bristol. I will miss him very much."

Dennis will be happily remembered by many, and we extend our sympathy to his family.

TAIL LAMP

EXHIBITING AGAIN

Though some exhibitions have had to be cancelled because of Covid-19, others have taken place. Paul Hopkins took Modbury Torr to Doncaster in February, where he was assisted by Martin Olley and Garry Hall and Neveah (10½), seen here.

ANNUAL COMPETITIONS

When making entries for the Annual Competitions at the AGM in Swindon, please bring them to be photographed for *Mixed Traffic* before putting them on display. Coverage of the competitions was a much-appreciated feature of each July issue until 2019. If all goes well it will be good to see it return for the first time since the pandemic put a stop to in-person Society events.

IN FUTURE ISSUES

- The 2022 Annual Meeting
- Kevin West's Sabins End
- 3D: a beginning
- Something by you, perhaps?

BFB DRIVERS

From page 7

If you make your own tyres, then of course it's fine to use a 3-jaw chuck, providing that the metal you are making the tyres from is never moved in the chuck, but if you are turning your own tyres up then I doubt if you need me to tell you how!

To drill for crankpins a simple jig is needed to ensure consistency (page 7). A piece of scrap metal with a pin for the axle, a hole for the crankpin and a hole to sight the spokes so that the hole is properly aligned is all that is required

THE COMMITTEE

Chairman: Richard Pope [redacted]

Secretary: Phil Smith [redacted]

Treasurer: David Garner [redacted]

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THREE MILLIMETRE SOCIETY PRODUCTS

NEW FINE-SCALE LOCOMOTIVE CRANKPIN SETS

As described in this edition of *Mixed Traffic*

SD125	Short crankpin, nut and washer (10)	£6.60 per pack
SD126	Long crankpin, nut and washer (10)	£6.60 per pack
SD132	Nuts and washers for crankpins (10 of each)	£5.10 per pack

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WH003	Twenty-foot ISO Container	£8.00
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CV010	Type AF Frozen	£4.40
CV011	Type A Planked Dia 3/003	£3.80
CV012	Type A Ply Dia 3/002	£3.80
CV014	RCH/BR Dia 3/001	£3.40
CV015	RCH Standard Container, Type BD	£4.40
CV016	GWR Type B, 13ft 6in long, vertically planked	£3.80

Please include your name, membership number and address with your order and allow 28 days for delivery

Society Products are available by post from

Peter Bailey, [redacted]

Or by e-mail: [redacted]

WORSLEY WORKS 3mm

Do you fancy coming to the

Worsley Works Modellers' Weekend 2022?

Whately Hall Hotel
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Thursday 13th to Sunday 16th October

http://www.worsleyworks.co.uk/WW/Modellers_Weekend.htm

The Worsley Works Modellers' Weekend has been encouraging modellers for over 25 years. It is an informal get-together of modellers with experience in scales from 2mm to 16mm.

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B16 4-6-0 and tender	**£55.00**
WD 2-8-0 and tender	**£55.50**
WD 2-10-0 and tender	**£55.00**

Check full range at website
Lincoln-locos.co.uk

GALLERY

The South Downs & Solent Group took Stedham Mill to the Bognor Exhibition in January. Here are trains at all four platforms at the western end of the station – it must have been a busy day. Garry Hall has recently assembled Lincoln Locos' 72000 *Clan Buchanan* and 71000 *Duke of Gloucester*, which awaits Caprotti valve gear. *Paul Hopkins, Garry Hall*

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* This is a fine scale model and will need the appropriate track to run properly.

IMPORTANT NOTE REGARDS TO ORDERING...

In order to give everyone an equal opportunity to purchase these fine models, orders will be taken up until the 14th May 2022 and in the event of more than one person wanting a particular loco, a draw will take place. Do not send any payment until you are told that you have been successful in your purchase which will be after the 14th May. Please either email or write to John Carter at [redacted]