MIXED TRAFFIC

July 2022

228



The 3mm Society Magazine



THE TONY BIRCH MEMORIAL AWARD

For the first time, members' voting produced a three-way tie, so the trophy will be shared by Tony Briddon, Paul Hopkins and Peter White. The winning models are Tony's LMS 3P 2-6-2T (above), Paul's Brighton Terrier and Peter's Southern Class U Mogul, all finished in BR lined black livery.





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 $\ensuremath{\mathbb{C}}$ The Three Millimetre Society and named contributors, 2022

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giving your name and address. Tim also stocks back numbers.

Cover

Bob Brown's fine model of a GWR Station Building designed by William Clarke won the Ralph Murfitt and Martin Brown trophies at the 2022 Annual Meeting.

EDITORIAL

At the Annual General Meeting in May members showed their appreciation of the devoted work of retiring Chair Richard Pope and Trading Officer Peter Bailey and welcomed their successors, Martin Gentle and Peter Leach. After the meeting, Richard Brice and members of the East Midlands Group took over Society Sales (see page 24 for contact details).

Our Society has always been able to depend on willing volunteers to serve on its Committee, run Area Groups, staff sales stands or write articles and take photographs for this magazine. However, in recent years it has not always been easy to find replacements for those retiring, often after many years' service. There is currently a pressing need to find a successor to Caroline Cleaveley, who gave a year's notice that she would step down in October from her work with Non-Triang Sales, and at the 2023 Annual Meeting John Carter, our efficient Second-hand Sales Officer for ten years, will also retire. John transformed how Second-hand Sales works and has co-ordinated sales, purchases and pricing, working with Caroline, Eric Large (Triang Sales) and Mark Haynes (Spares Sales).

It is worrying that no individual or Group has stepped up to take over Non-Triang Sales, and it will be still more worrying if no successor to John can be found before the 2023 AGM. Be warned: there is a very real danger of these services ceasing and the stock being put in store. Do you want that to happen? Can you do anything to serve your Society?

THE 2022 ANNUAL MEETING

The Tony Birch Memorial Award

First Tony Briddon: LMS Stanier 3P 2-6-2T 40155 Paul Hopkins: LBSCR Terrier 0-6-0T 32640 Peter White: SR Class U 2-6-0 31618

HC Nick Salzman: GWR Broad-gauge Hawthorn Class 2-4-0 Hackworth

The Market Drayton Trophy

First Paul Hopkins: Lowmacs loaded with army vehicles

Second Peter White: NER Milk Vans

HC Geoff Gay: Three weathered wagons

HC Mick Rawlings: Three GNR(I) Brake Vans

The Cuckmere Trophy

First Mike Corp: Three LNWR Coaches in LMS livery

Second Bob Brown: GWR D95 Brake Third in BR livery

HC Brian Golding: County Donegal Railway Brake Third

The Ralph Murfitt Trophy

First Bob Brown: GWR William Clarke Station Building

Second Paul Hopkins: Northgate Garage

HC Tim Woods: Tetbury Engine Shed

The Broad Green Trophy

First Richard Brice: LMS Articulated Diesel Railcar

Second Peter White: NER Electric Railcar 3170

HC BR Class 08 0-6-0 Diesel Shunter D3022

The Martin Brown Trophy for the model best exemplifying the possibilities of 3mm scale was awarded to Bob Brown for his GWR Station Building. The Geoff Gamble Award for service to the Society went to Lenny Seeney for producing the wide range of 3D-printed steam and diesel loco bodies and mechanisms which are so popular with members.

In May the Society held its first in-person AGM since 2019. After the Covid-19 restrictions of the previous two years it was so obviously a pleasure for old friends to meet and for members to buy kits and components from the Society traders, from fellow members who had developed kits and components of their own and from 3SMR. There was also time to study and delight in the many impressive models entered for the annual competitions (efficiently run by Linda Shillito and Peter Stratford), all of which were decided by the votes of members present.

For the first time, there was a three-way tie in the locomotive competition and The Tony Birch Memorial Award will be shared by Tony Briddon, Paul Hopkins and Peter White, whose models – a Stanier 2-6-2T, a Brighton Terrier and a Southern Mogul – appear inside the front cover of this issue. Nick Salzman was Highly Commended for another interesting GWR broad-gauge model, the 2-4-0 Hackworth. No fewer than 21 engines were entered for the competition, some scratchbuilt, some kitbuilt and some made from 3D prints. As usual, Mick Rawlings



impressed, this time with a scratchbuilt GNR(I) Class AL 0-6-0, with working inside motion (see page 10). In addition to his winning model, Tony Briddon displayed the LMS Princess Pacific he described in *Mixed Traffic 225*. Barry Witteridge had built an S&DJR 7F 2-8-0 finished in BR black as 53804. Bob Brown, a winner and runner-up in other competitions, presented a neat GWR 94XX Pannier Tank in weathered BR black, while Peter White's other entry was North Eastern Class S3 4-6-0 927 (in LNER and BR times a B16).

