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BACHMANN Job Opportunities at Bachmann Europe

Club Administrator / Exhibitions Officer

We are currently looking to expand the visibility and reach of our Bachmann Collectors Club, and also our digital controller range software. Therefore, if you are a computer literate, personable, energetic and enthusiastic person who enjoys working at weekends, then please read on.

The Bachmann Collectors Club continues to increase its great offering to both its highly valued current members, and potential new members too. We are therefore looking to maintain our attendance at regional weekend shows (largely, but not exclusively, established Model Railway Exhibitions) and spread the word still further. The successful applicant will organise and manage our diary of attendance for these public facing shows, arrange any required overnight accommodation, prepare items for display, load the required items into our own vehicle, and promote the benefits of Club membership to attendees.

While representing the Collectors Club you will be able to discuss the many benefits of membership and recruit and take payment for any of our Club products from our new exhibition stand. Once conversant with the Collectors Club events, you will also be a key member of our larger national exhibitions team.



The Collectors Club stand will also feature dedicated space to support our digital rail controller software. Ideally you will be familiar with Digital Command systems for model railways, as you will provide a live demonstration of the system and answer technical questions as required.

When not attending events or exhibitions, you will be based in our Barwell office as part of the Collectors Club team, handling and processing any memberships, enquiries or orders as required.

A full driving license is required, and some experience of handling larger vans is desirable. An interest in railway modelling or an association with the railway industry would be an advantage. We offer a competitive salary plus company benefits to the right applicant. This is a full-time role based at our head office in Barwell, Leicestershire.

Please apply with a covering letter and full CV by the 30th June 2023 to:

Job Application - Club Administrator/Exhibitions Officer, Bachmann Europe Plc, Moat Way, Barwell, Leicestershire LE9 8EY or via email to: christina.jones@bachmann-europe.co.uk

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WORLD OF RAILWAYS TV

FEATURE

Interview: TMC on its new NER/LNER G5 locomotives

Howard Smith speaks with Chris and Alex Yates of The Model Centre to learn more about its exclusive new 0-4-4T locomotives arriving from mid-June, 2023.

WATCH THE VIDEO HERE

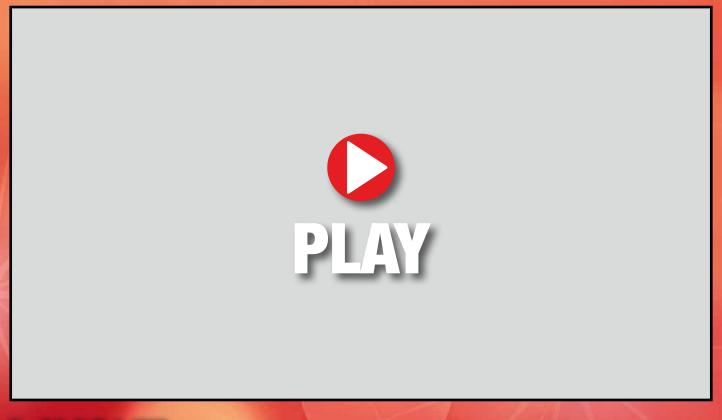
(You must have a wifi connection to stream video content)



FEATURE

Postcards from the Hythe Pier railway

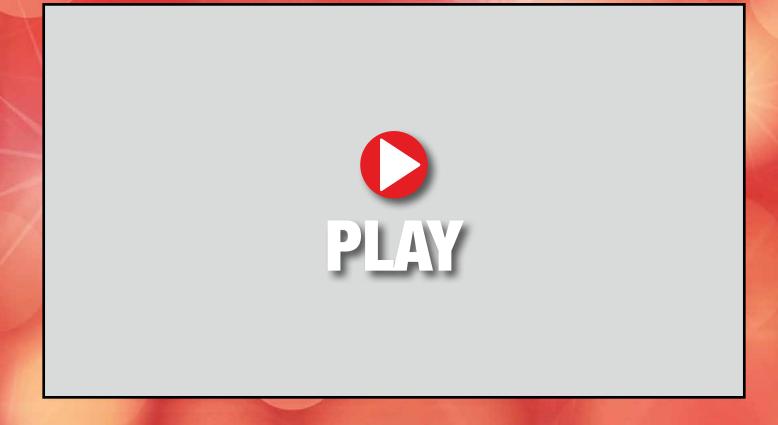
On a sunny day, Phil Parker takes a trip on one of the most unusual railways in the UK.



LAYOUT

A visit to Stanicliffe

The talented and well-regarded Roger Sunderland shows us around his new home layout, 'Stanicliffe', based on West Yorkshire.





LAYOUTS

p20 Stanicliffe (OO)

p34 Chandwell (N)

p74 Merthyr Riverside (EM)

p88 Palin's Yard (O)





p32 Inbox

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HOW TO...



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p53 Life with a 3D printer

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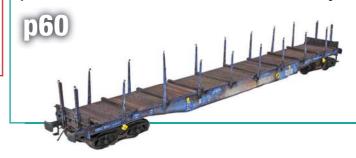
p56 Adding lights to coaches

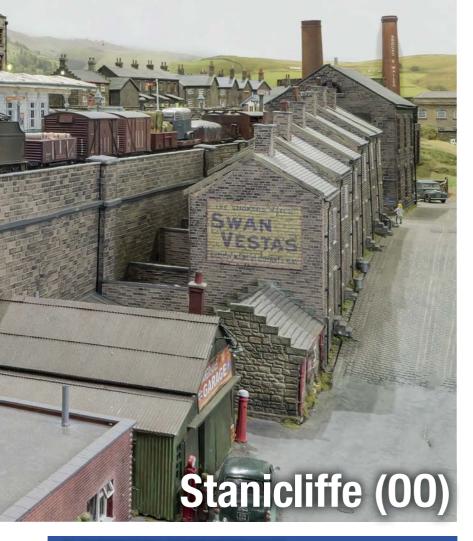
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p63 Managing dust: top tips

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LATEST REVIEWS



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p106 Heljan LNER Class O2 preview

p108 Hornby 12T vent van

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p110 TMC G5 Class

p112 Hornby HM7000

p114 Haskell narrow gauge wagons



BRITISH RAILWAY MODELLING

Welcome

to July

It's all change at Hornby this month, as Simon Kohler broke the internet and announced he was leaving the company for pastures new after over 40 years of service.

Affectionately known as 'Mr Hornby', many people will know Simon from his tireless work behind the Hornby stand at exhibitions and, more recently, from his appearance in the *Hornby: A Model World* TV series, where he coined his catchphrase "Detail, detail, detail".

A great personality for the hobby and an ongoing supporter of BRM, we wish him the best of luck in his new venture. You can read more about his departure and his plans for the future in our news pages from page 98.

Change for many of us can be quite daunting, but there is a lot of excitement to be had in taking up a new challenge. Never wanting to stand still, we have been busy over the past few months refreshing the pages of BRM to keep the magazine up-to-date and relevant for today's readers. We hope you like the changes so far, and if you have any feedback on how we can improve the magazine further, please let us know at brm@warnersgroup.co.uk.

The July issue features some fantastic layouts, with our cover layout, 'Chandwell', showcasing some incredible buildings and scenic detail – I can hear people already questioning if it really is N gauge! Another showstopper this month is 'Stanicliffe', Roger Sunderland's sequel to the iconic 'Bournemouth West', which certainly doesn't fall short of expectations.

Proving that layouts don't always need to come with a blue summer sky, Rob Kinsey's atmospheric 'Merthyr Riverside' is a work of art and will inspire many looking to capture the Welsh lines on the GWR, and our final layout, Peter Lloyd's excellent 'Palin's Yard', is based around the Cadbury's factory at Bournville – we can almost smell the chocolate!

Enjoy the issue!