The popular winner of The Market Drayton Trophy was Paul Hopkins' three Lowmacs carrying army vehicles. Peter White was only a vote behind with two fine NER Milk Vans and a Luggage Van in glowing crimson. There was a tie for third place, and Geoff Gay's weathered BR wagons and Mick Rawlings' GNR(I) Brake Vans, both fine models, were Highly Commended. Nick Salzman's GWR Milk Tanks and Tony Briddon's LMS Parcels Vans were also impressive.

As often, there were fewer models of coaches on display, but the winner and runner-up stood out from the field and bagged most of the votes. Mike Corp won with three LNWR Corridors in LMS livery, for his new Porthdinllaen layout. Bob Brown's GWR D95 Corridor Brake Third was expertly finished in BR carmine-and-cream livery. It was a pleasure to see a narrow-gauge model Highly Commended, Brian Golding's CDRJC Brake Third in sparkling geranium-and-cream.

The Ralph Murfitt Trophy went to Bob Brown for the delightful Great Western William Clarke Station Building from his latest Foxbury branch layout. Very much in the spirit of Bob's mentor, the late Peter Gentle, this fine model – which gained more votes than any other model in the five competitions – also won The Martin Brown Trophy, best exemplifying the possibilities of our scale and, in effect, the Best in Show. One of the larger models in the competition's history, Paul Hopkins' Northgate Garage (*Mixed Traffic 225*) came second and Tim Woods was Highly Commended for Tetbury Engine Shed, from the laser-cut kit. Brian Golding entered a GWR water tower and some London Transport and Greenline buses.



Paul Hopkins' Northgate Garage

Nicholas T Smith



Fourteen models were entered for The Broad Green Trophy, for non-steam locomotives and railcars. Richard Brice was the delighted winner of the trophy, for the scratchbuilt LMS Articulated Railcar he described in *Mixed Traffic 224*. Peter White's North Eastern Railway Electric Autocar 3170, from an earlier era of railway history, was equally impressive, as was Geoff Helliwell's Highly Commended BR Class 08 Shunter, from the Worsley Works etched kit. There was a good showing of Lincoln Locos 3D-printed locomotives and railcars, including Dennis Bunge's SR 10201 in early BR black and AC Cars Railbuses by Bob Brown and Andrew Thomas.

Earlier, Richard Pope had amplified his final Chairman's Report by thanking retiring Trading Officer Peter Bailey and his team for keeping the Society Shop functioning so efficiently during the two difficult years of the pandemic. Peter paid tribute to his hardworking team, Mike Corp, Alan Halse, Ed Moreland and Len White and thanked members for their patience during the lockdowns, when the team had to deal with three times more postal sales than in normal times. Peter Leach joins the Committee as Trading Officer, working with a Sales Team based in the East Midlands and led by Richard Brice. Richard Pope asked members to realise that it would take time for the team and their customers to settle into new routines. He also thanked New Products Officer Graham Shirley for introducing items members wanted during his first year in office.

Richard next observed that John Sutton was being reappointed to the Committee for the fiftieth time, having first been elected as Magazine Editor as long ago as 1972. This long service might well be unique among British model-railway societies. Responding to spontaneous applause, John thanked members for their help in creating the magazine. It had been a pleasure and a privilege to serve the Society for so long (with a gap of six months in 1981) and he looked forward to producing his 200th edition of *Mixed Traffic* in April 2023.

When Richard Pope became Chair in 2020, the challenges he and the Society would face during the pandemic were only just becoming apparent. His time in office was marked by diligence, clear thinking, decisiveness, efficiency and kindness, earning him the respect and affection of his Committee colleagues and Society members. To mark his stepping down he received a voucher for a day's travel on the Severn Valley Railway and generous applause.

Our new Chair is Martin Gentle. Unable to be at the AGM because of a family wedding in Canada, he sent a statement which was read to the meeting by Secretary Phil Smith. Martin saw key objectives for the coming year. There is an urgent need to recruit volunteers to succeed Caroline Cleaveley (Non-Triang sales), who is stepping down in October, and John Carter, who will retire as Second-hand Sales Officer in 2023 after ten years' service. Without volunteers for these posts, stock will have to be put in store and trading will cease. The Society will also need to become self-sufficient in terms of essential components such as wheels and gears and plan to spend some of its accumulated resources on projects which will benefit members. As always, there will be much for the Committee to consider.



ICI 43T BOGIE HOPPERS PHIL SMITH builds a rake



Try as you might you'll not find any prototype reference to these well-known wagons being seen at Exeter Central. They spent their lives moving bits of Derbyshire into Cheshire by shifting limestone in 16-wagon block trains to ICI's chemical works in Northwich. They've been a favourite of mine for many years and I've built examples in 2mm and 7mm scales. I hatched a plan which involved modifying the chassis of the Triang bogie tanker and scratchbuilding a plastic body for it. After building a single example to prove the concept, I was faced with the task of repeating it a further seven times in order to build half a rake (which would be 4ft long and as much as the layout could accommodate).

Stepping back a little, on and off I had spent the previous three years learning to use a cheap Chinese CNC milling machine and FreeCAD to generate the design and the GCODE which the machine needed to operate. I had to work out by trial and error which cutter to use and the speeds and feeds needed to cut plastic without melting it. Based on this learning I managed to cut a set of "flat" parts in 0.75mm plastic from which to assemble the body. The Triang bogies were the correct wheelbase but had the wrong sideframe profile, so I designed and cut 56 "half-bogie" overlays in 0.5mm plastic to be glued to the bogie sides, changing their shape to a more accurate form. The bogies were completed by fitting PTFE bearings, axlebox covers and an outer rib round the top to give an impression of the plate-frame type fitted to the wagons from the 1950s. The CNC machine saved an awful



lot of hard work cutting the parts, but more importantly, the bits were accurate and consistent and I would never have managed that by hand.

The prominent L-shaped side ribs were made by laying Microstrip in place and using solvent to soften the plastic so it could be bent to shape. T-section was used to fashion the end supports, again softened and bent using solvent. The brake handwheel was punched out of 0.25mm plastic. Using a bench drill, a hole was drilled through some 6mm MDF and a piece of plastic placed over it. The drill bit was reversed in the chuck with the shank protruding, positioned over the hole above a piece of card and punched through to make a clean round disc for gluing to the chassis.

I acquired five damaged bogie tanker chassis, removed the bodywork and cut off a lot of the ribbing and unwanted detail. They were cut in half and 21mm sections spliced in to make the distance between the bogies correct. I then cut a bit from behind the headstocks and reattached the headstocks to give the correct overall length. The Triang couplings were left after much debate, because although the hoppers would look a lot better close coupled, I didn't fancy the work involved.



The two remaining chassis were made from scratch, using four complete bogies rummaged from Second-hand. I made new C-section side girders by splicing Evergreen plastic strips to square profile plastic and glued spacers at appropriate places to create the spidery fretwork needed to support the body.



The bogies were attached with 6BA screws. The vacuum pipes are 0.5mm wire bent to shape, passed through the holes in the body support plates and Superglued in place. The wagons need weighting, but the very open lattice chassis meant there was precious little places to hide a weight. I built a couple of cross-shaped model weights from scraps of plastic, tapered to match the side girders and with detail on top to represent some of the chassis cross members. These were used as masters for sand casting seven in lead. They were stuck on with contact adhesive.



The originals were furnished with flame-cut letters riveted on to the body sides. There were painted white, but the heavy brown weathering which these wagons adopted served to cover the letters so that they could only be seen at certain angles, depending on the light. To recreate this effect I used Inkscape drawing software to draw the letters in the correct typeface and size, then fitted a small laser to the CNC machine to cut them out of manilla envelope. I was able to glue them in place on the wagon body sides and at 0.15mm thick, they worked as I hoped by being just visible under the thick coat of grime at the right angle.



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SABINS END KEVIN WEST's exhibition layout



Sabins End is a TT terminus layout. I describe it as TT gauge as memories of TT layouts in *Railway Modeller* and my cousin's TT layout in the 1960s were what got me involved in 3mm modelling in the first place, first by collecting Triang before moving on to building layouts. Thorpe Road, my previous layout, was a 12ft x 8ft double-track main line and was not really suited to one-man operation. Taking it to exhibitions really needed a van and a team of six to eight to run it properly. The layout was sold in 2018.

Construction of Sabins End began in early 2013 after a trip to the Kingsbury Meeting. I spent quite a time watching the West Midlands Group layout Fulls Top and thought that adding a couple more sidings to its track plan could make an interesting compact layout. The layout is 8ft long by 18in wide, mounted on two 4ft-long boards. These are traditional 2in x 1in framing topped with 12mm chipboard, making a strong stable base. One board is fitted with a set of folding legs at each end to make it self-standing. The other has a single set of legs and piggybacks off the main board.

The station is a traditional British country design, with buildings constructed of stone of a kind that might be found in either the West Country or Yorkshire, depending on what stock is being used. Facilities include a main platform with a



run-round loop and a shorter bay platform. The run-round loop is extended at each end to form a loading dock at the station end and a short siding at the country end which in practice is normally used for stabling a brake van while shunting. The goods yard is accessed halfway along the loop and consists of three sidings, two facing the country and the other a kickback to the coal staithes. Another kickback siding off the bay platform road gives access to the loading dock of a mill, Straight Seams, Purveyors of Stockings and Fine Hosiery.