The BRM team

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31-932DC	BR Compound	£127.75
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31-461A	C Class SR Black	£106.20
31-462A	C Class BR Early	£106.20

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31-433 BF	R Ivatt 2mt tank	
31-442 LN	//S Ivatt 2mt tank	£140.20
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	BR 3mt green	
	R 45xx green	
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NR-P993EW BP Grey no. BP067177 wthd 1	
NR-P993FW BP Grey no. BP067184 wthd 1	
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NR-P994B BP Green no. BP067162	
NR-P994C BP Green no. BP067368	
NR-P994DW BP Green no. BP067765	
NR-P994EW BP Green no. BP067783	
NR-P994FW BP Green no. BP067574	
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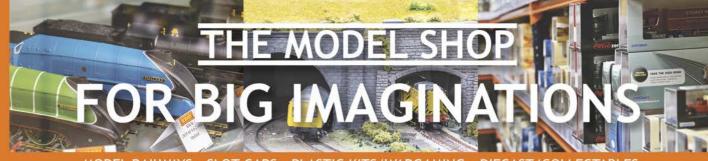
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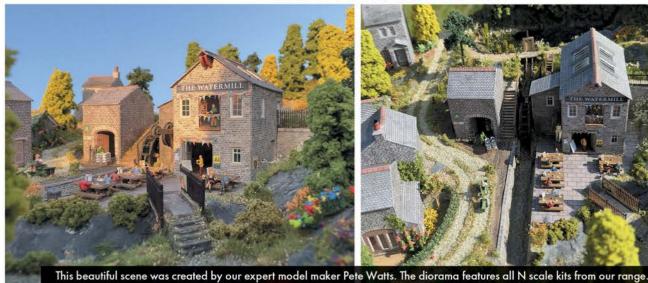


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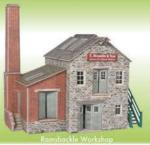


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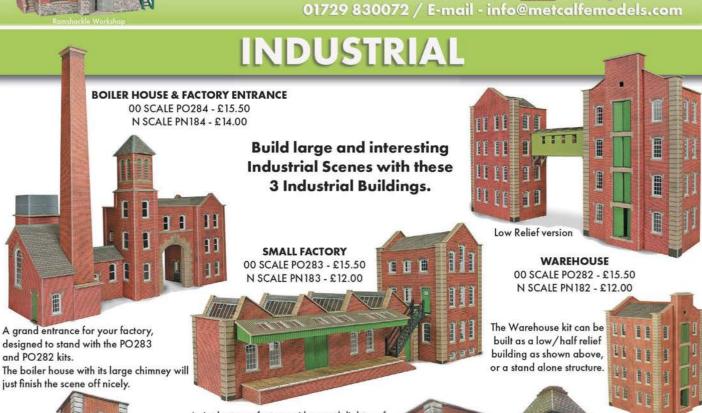


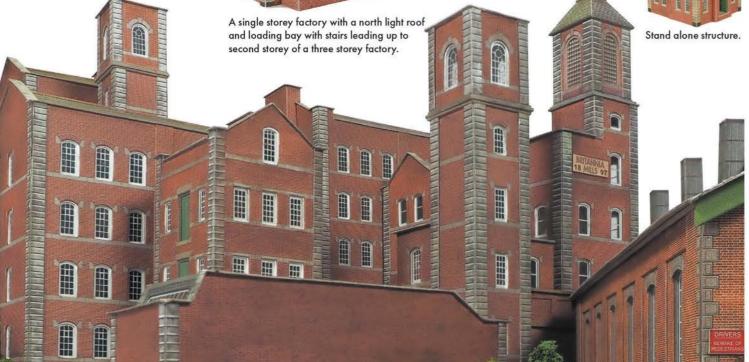
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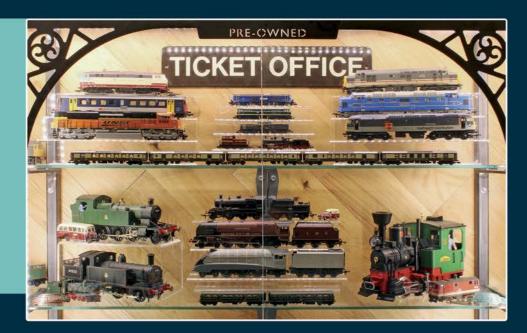


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00 Gauge Steam Locos



Due: Q2 2024 Price: from £139.99 Digital: 18-pin



Hawthorn Leslie 0-4-0ST Due: Q3 2023 Price: from £107.41 Digital: 18-pin

Class 43xx Mogul 2-6-0 Due: Q3 2023 Price: from £154.18 Digital: 18-pin





LNER Class B17/5 4-6-0 Due: Q4 2024/ Q1 202 Price: SOLD OUT! Digital: 21-pin

LMS Turbomotive 4-6-2 Due: July 2023 Price: from £239.84 Digital: 21-pin



olitan E Class 0-4-4T Metropolitan E Clas Due: Early 2024 Price: from £153 Digital: 18-pin

LMR 'Lion' 0-4-2 Due: Q2 2023 Price: from £152.96 Digital: 18-pin

LBSCR F1 0-6-0T Due: TBC 2023 Price: from £140.21 Digital: 18-pin

Class 15xx 0-6-0PT Due: Q2 2023 Price: from £127.50 Digital: 18-pin

HR 'Jones Goods' 4-6-0 Due: TBC 2023 Price: from £186.96 Digital: 21-pin

00 Gauge Diesel & Electrics



Due: Q2 2023 Price: from £169.99 Digital: 21-pin

Class 50 Due: Q4 2023 Price: from £169.99 Digital: 21-pin

Class 66 Due: Q1 2024 Price: from £169.99 Digital: 21-pin



BR NBL Prototype 10800 Due: May 2023 Price: from £216.71 Digital: 21-pin

Class 02 Shunt Due: Q4 2023 Price: from £143.65 Digital: 18-pin Class 26/1

Due: Q4 2023 Price: from £177.65 Digital: 21-pin Class 47



Due: Q3 2023 Price: from £212.46 Digital: 21-pin Class 57 Due: Oct 2023 Price: from £160.65 Digital: 21-pin





Ruston 88DS Shunter Due: Jun 2023 Price: £102.59 Digital: 6-pin



Class 04 Shunter Due: TBC

00 Gauge Multiple Units





W&M 4-wheel Railbu Due: Q3 2023 Price: from £169.15 Digital: 21-pin

GWR AEC Parcels Railcar Due: Sep 2023 Price: from £198.90 Digital: 21-pin

Class 104 Due: TBC 2023 Price: from £330.65 Digital: 21-pin



Class 755 FLIRT BIMU

Class 423 4-VFP FMU

00 Gauge Coaches & Wagons



Digital: N/A BR Mk2B & Mk2Cs Due: Q2 2023 & Q1 2024



35 1725

511 SE SE SE 1

NER 20t Hopp Due: Q1 2024 Price: £84.95 (3pk) Digital: N/A



FNA-D Nuclear Flasks Due: Q3 2023 Price: £74.95 (2pk) Digital: N/A



14 ton Air Ministry Tanks



Price: from £46.75 Digital: 6-pin (Taillamps)