Trackwork is the plastic-based GEM type from the 1970s, bought from Society Second-hand Sales. This works well with my locos, which are mainly Triang-based. Point motors are H&M SM3s from the same period. Couplings are either Triang or Peco, but I try to not mix these in goods trains at exhibitions as the slightly smaller size of the Peco couplers can cause reliability problems on the uncoupling ramps.

Scenery is made from traditional polystyrene blocks covered with paper strips, painted and covered with flock powders. The buildings are mostly from the Bilteezi range, the exception being the mill building which is a Scalescenes 4mm-scale downloadable kit printed out at 75%. Peco N-gauge mouldings are used for the platform edging and the stone road bridge. The platform edges are fitted to 2mm strips to raise their height and as the road bridge is only seen from one side I was able to cut a few courses of stone from the unviewed side and cement them to the bottom of the visible side to provide the required height.

There is only one signal, at the start of the single-line section. This is not truly prototypical, but a nice feature. It is a Dapol N-gauge product. Operationally the layout is quite challenging owing to the kickback sidings for the coal staithes and end-loading dock requiring running round the stock to pick up or deposit wagons, while the wagons for the mill loading dock need to be shunted across the main line. The headshunt is also limited in length, which adds to the interest. You have to plan ahead otherwise you end up with a string of wagons too long to move.

Control is from an All Components feedback controller with a single handset on a wander lead. The control panel for sections and points is mounted in a box that fits on to a trav mounted on the front for use at home and at the rear for exhibitions. There is a lighting pelmet hinged for transport and held in place by four drop-in pins in split hinges. The fiddle yard has four 21in-long cassettes made from aluminium angle on wooden bases, alignment to the exit track being by bulldog clips which also transmit the track power.



Telling detail in the goods yard



A GNR(I) AL CLASS O-6-0 MICK RAWLINGS' latest 15.75mm-gauge loco



The Great Northern Railway AL Class consisted of eleven locomotives constructed from 1893-96. Seven were built by Beyer Peacock and four at Dundalk. The engines were rebuilt from 1914-19. No 59 was a Beyer Peacock locomotive delivered to the GN on 1 January 1894. When the assets of the Great Northern were split between the Ulster Transport Authority and Córas Iompair Éireann (CIÉ) in 1958 No 59 was transferred to CIÉ, but was withdrawn two years later on 29 October 1959.

The Great Northern never had many tank engines. In later years most junctions had an AL as station pilot and No 59 worked at Enniskillen from the early 1950s until closure in September 1957. It was always spotless. The model depicts it as running in August 1957, with a rolled-up weathersheet on the cab roof.

The loco has compensation and working inside connecting rods and pistons. Painted red, they are visible between the front and centre splashers. The drive is a High Level 60:1 gearbox with a driver stretcher to the rear axle. A drive shaft runs through the firebox to the tender to connect to a Mashima 9/16 open-frame motor with a flywheel. The tender chassis is split-frame with sprung axles and there are no pick-ups on the wheels.

There appear to be no springs on the tender frames because the springs were inside. The Great Northern was the last railway company in the British Isles to build this type of tender and many of them remained in service right up to 1958.

> Photos: John Sutton (above) and Nicholas T Smith







Paul Hopkins won the trophy with three Lowmacs carrying military vehicles and Peter White came second with two North Eastern Railway Milk Vans and a Luggage van.

At the AGM THE MARKET DRAYTON TROPHY

Geoff Gay was Highly Commended for three skilfully-weathered plastic kits, a 12T Pipe Wagon, a Southern 12T Van and a 7-plank former Private Owner Coal Wagon. Mike Rawlings' scratchbuilt 15.75mm-gauge GNR(I) Brake Vans were also Highly Commended. John Sutton





Mike Corp won the trophy with three LNWR Corridor Coaches made from Haywood etched sides, Worsley Works underframes and Ian Kirk plastic B-Set roofs.

At the AGM THE CUCKMERE TROPHY



The runner-up was Bob Brown's W4944W, a Great Western Brake Third in the BR carmine-and-cream livery of the 1950s. Brian Golding's County Donegal Brake Third was Highly Commended and the Pullman Car Ruby was the centrepiece of Paul Hopkins' rake.



Photos: John Sutton





At the AGM THE BROAD GREEN TROPHY

Richard Brice used a Silhouette Cutter to create the side overlays of his trophy-winning LMS Articulated Diesel Railcar, which was described in *Mixed Traffic 224*. Peter White built NER Electric Autocar 3170 and was the runner-up. John Sutton



Geoff Helliwell built this green-liveried BR Class 08 D3022 from a Worsley Works kit and was Highly Commended. Nicholas T Smith









Nick Salzman's GWR Milk Tanks and Cordon Gas Tank and Robin Idle's expertly-weathered Coal Hoppers were some of the fine models entered for the Market Drayton Trophy competition.

AT THE AGM

Photos by Nicholas T Smith

Andrew Thomas's AC Cars Railbus and Brian Golding's London Transport buses were impressive.







3D PRINTING: A BEGINNING ELVIS EVANS designs a 3D hopper wagon body

There are many people in the Society more qualified than I in 3D printing, but this can be an introduction for those starting out. First decide what you want to model. I wanted a hopper wagon and went for the simplest one I could find. It's an LMS 24T type. As with all modelling, it is necessary to acquire information. This is the time-consuming bit. I found many photographs but no drawings for the type of wagon I had chosen. So some of it is guesswork, though it looks about right – closer than Triang got with some of their models anyway.

I sketched the wagon out freehand to get a feel of what needed to go where, then drew the wagon in 2D using AutoCAD, which is an old software package that works very well indeed. I made sure there were lots of dimensions on this drawing as they would help for making the 3D model. For 3D I use SolidWorks, which is very expensive – but I could use it for free while I was working.

There are two ways to approach any 3D modelling. One is to start with a small part (say, a floor of a wagon) and then add parts to it to be the sides and ends. In this case I did it the other way by starting with a big block and then cutting features into it. I also made the wagon in two parts, the hopper and the base, because I felt that it would be best to print the base the right way up and the hopper upside down.

I should point out that this is for a filament printer and what was actually used was an Ultimaker 3 with PLA as the build material and PVA as the support structure. This support material is water soluble and so can be soaked off. In this case I did all the outside of the hopper first and then did a shell cut for the insides. The base part was much easier. *Concluded on page 22*



A GNR STIRLING SINGLE GARRY HALL builds an East Coast classic



After seeing this loco in N gauge on the Shapeways site I wrote to the designer and asked if he could scale it up to 3mm scale and he agreed. After about a week he wrote to say it was done and sent some 3D views to see if it was okay. It seemed okay so I said yes. It was uploaded on Shapeways on the Sunday night and I ordered it straight away. By Friday it had arrived, and the printed finish was a lot better than on previous models I have had from them.

On first looking over the body I decided it was not going to be a loco-driven model and I had thought originally I might have to use a Triang A1A bogie in a coach. The designer had done some four-wheeled coaches in N to go with the Single, with one made to accept a motor bogie. I guessed I might have to do the same so asked for the coaches to be upscaled too. While these were being done I considered the possibility of a tender drive instead. The outer tender wheel spacings were close for a Halling bogie I had, so a set of false wheels would have to be made for the centre (still waiting at the time of writing) – but the bogie would be fine.

The Halling bogie was not the usual short-wheelbase design but a longer one with a cast top. A little trimming on the ends into a step was required and it was ready. It was a lovely fit widthways, which prevented any sideways movement. Owing to the close proximity of the chassis to body rear there was no way to fit a Triang coupling, but I worked out I could use one of my own etched Triang-style ones soldered to a bracket and placed over the bogie block. Once this was dropped on and the body fitted over it stopped the coupling coming off without any need for fixing. The cast motor top has a block of 6mm brass glued to it which has a hole tapped for the body to be secured. It also gives a little more weight.

Single wheelers, like 4-4-0s, can be difficult to balance to avoid their being front heavy, so I decided to use a solid piece of brass extending from just in front of the large single wheel, with a hole for the driver and a slot, Triang style, for the rear wheelset. This block had material removed in front of the wheel to allow more weight to the rear, but I left a lip on to use for mounting to the body. This was drilled



8BA clearance, and thankfully the body had a piece of its print in a good location that I could tap 8BA. The wheels are all Romford. The front bogie block is a standard Triang one. I initially fitted 10.5mm-diameter wheels to it, but these fouled the piston rod when used on Triang curves, so the solution was to use 9mmdiameter instead. I was going to make the unusual bogie splashers, but unfortunately, they would also be fouled, so I decided to leave them off.

The "pistons" are like those on the Triang Pacific chassis, a fixed piston rod with a connecting rod sliding along it. The pistons are soldered to a plate glued between the cylinders and the rods made from some etched ones I had in stock.

The loco-to-tender coupling is part of the plate which holds the rear wheels in place as there was no suitable place to mount one elsewhere. Space with strength is very limited. The body came with some 3D printed buffers to fit, but I prefer metal ones (not white-metal) so Triang brass loco buffers (which are very like the GNR type) were fitted instead.

The loco and tender bodies were painted with Precision GNR paints and the transfers are all Fox 00 - a little overscale, but there is nothing else suitable. The tender lining was a bit of a pain because of the reverse curve of each corner, but after persevering it looks fine. The letters GNR are individual ones taken from the words Great Central Railway as Fox do not do GNR ones. I decided on giving her the number 5 as I have a photo of No 5 in York station. Photos can be cruel, though, especially as No 5 is finished in gloss as opposed to satin.

The model looks nice, is unusual, and runs well on either Triang track or on my main layout, so I'm really pleased – so much so that I asked the designer to do me the GWR Dean Single too, which will be *Lord of the Isles* like the Triang 00 model I had when it first came out. I now have the bodies, awaiting a start date.