GWR Toplight City Coache Due: Q2 2023 Price: £55.08 each Digital: 6-pin

GWR Church Due: Q1 2024 Price: from £68 Digital: 21-pin



TCV Car Transporters Due: Q2 2023 Price: £194.65 (3pk) Digital: N/A



TA Tank Wagons Due: Q3 2023 Price: £31.49 each Digital: N/A

YMO/ YMA Salmon Flats Price: £34.64 each Digital: N/A



GWR B-Set Coaches

Price: £144.45 (2pk) Digital: N/A LMS 5-Plank War



Due: Q4 2023/Q1 2024 Price: £28.01 each Digital: N/A

- GWR 5-plank Wagons, SR 8-Plank Wagons & RCH 1907 5 & 7-plank Wagons nk Wagons GWR Toad Brake Van



el Brake van also due in 2023



TFA 100t Tanks





Due: Q3 2023 Price: from £128.52 Digital: 6-pin

SR Light Pacific 4-6-2 Due: Q2 2023 Price: from £189.98 Digital: 18-pin

N Gauge Coaches & Wagons



Mk3 Packs & DVTs Due: Q2 2023 Price: Prices vary Digital: 18-pin





LNER Dynamometer Car Due: TBC 2023 Price: £84.95 Digital: N/A











O Gauge Steam Locos



Due: Q2 2023 Price: from £213.78 Digital: 21-pin



Class J94 Austerity 0-6-0ST Due: Q2 2023 Price: from £229.50 Digital: 21-pin



BR Standard 3MT 2-6-2T Due: 02 2023 Price: from £527.85 Digital: 21-pin



GWR Class 55xx 2-6-2T Due: TBC Price: from £435.48 Digital: 21-pin

O Gauge Diesel & Electrics



Due: 03/ 04 2023 Price: from £213.78 Digital: 21-pin



Class 66 Due: TRC Price: from £308.30 Digital: 21-pin

GREED



Class 02 Shunter Due: Q3 2023 Price: from £330.65 Digital: 21-pin Class 37/0 Due: Q4 2023 Price: from £568.65 Digital: ESU XL



Class 45 Peak Due: Q1 2024 Price: from £568.65 Digital: ESU XL





Class 73 Electrodie Due: Q3 2023 Price: from £662.15 Digital: ESU L

O Gauge Multiple Units



Due: Q2 2023 Price: from £594.15 Digital: ESU L

O Gauge Coaches & Wagons

dapol



TTA Tank Wagons Due: Q2 2023 Price: £78.03 each Digital: N/A

12 ton Goods Vans Due: Q2 2023 Price: £47.18 each Digital: N/A

ding LMS, GWR & SR 12t Goods Vans as well logo & Fruit A Va



GWR Toad Brake Van Price: £86.29 Digital: N/A

HIA Aggregate Hoppers Due: TBC 2023 Price: £68 Digital: N/A

LMS Inspection Saloon



Due: Q4 2023 Price: TBC Digital: 21-pin BR Mk2/ Mk2A Coach



Price: from £254.15 Digital: N/A Due: Q1 2024 Price: from £211.65 Digital: N/A

35t Class R Tanks

N Gauge Steam Locos



LMS Class 2MT 2-6-2T Due: Q3 2023 Price: from £93.50 Digital: PCB Swap required



LNER Class B17 4-6-0



N Gauge Diesel & Electrics



Due: Q3 2023 Price: from £133.11 'Digital: 18-pin Class 43 HST (Updated)



Class 59 Due: Q2/Q3 2023 Price: from £146.88 Digital: 18-pin Class 66 (New Tool) Due: Q2 2024 Price: from £146.88 Digital: 18-pin



Due: Q2/ Q3 2023 Price: from £110.16 Digital: 18-pin



N Gauge Multiple Units



Due: Q2 20 Price: from £119.30 Digital: 18-pin



Due: Q2 202 rice: from £146.88 Digital: 18-pin Class 221 Sup

Price: £213.78 Digital: 6-pin







OAA Open Wagons Due: TBC 2023 Price: £59.45 each Digital: N/A



Due: TBC 2023 Price: £59.46 (3pk)

SECR 5 & 7 Plank Wagon

Revolution

Price: £32.95 each Digital: N/A

Class 58 Due: Jun 2023

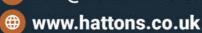


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OO Gauge (1:76 Scale)



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R3986 Class 9F 2-10-0 92167 in BR Black late crest (Hor). . £228 R3987 Class 9F 2-10-0 92194 in BR Black Late Crest (Hor) . . £228



R30206 Class A1 4-6-2 1472 in LNER lined apple green (1923 condition) - Dublo Diecast Ltd Ed - includes box, medallion & crew figures (Hor) £326.69



R30210 Class A3 4-6-2 103 'Flying Scotsman' in LNER lined apple green (1946 condition) - Dublo Diecast Ltd Ed - includes presentation box, medallion & crew



R3870 Class R2 kett 0-6-0ST 1203 "The Earl" in NCB



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'Tiger' Train Pack three granite wagons (Hor).... £20





R3980 Rebuilt Class W1 Hush-Hush 4-6-4 60700 in BR



R3995 Standard Class 6MT 'Clan' 4-6-2 72004 "Clan Diesel locos



R30120 Cla





lue orange cantrail and

















-2 72004 "Clan m (Hor) £196 National Power (Dap) (RRP £173.20) . .BARGÁIN. £129.95



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R4879A Collett 57" Bow ended non-corridor composite (Righthand) W6242W in BR crimson (Hor) (RRP £59.49)BARGAIN £2



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2F-050-001 JHA 102 tonne aggregate hopper wagon (o Foster Yeoman original - 19303 (Dap) (RRP £43.15)BAF

O Gauge (1:43 Scale)



7S-026-008 Class 3F 'Jinty' 0-6-0T 19 in UTA (Ulster Transport Authority) lined black (Dap)......£213.78 Coaches



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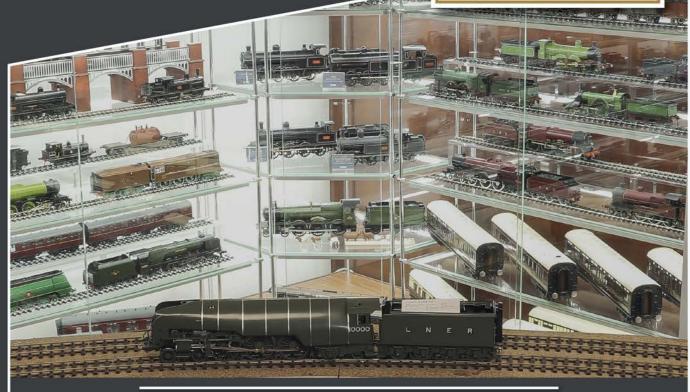
R7322 HM7000 21-pin TXS Bluetooth and DCC sound decoder (Hor). £62.99
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STANICLIFFE

Loving the railways and mill towns of West Yorkshire, a miniature incarnation seemed the next logical step for Roger Sunderland.





hen I was around six, I was taken by my dad to his textile factory in Stainland, just outside Halifax. We travelled by train from Southport, where we lived. During the day, I used to slip out and watch the trains go by on the line at the rear of the works, and so began my love of railways and, in particular, the railways of West Yorkshire, which has lasted all my life (I'm now 70).

Over the years, I've built several Yorkshire-based layouts, although I'm probably best known for 'Bournemouth West', previously featured in BRM and seen at exhibitions.

My latest layout, 'Stanicliffe', is inspired by my boyhood past and a number of superb layouts of the genre, not least of which was 'Dewsbury Midland'. The setting is fictitious, somewhere between Mirfield and Leeds, though there is a place called Staincliffe, which has given up its name (in slightly altered form) to the cause.

Three levels

The trackplan is a fairly simple 'roundy roundy' consisting of an island station with attached goods yard, a small viaduct and running into a fiddleyard off scene. I wanted to create an urban environment so typical of the area, while maintaining the idea of the railway being built through the landscape, not the landscape being built around the layout.

So, the layout is effectively on three levels. The base level is where the valley and stream run under the viaduct and also the majority of the buildings in the

town. The railway, including the station and goods yard, is on the intermediary level, and hills and background buildings form the third level. I think this works quite well, but it created some issues in terms of electrics, point motors and servos for signals underneath the trackbed, which was cut to fit the track layout. All woodwork for the boards is 12mm birch ply; the trackbed is 9mm birch ply.