THREE GNR(I) BRAKE VANS 15.75mm-gauge models by MICK RAWLINGS



Number 16 was one of 55 four-wheeled 20T vehicles built to the last Brake Van design of the Great Northern Railway of Ireland. It was one of only six which had vacuum brakes.

Number 56 was one of 37 six-wheeled 25T Brake Vans built from 1914-24, but for some unknown reason it was converted to four wheels in November 1945, using components from the newer four-wheeled vans.

Number 95 (above) was a six-wheeled 25T Goods Brake Van with three compartments, for the guard, luggage and drovers. It was one of the first 25T vans built in 1909, to be used only on the route from Armagh to Newry. (This was the line on which the Armagh rail disaster, in which eighty people died, occurred in 1889.) The vehicle could do the job of Road Van as it had a large compartment for luggage and parcels. The drovers' compartment meant that it could be used on cattle trains, conveying the extra staff needed to load and unload the beasts.

The model is of the van as it was in 1958. The duckets had been removed the year before and one end of the drovers' compartment had recently been timbered up, covering a window. The planks were left unpainted (as were replacement doors on some GN goods vans and many repaired wooden wagons in the British Railways fleet). The chassis is a West Midlands Group articulated six-wheeled unit. To make it work in 15.75mm gauge I snapped off the w-irons and moved them inwards and fitted plain top-hat bearings. The springs and axleboxes are fitted to the van body. The B&B couplings are mounted on the ends of the articulated units so that they always line up with the centre of the track – which is useful on a circular layout like Ballyconnell Road.

(All three vans appear in colour on page 11. Photos by John Sutton)



IMPROVING THE TRIANG CASTLE GARRY HALL refines the old favourite



For many of us the Triang Castle is okay for a model dating from the 1950s, although its biggest issue is the Fowler-style straight-sided firebox instead of the correctly waisted and tapered Belpaire. This was because the width of the motor with pole pieces on the side precluded a better shape. I have recently "upgraded" some Castles to improve the look, although the firebox could not be altered.

The copper chimney top was a major issue for me as it looked too small in height, so I removed it, reduced the wider diameter of the chimney stem to the smaller one where the cap fitted for a depth of around 2mm and turned a proper copper cap on the lathe to fit the new step. That alone, I think, gives a better look. Next in line were the cylinders. The moulded covers are a little large, to compensate for the Triang pressed-steel slidebars, so I removed a small amount from the rear ends and also the base, giving a neater look with better proportions.

I next wanted to improve the slidebars and crossheads, so I had some parts etched, still fitting the Triang mounting. The slidebars are in two pieces to give a more correct appearance, with a wider part for the crosshead. The crossheads are the same as those I used for the WR 2-8-0T and made up of five parts, plus wire for the piston rod. These crossheads allow the connecting rod to fit correctly inside them. To complete the chassis, Romford wheels were fitted to the bogie and tender.

The moulded boiler bands were removed with a small homemade chisel and the bodies painted with Precision Paints BR green. The lining and tender crest are Fox 00 transfers. Nameplates are etched brass from Kings Cross, still available to this day. They need cutting and filing to shape. The shedplate, smokebox and cabside numbers, along with the red dot, are 3D transfers from Railtec. These are very good and made to your choice of number. The cabside plates can be lined or not and all plates can have black or red backgrounds – and Scottish smokebox plates can be supplied in blue. The turnaround for orders is very quick. The handrail and smokebox detail is painted on using a permanent marker and the loco and tender bodies spray varnished. The finished result is a better-looking Castle – to me anyway.



QUICK TIPS

TAPPING SQ WHEELS STRAIGHT

When screwing the 14BA crankpins into SQ wheels you must get them in perpendicular to the wheel face or the rods will bind. I have usually relied being careful, but inevitably end up having to tweak the crankpin with pliers to get it straight.

Ideally I would use a tap and cut the thread before inserting the screw – but have you seen the price of a 14BA tap? And that's assuming it has lasted long enough to do this job. In the absence of a proper tap, I have used a 14BA screw with the head removed to tap the holes for my latest project. I decided to use my bench drill to ensure the screw went in square so rigged up the following arrangement.



This shows a screw with its head removed, held in the chuck and positioned on the crankpin hole. The idea is to turn the chuck manually and screw the thread into the wheel. The problem is to hold the wheel, turn the chuck and apply downward pressure all at the same time. I overcame the final issue by hanging a lump of lead from a cup hook, hung on a clamp attached to the drill arm. This kept enough downward pressure on the screw for it to enter the hole whilst I turned the chuck and made the thread.



The wheelset was then assembled as usual, with nice square crankpins.

Phil Smith

Like so many of us I now wear glasses and have noticed that once dried out, the wipes that I buy from Lidl hold their shape. Nothing ventured, nothing gained, so I painted a dried-up one with some acrylic paint, which made it pliable again, and shaped it into a tent (modern military 12 x 12 style) and left it to dry again. The texture reminds me of tarpaulin or canvas, so I see potential for tents and wagon sheets among other things.