The plain track on the layout is Peco Bullhead Code 75. The points are hand-built from copper-clad and bullhead rail, to suit the location and it is ballasted with a mix of Woodland Scenics 'N' gauge ballast. Point motors are the ever-reliable Tortoise, which, in some cases, are on their fourth layout. The signals on the layout are all scratch-built, again to suit their location, from MSE and Alan Gibson parts. They are illuminated using fibre optics and operated by miniature servos and the brilliant GF control systems servo control boards. Shunt signals are by DCC Concepts.

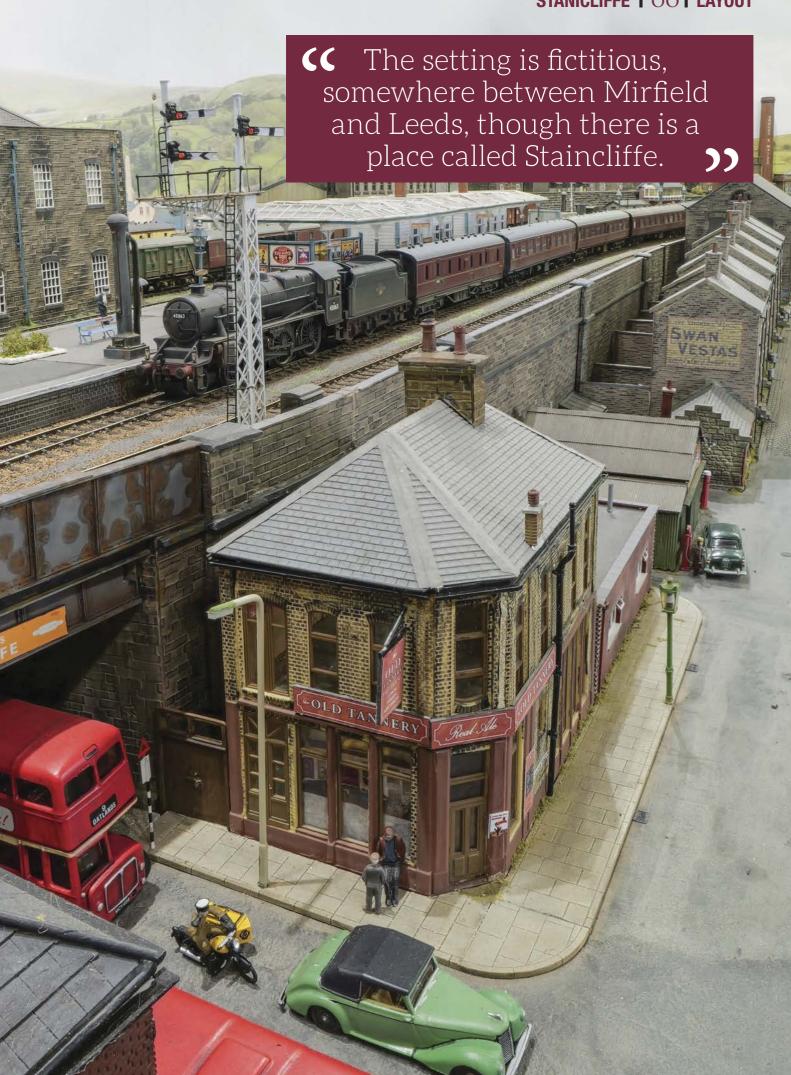
As an aside, signals have become a major interest of mine over the last few years, and my interest was piqued by the superb craftsmanship and help provided by Steve Hewitt of the Blackburn MRS, who has a thread on RMweb. Anybody seriously considering building their own signals should have a look.

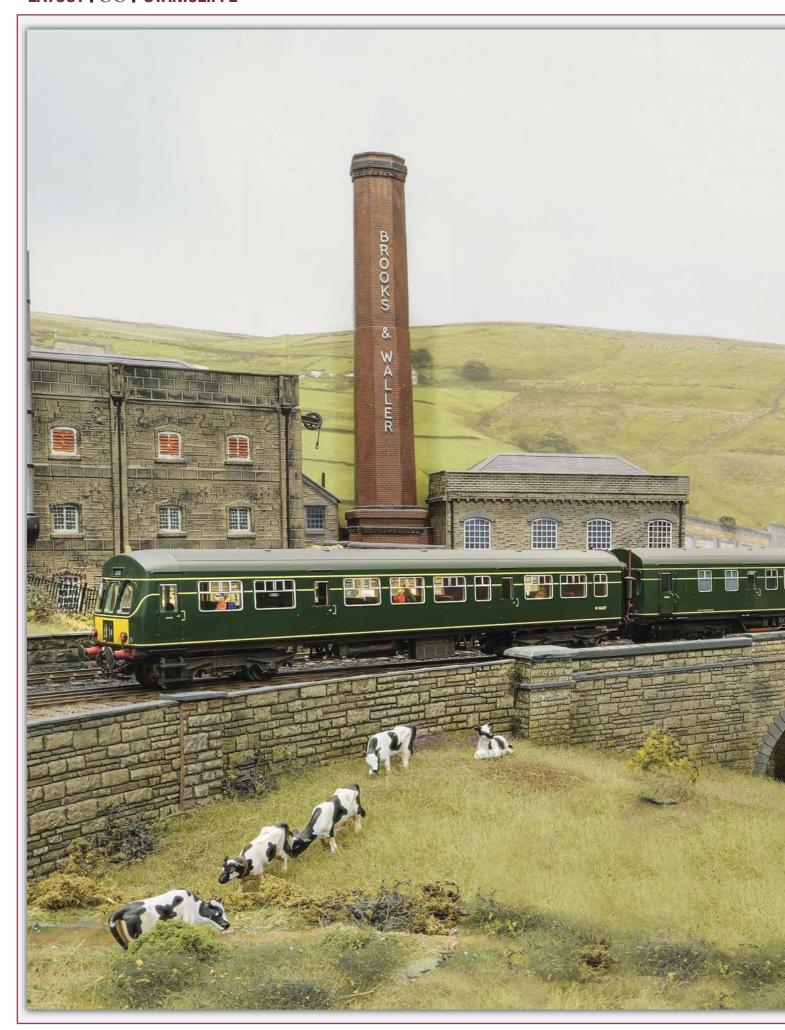
The layout is DCC, powered by a Digitrax system. I use one handset to control the trains and another one to operate the points, although these are powered separately to the track. Over the last few years, I've more or less standardised on Zimo decoders, sound or plain, with 'stay-alive' where necessary. In my humble opinion, simply the best there is.



LEFT: Play stops as a 'Britannia' heads a train of fish vans east over the viaduct. The stream in the valley bottom provides all the water needed for Brooks an Waller's mill

RIGHT: A view over the rooftops to the station, where a local passenger service is making a stop. The pub in the foreground has been converted from a Walthers American shop kit.





CREATING THE BACKSCENE

Mention should be made of the backscene. Unless you're a competent photographer, and can make your own, this is often one of the trickiest areas of building a model and can ruin it if not done well. I was lucky in respect of this layout that ID Backscenes made a set featuring a mill. They were very helpful and managed to conjure up a background for the town area



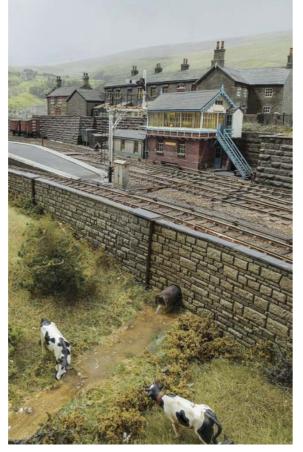


Setting the scene

The base levels were built up using insulation foam sheets, carved with a sharp knife. On top of this is a layer of plaster bandage to smooth things out, followed by a final layer of diluted Polyfilla, brushed on. Colour with your favourite paint. The grass on the layout was developed on the embankments on 'Bournemouth West'. I use Mini Natur static grass fibres, a mix of autumn and early spring, which I think gives a pleasing overall look, not too bright. Second and third coats were added using either a layering spray or matt varnish. Finally, the lot was dulled down a bit further by more matt varnish spray and a liberal sprinkling of Geoscenics earth, through a tea strainer.