Paul Furner

WHAT'S NEW

TITFIELD THUNDERBOLT https://www.shapeways.com/shops/new man-miniatures

I recently ordered and received a 3Dprinted model of the *Titfield Thunderbolt* produced by Newman Miniatures and available from Shapeways. The package arrived at my home in France after only five days, much to my surprise.





The quality of the 3D printing was excellent, with very few signs of layering. The material is translucent, with well-defined detail which stands out even better after a light coat of primer, as shown above. The bodies have internal supports for the axles, but you will need to supply wheels and con rods yourself. The only problem was the fragility of the footplate steps, which snapped off when I examined the model. Replacements could easily made up from wire and Araldited in place. I can't imagine motorising it, but it will make an attractive diorama.

Howard Love

BR CLASS 37 Lincoln Locos: £175

This Class 37 performs like a dream. In my case it was just the rolling chassis to go under a body shell I had bought a while back, so the body, while still excellent, didn't have the latest refinements. Lenny Seeney's loco bodies have always been good but the level and refinement in the details we are seeing now is amazing.

The first thing that I noticed (and judging by a few comments online so did other purchasers) is the effect the two flywheels have on performance. Even with a rake of a dozen Kitmaster and scratchbuilt coaches behind it, when the power was switched off from full (about a scale ton) the train continued to roll on for twenty inches or more – not a major issue on my currently continuous-run layout, but once the

terminus is added it will make running into that an interesting exercise in control. Don't think, though, that this loco is just about smooth high-speed running as it is controllable down to a crawl and the flywheels still have an effect. As is standard on Lenny's chassis, the motor is centrally mounted with drive shafts to the bogies. These are strictly speaking A1A as only the outer axles are powered, the central axle being a 3D print. Power is picked up from all eight driven wheels, so with that and the flywheels you will need pretty big dead spots before this beast comes to an unexpected stop. Like the Class 24 I reviewed previously this loco is blessed with a fair chunk of weight, which improves adhesion and pickup. The big difference is that the extra body lenath enables the fittina of the aforementioned flywheels which makes such a difference to how it performs compared with, say, a Triang Class 31.

Fitting couplings to the mount at the front of the bogie required a bit of fettling, but wasn't particularly difficult. I have finished mine in BR green without yellow panels, as first supplied to East Anglia in 1962, and adorned it with the superb transfers from Railtec.

This is yet another excellent freerunning loco at a very reasonable price for a limited run production.

Paul Furner

BLASTPIPE

I recently acquired Geoff Helliwell's N-RTR Class 03 and D2511 diesel shunters. The 3Dprinted bodies are excellent and Geoff's chassis ran a treat straight out of the box.

As I use B&B couplings, my first task was how to fit them. After some pondering, I decided to cut in a "letter box" slot in the front and rear plates on both locos, to slide the tag of the coupling into. The tag of the made-up coupling was then inserted into the slot, and by trial and error the coupling



tag was shortened nearly to the fixing slot, then bent upwards to a right angle, with a little Superglue to hold it in place. With the coupling pushed home, the buffing plate sat about 2mm in front of the buffers, which is how I usually set my couplings.

Both locos are rather light as supplied, so I have added some lead weights. On the Class 03, I put some inside the front bonnet, behind the radiator. At the rear, a small piece of lead was stuck to the inside rear of the cab, just below door window height so not easily seen when painted. I also removed the aluminium fitting spacer block at the rear and replaced it with a longer lead block, which enabled me to attach the piece of lead that I cut for the cab floor to it.

For D2511, I added some lead inside the front and rear bonnets. I also made a plastic cab floor located on the chassis and on it made a cover for the gears – as close a fit to the gears as I could, so as not to fill the cab. Painted a mid grey, and with a driver and his mate in the cab the cover is less noticeable than the open gears were. This assembly is a friction fit, so will be easily removable, should I need to get to the gears. The extra weight certainly gives these locos more adhesion and better electrical contact when shunting wagons through a series of points on my layout. The next job will be to fit the handrails, then paint and letter.

> John Williams Eynesbury, St Neots

I think I'm correct in stating that only four entries in the 2022 AGM competitions – excluding road vehicles – were of prototypes younger than me. It is a little worrying that the majority of 3mm modellers are not making models of the current railway scene. Is this one reason that we have an ageing membership profile? Both N gauge and OO can represent the modern scene, but how much better could 3mm scale do it? I enjoy making models, but there are obstacles in the way of modelling the current scene, the main one being lack of information and a secondary one that our modelling techniques are not really suitable for most of the new trains. We take delight in the lumps and bumps of trains of the past rather than the sleek and uncluttered profiles adopted today.

I throw down the gauntlet: how about a competition for railed vehicles currently in everyday use on the national network? Preserved stock would be ineligible.