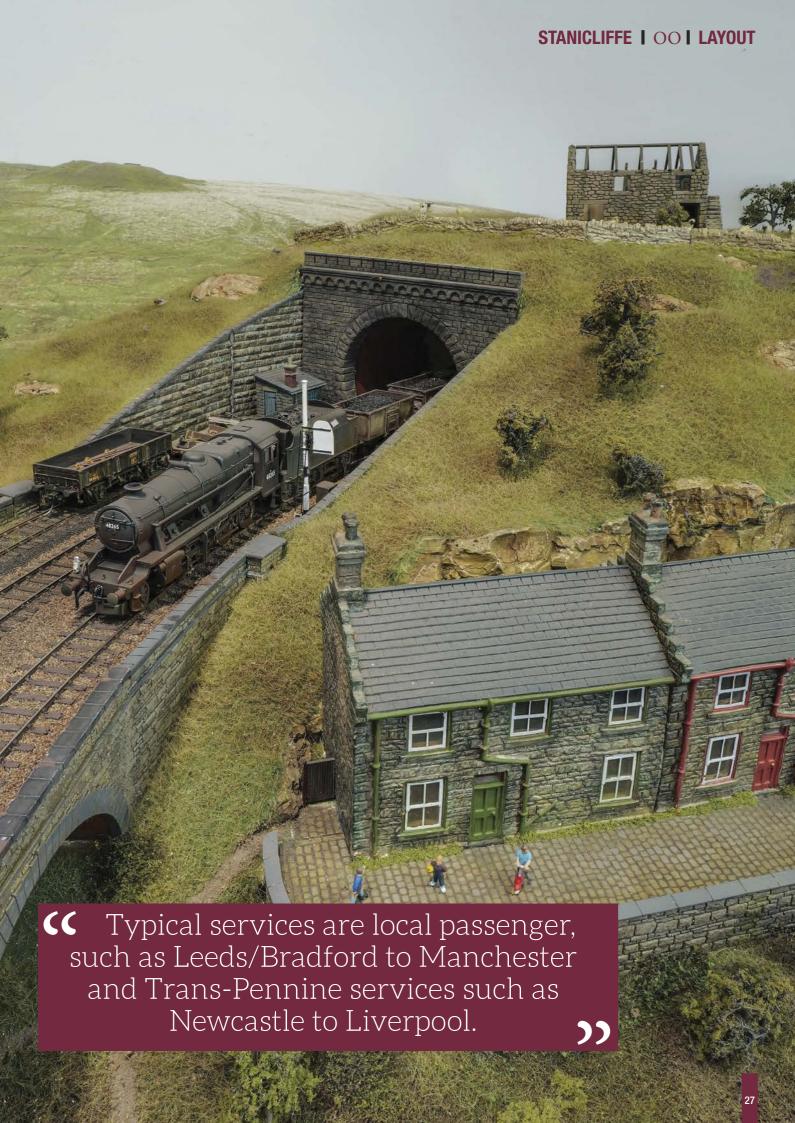
Trees are mostly made using wire armatures covered in Polyfilla/PVA/colour. Foliage is teased out hair or Woodland Scenics poly fibre sprayed with matt varnish sprinkled with Noch leaves. The streams are a painted bed covered in layers of Woodland Scenics water. Boulders and stones are from the same source.

Buildings are an eclectic mix of scratch-built and kits. Several of the shops and the church are from Kibri or Faller kits, which have all been 'Anglicised', repainted in the local stone colours and weathered. This can include adding roofs and chimneys. I've also utilised some of the large warehouse laser kits by JS Models. With careful painting and weathering, these can make lovely structures. The island station building utilises



ABOVE: An overall view of the station and goods yard. The BR (North Eastern) blue and white building colours with tangerine signage provide a splash of colour to the fairly drab stonework and environment of a West Yorkshire mill town.

RIGHT: An 8F hauling a Westbound freight emerges from the tunnel passing a signal fitted with a sighting board. The ruined barn overlooking the tunnel is from a much worked upon Skytrex resin model.

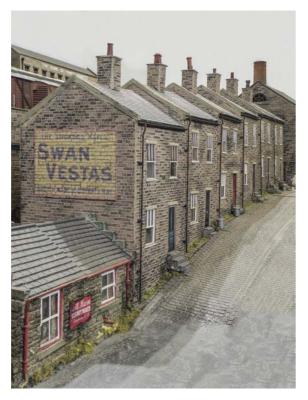


the 'Grand Junction' mouldings from Ratio, while the roof panels were all laser-cut, roofing bars being added individually. The rest of the buildings, including 'Waller and Brooks' mill, the goods shed, the rising terrace at the front of the layout, and all the retaining walls were scratch-built. I used a base of Foamex (the rigid type used by signwriters) with Plastikard overlays.

The placement of buildings on a layout is something that, I think, is often overlooked. The scene should blend together, where possible. To achieve this, I will place buildings on the layout and leave them for up to a week, coming back to them time and again, moving them slightly, until I'm satisfied.

Rolling Stock

In common with many others, I have far too much rolling stock, and far more than this layout needs, but it's hard to resist the fantastically detailed offerings that are available today. Having said that, as well as track building and signal building, one of the most enjoyable aspects of the hobby for me is building locomotives and rolling stock. So, alongside Bachmann and Hornby's finest is a large collection of stock I've built myself from the likes of DJH, PDK and Comet, to name a



LEFT: Railway
Terrace, below the
station. This picture
sums up everything I
was trying to achieve
and, for me, captures
the feel of a West
Yorkshire mill town.

BELOW: B1 61230 heads through Stanicliffe with a fitted freight. This locomotive has a Bachmann body, but both locomotive and tender chassis are Comet. It is one of four B1s in my locomotive fleet. In the foreground is Victoria Square. The shops behind the railway are also fully modelled.





few. Special mention must go to the excellent kits by McGeordie, who has a thread on RMweb. These are without a doubt at the top of the tree.

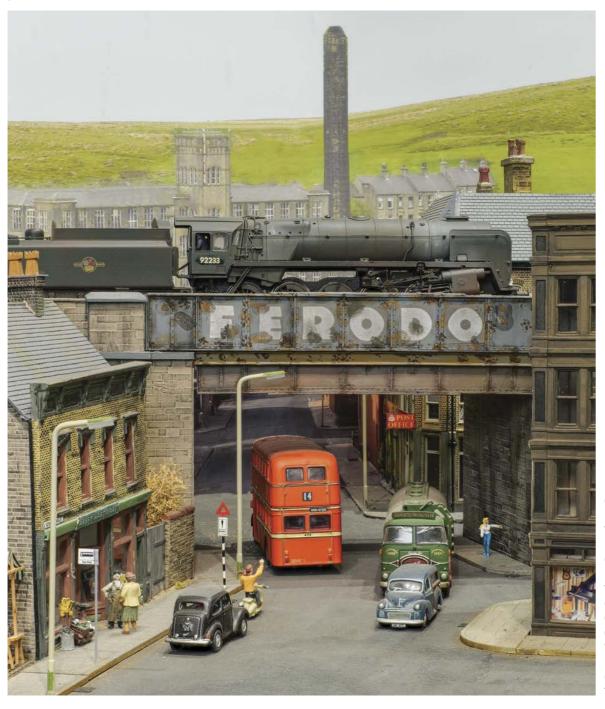
The fiddleyard is divided into five main tracks for each of the up and down lines, each capable of holding a nine-coach or 20-wagon train. In addition, there are five kick back sidings long enough for DMUs or short freights. Typical services are local passenger, such as Leeds/Bradford to Manchester and Trans-Pennine services such as Newcastle to Liverpool. Freights are varied but there are two long coal trains, one loaded heading west, one empty heading east, plus a selection of parcels trains. There are a total of 15-16 trains on the layout at any one time and these are rotated to ensure locomotives and stock all get used. A sequence can be operated using all the trains that lasts about an hour and a half, longer if shunting takes place in the goods yard or vans, are added or removed from trains.

Conclusion

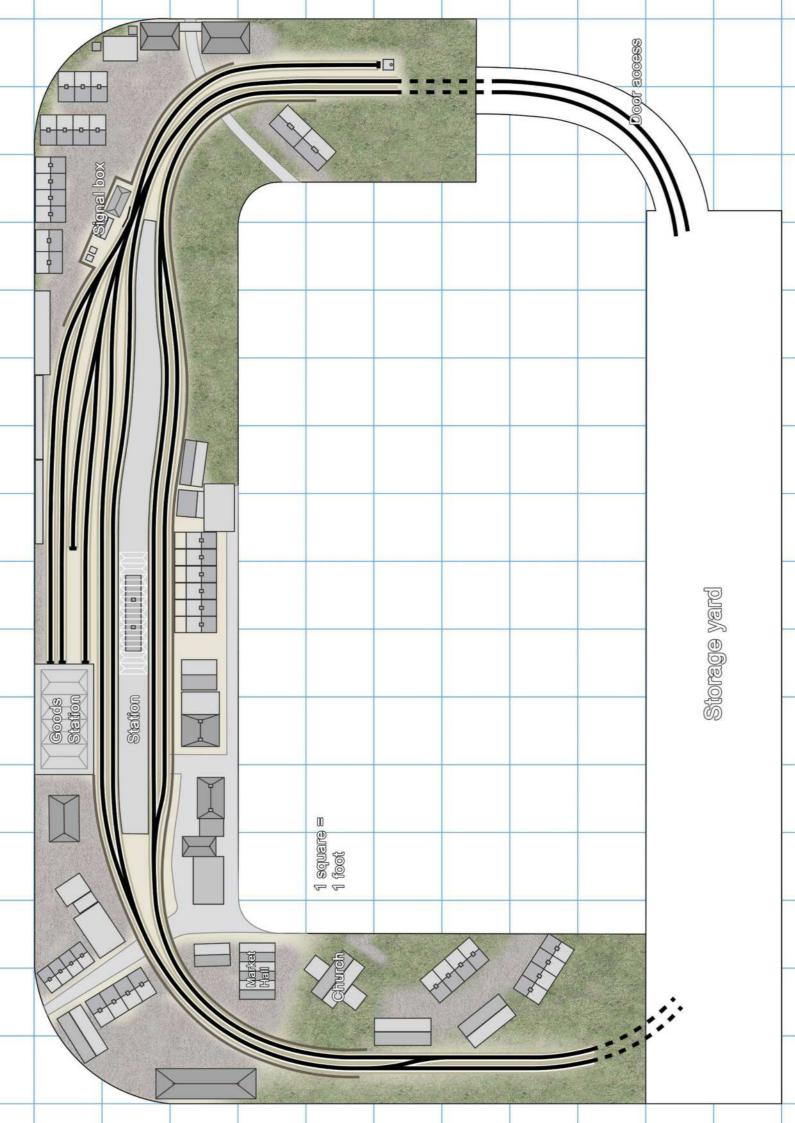
This layout has taken around four years to build. To an extent, it was a product of 'lockdown' as much of it was built during that period. It certainly was inspired by childhood memories, and influenced by some of the great exhibition layouts I've seen.

It's a home-based layout, not exhibition, and fulfils its purpose of giving me something to do in my spare time. It's also fair to say that many of the techniques were first used and developed on the 'Bournemouth West' layout.

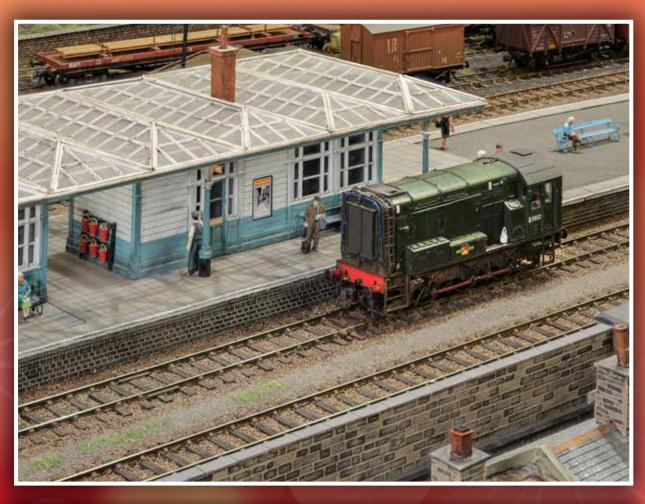
As for the future, our modelling group has embarked on a new model of 'Bournemouth Central', so that will keep me busy. This layout will keep going, but I can't ever relax and I am toying with ideas for a replacement at some stage. A place called Laisterdyke, in Bradford, is drawing me in – West Yorks again. Now, if I only had a bit more space...



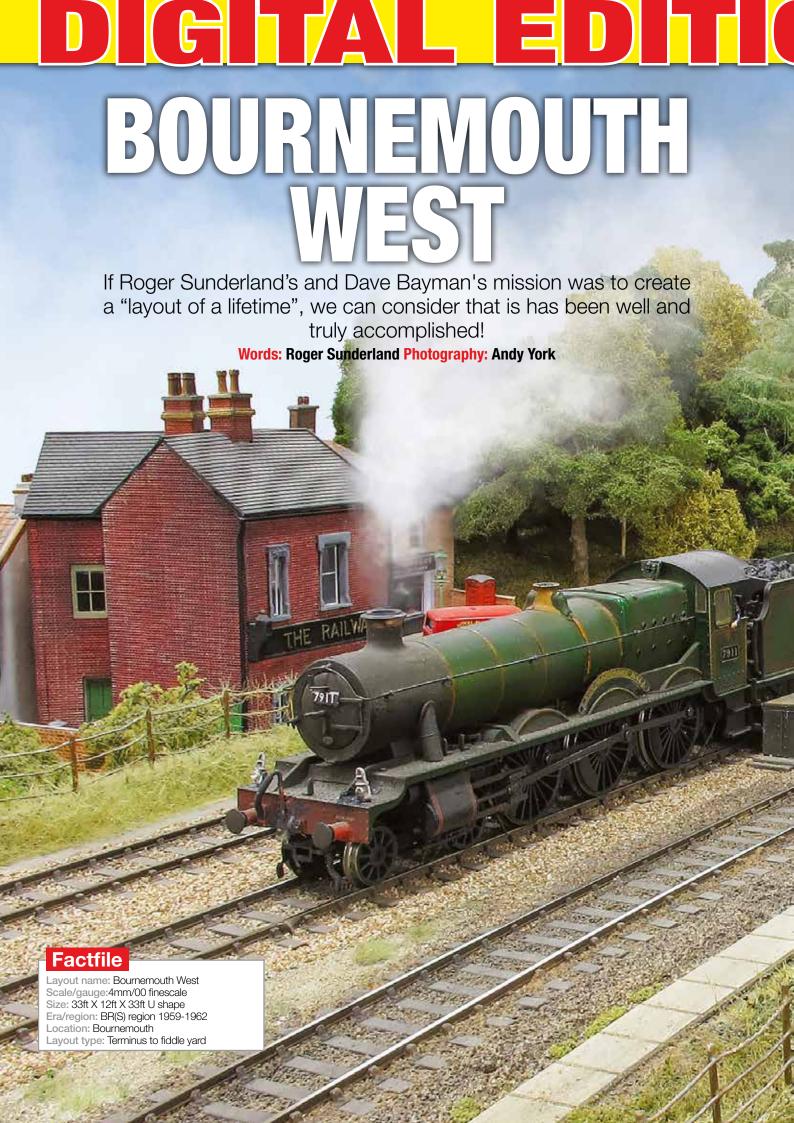
LEFT: A 9F on a train of oil tanks crosses Market Street. All the road vehicles, in fact everything on the layout, has been weathered to some degree to complement the overall look. The mill on the backscene was blown up for me by ID Backscenes to create a backdrop to the town.