Richard Brice Belper, Derbyshire

ICI HOPPERS

To finish, the bogies were sprayed matt black and bodies and chassis mid grey. The lettering was picked out by hand in white before several light coats of mixed browns were misted on to create the final effect. The models wouldn't win any prizes but I'm really pleased with the end result. From normal viewing distance they look as they're meant to. They run really well with a Society BR D504 brake van on the end. I now hope the Second-hand wants list can deliver me the Society LMS 8F kit I need to complete the train.

For more details please see my website at: https://sites.google.com/view/exetercentr alin3mmscale

3D BEGINNING From page 15

These sections were saved as two separate SLDPRT files. I created a SLDASM assembly of the parts to see if they fitted together and that seemed to work. The two files were converted from SLDPRT to STL files in SolidWorks.

Now comes the slicing bit. I used Cura as my slicing programme as, once again, it was free. This created the format needed for the printer. The easy bit follows. Switch the printer on and wait for it to do the printing.



Take the printed parts out, soak away the support structure and – the parts don't go together....

So it's back to the beginning to tweak the original SolidWorks dimensions to try the whole thing again. Just keep trying until you end up with something you're happy with. I haven't quite managed that last bit yet but I'm still trying. And that's the world of 3D printing.

TAIL LAMP

A PRINTING ERROR

SH Print Services apologise for the error which saw page 2 printed twice in *Mixed Traffic 227* and page 3 omitted, so that only half of Graham Shirley's "Loco Chassis Considerations" appeared. A replacement page is included in this posting and it should be easy enough to glue it carefully in place with the thinnest bead of white glue applied to the margins of the existing page.

PETER GENTLE'S CERNEY ROAD

Cerney Road was a part of the late Peter Gentle's celebrated Shed Railway. Martin Gentle intended to restore it, but has now presented it to the Gloucester Group. Though much remains to be done, Richard Pope was able to display the layout at the AGM as a tribute to Peter's many skills. His pre-eminence as a modeller of buildings is shown in this photo by Nicholas T Smith. Colour shots will follow in the next issue.



BRIGHTON TERRIER 150 June 2022 marked the 150th anniversary of the introduction of William Stroudley's celebrated LBSCR Terrier 0-6-0T. There

were commemorative events on heritage lines and the Society proved itself ahead of the game when Paul Hopkins' A1X 32640 became one of the joint winners of The Tony Birch Memorial Award at the Annual Meeting in Swindon. Wim Harthoorn's club, Horsham MRC, held a Terrier night with models in most scales on show and he wonders if Society members with 3mm Terriers might like to send photos or articles for a Terrier 150 feature in the October *Mixed Traffic.*

ANNIVERSARIES IN 2023

The railway Grouping, creating the GWR, SR, LMS and LNER, became effective on 1 January 1923, and a quarter of a century later, on 1 January 1948, the railways came into public ownership with the creation of British Railways. It would be good to mark these major anniversaries with a photo feature in January. Can you help?

IN THE OCTOBER ISSUE

- Barry Witteridge's Edington Junction
- Developing a corner at Exeter Central

THE COMMITTEE

Chairman: Martin Gentle

Secretary: Phil Smith

Treasurer: David Garner

Membership Secretary: Mike Corp

Magazine Editor: John Sutton

Publicity Officer: Martin Olley

New Products Officer: Graham Shirley

Trading Officer: Peter Leach

Second-hand Sales Officer: John Carter

THREE MILLIMETRE SOCIETY PRODUCTS

Please note these new postal and e-mail addresses:

Society Products are available by post from

Richard Brice, or by e-mail:

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

Peter Bailey is taking over the casting of Society white-metal kits and components and we hope that out-of-stock items will be reintroduced as soon as possible. Members will be kept up to date through the Society's electronic *Three Mill Bulletin*.

We also intend to reintroduce more of the Brynkits range in due course.

WORSLEY WORKS 3mm

Do you fancy coming to the Worsley Works Modellers' Weekend 2022?

> Whately Hall Hotel 17-19 Horse Fair Banbury Cross Banbury OX16 oAN

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.

LINCOLN LOCOS

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





AT THE AGM

Nick Salzman's Great Western Broad-gauge 2-4-0 Hackworth and Barry Witteridge's Somerset & Dorset 7F 2-8-0 53804 in BR livery. John Sutton



Matt Dower's WR 47XX 2-8-0 4708 is an inventive conversion of the Triang Castle and works on his Dainton Bank layout. This Corridor Composite was one of the three LNWR coaches in LMS livery which won Mike Corp The Cuckmere Trophy. Nicholas T Smith





AT THE AGM

Photos by John Sutton

Bob Brown's WR 94XX 0-6-0PT, Dennis Bunge's Lincoln Locos SR Bulleid Diesel 10201 and Tim Woods' Tetbury Shed, from the laser-cut kit produced in memory of Peter Gentle.