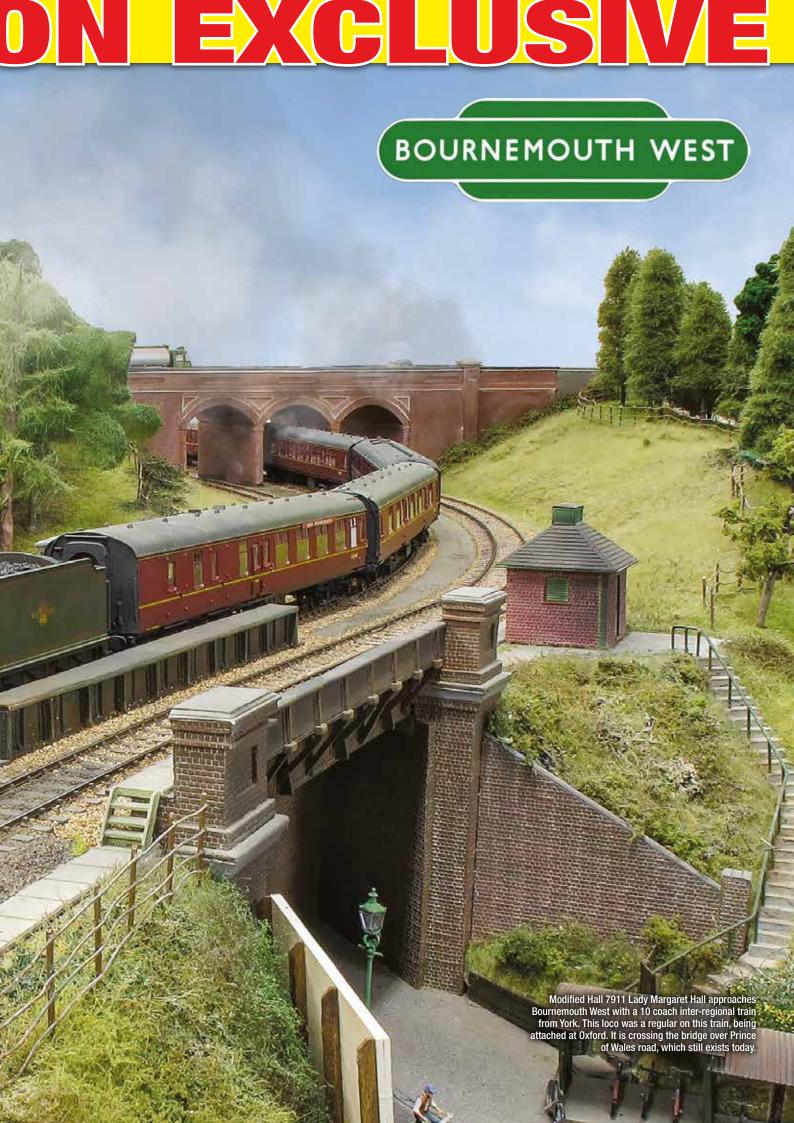


BRITISH RAILWAY MODELLING CLICK AND SWIPE IMAGES TO SEE MORE









round five years ago a group of people expressed an interest in building a scale model of the old S&D terminus, Bournemouth West, which was closed by BR in 1965. It was a very busy but compact terminus servicing trains from the old LSWR through Bournemouth Central from Waterloo, Southampton, Brighton etc, and the S&D line from Bath and Bristol. This line was also used by many cross-country services from the North and the Midlands. We therefore thought it had a lot of operating potential. Accommodation was secured in premises owned by Model Railway Solutions, in Bournemouth, and a start on the research and planning was made. For me it was an opportunity to help build that "layout of a lifetime", as I was never going to have the space at home. After about five months the group was down to two people. Despite these setbacks we carried on, and we are very pleased that we did.

Many hands...

Although the majority of the building was done by the two survivors, myself and Dave Bayman, we have been helped with building and operation of the layout in the last year or two by our friends at Model Railway Solutions, who themselves have two exhibition layouts with 'New Kensal Green' and 'Horfield' (now retired).

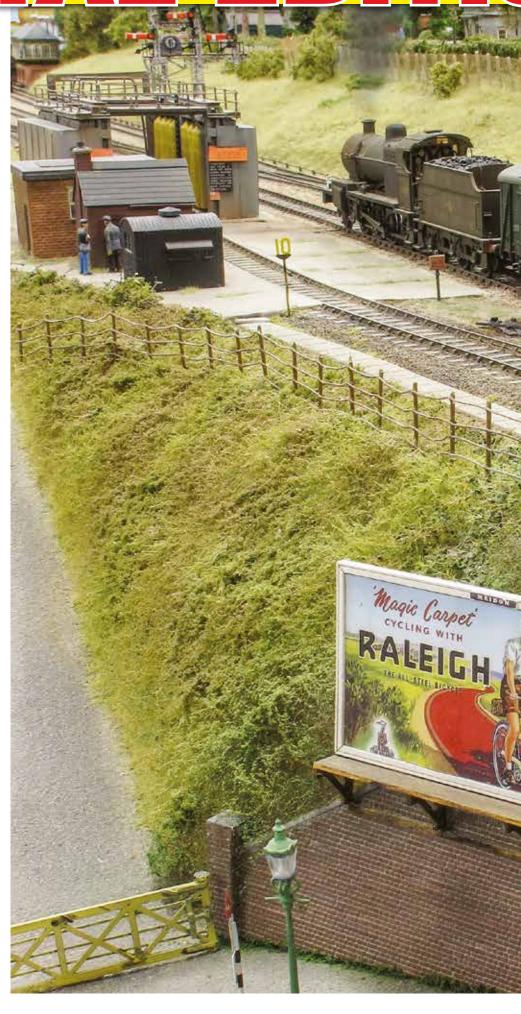
Initially a huge amount of research took place resulting in piles of photos and plans of the station, track and buildings. Using Templot, we overlaid the track plan onto a copy of an Ordnance Survey map to ensure accuracy.

Track

The plain track is C&L 00 finescale, but all the points were hand-built using bullhead rail on copperclad sleepers, including the two scissors crossovers and a double slip, using the templates from Templot. Although I'd completed a few test points earlier, this was the first time either myself or Dave had truly built our own. For anyone thinking of having a go I thoroughly recommend it. Ballast is a mix of Woodland scenics N gauge using colour photos to determine the look. The grunge in the station area is a mix of airbrushing and Treemendus products. Operation of the points is by Tortoise motors.

Operations

The layout requires a minimum of five operators but can accommodate seven.





Architecture and scenery



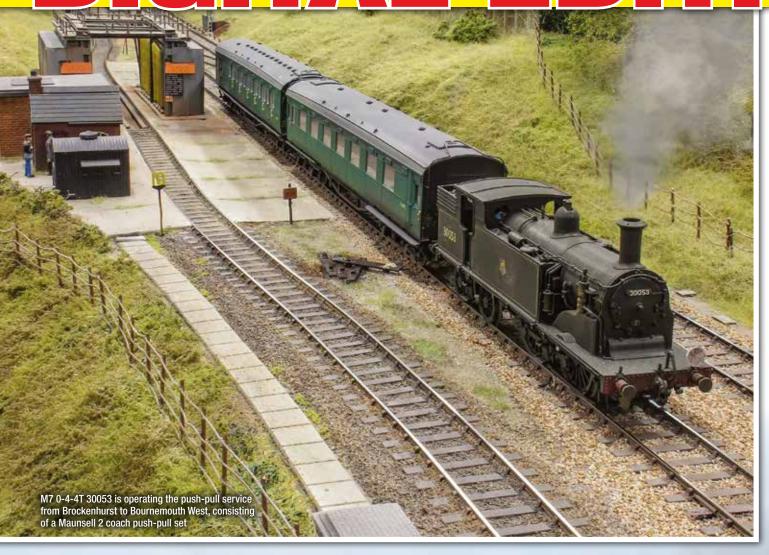


Most of the buildings on the layout are scratch-built by members of the group from a variety of materials. Carcasses in the main buildings are 3mm Foamex - a very useful product. I built the station buildings and Dave built the row of workmen's cottages. The station canopies are removable for transport. The exceptions are some of the large houses on the embankment, which are much modified commercial products. These may be replaced as time permits. The carriage washer is a much modified Bachmann product.

Scenery employs a base of Celotex. The static grass is a mix inspired by the 'Heaton Lodge' layout (as featured in BRM March 2017 and on RMweb). Use has been made of a wide variety of products from various manufacturers. All the trees are made from wire armatures and a variety of scenic materials, such as polyfibre, postiche and various leaves and flocks.

34067 The Bournemouth Belle makes a rousing start from platform 4. This daily Pullman service to and from London Waterloo had a relatively short turnaround at West, during which time the stock had to pass through the washer and the locomotive had to be coaled, watered and turned, necessitating some pretty nifty manoeuvres.

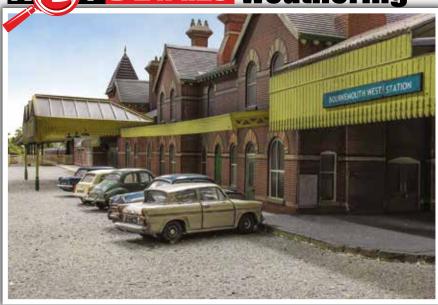




A Drummond class 700 simmers in the goods yard whilst preparing the daily pick up goods. The canopies on the station were 3D printed for us by our neighbours "Hey Create" and each one is over six feet long. They have been made removeable for transport.







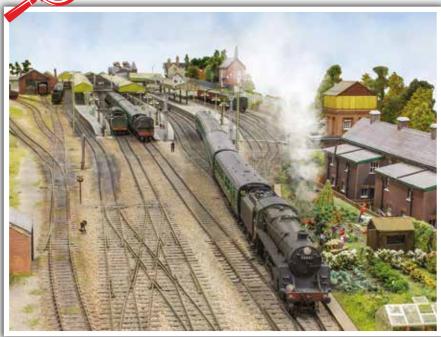
We are very fortunate to have Steve Knight amongst our group. What he doesn't know about weathering hasn't been written. In fact, there is only one problem – being a true "artist", he doesn't tidy up, and I get the task of cleaning the wheels! Everything on the layout has received some degree of weathering, from the obvious candidates, the locomotives, through all coaches and wagons to the buildings, signals, even some of the scenery. Nothing will be seen "out of the box". Even the cars in the station forecourt have been given a light dusting to remove the high gloss finish of bodywork and tyres.

Although the stock is mainly airbrushed, we use other techniques such as dry brushing and the subtle use of powders. Both enamels and the excellent Vallejo acrylics have been used on the layout.

The trackwork was first given a coat of Railmatch sleeper grime and areas around the point tie rods have had a dust of dirty black to simulate oil build up. In the yard we've used some of the brilliant Treemendous products, as well as the platform areas to simulate the build-up of dirt, oil and general rubbish. The overall aim was to try and blend everything in so that nothing jars.



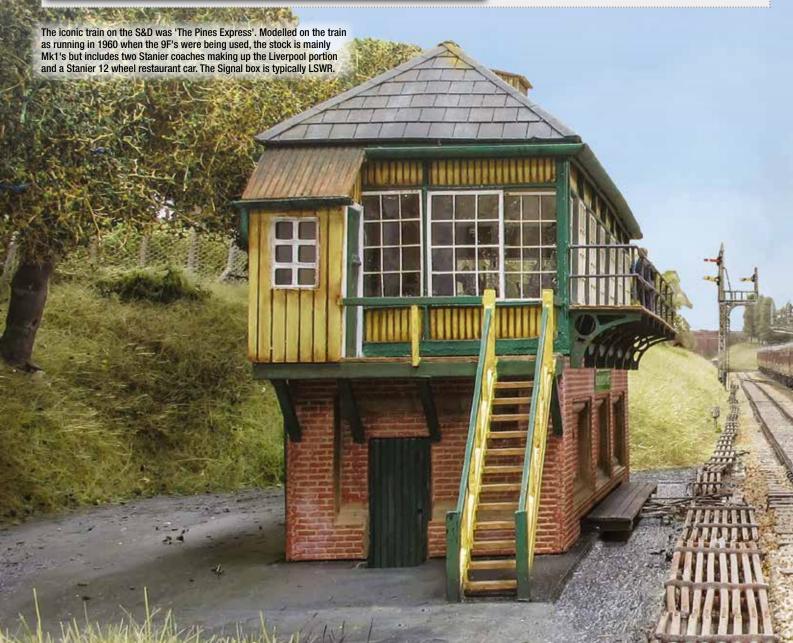
KEYDETAILS EXHIBITION SEQUENCE



There is room within the storage sidings and traverser for 23 trains. During our sequence, which takes around three hours to complete, we display examples of all the services which would have operated on a normal weekday, into and out of Bournemouth West. The principal London Waterloo services are represented by a full 11 coach train and the Bournemouth Belle with 11 Pullmans plus two 6 coach dining car. These and "The Royal Wessex" are examples of trains that were split at Bournemouth Central, the other portion continuing to Weymouth. In addition there are examples of ex LSWR services from Fareham and Brighton.

On the S&D side there are "The Pines Express" from Manchester, incorporating through coaches from Liverpool and cross country services from York and Bradford. Local services operating include trains from Bath, Bristol, Evercreech Junction and Templecombe. The most frequent services are to Salisbury and Brockenhurst, three each of these. We also run a pick up goods, arriving at the start of the sequence and leaving towards the end.

As there are no release points in the station all coaching stock has to be marshalled by the station pilot so, all in all, it makes for a fairly hectic sequence of movements, which was exactly the case on the real Bournemouth West.



coaches through the complex trackwork in the station throat. There is (hopefully) no hands-on operating. Coaching stock is in fixed rakes with Kadee couplings on the outer ends and on all locomotives. We developed our own couplings for between coaches. These are 3D printed and are a solid bar, which allows us to propel the stock over the myriad point work in the station throat while also enabling close coupling. Uncoupling at the buffers in the station is achieved with magnets, but we wanted a foolproof system for the station pilot without having to put magnets everywhere. This has been achieved by using a little-known product from Preci models.





A micro actuator fitted behind the Kadee pulls the jaws apart on the press of one function button on the controller and, at the same time, operates a slight shuffle, to release coupling tension and pull away slightly. The result is fault-free uncoupling anywhere and everywhere, whenever needed and without magnets.

Fiddle yard

This has recently been rebuilt by the crew at Model Railway Solutions. It consists of 11 storage roads, 12ft long, serviced by a seven track traverser, also 12ft long. Each train has a dedicated storage area, either in the storage roads or the traverser and this allows us to operate 23 separate trains of prototypical length during an operating session.

Stock

All the stock on the layout belongs to members of the group. There are examples of all the locomotives, coaching and freight types to be seen in and around Bournemouth West in the 1959-1962 period modelled. Most of the locos and stock are detailed proprietary models, but there are also a number of kit-built examples. We are

very particular about what can be run. All locomotives must pass an "A" exam before they are considered for use. All stock must be weathered and locos and coaches must carry appropriate lamps and crew. Many of the locos are now sound-fitted, which we think adds to both the operating and viewing experience.

Finally

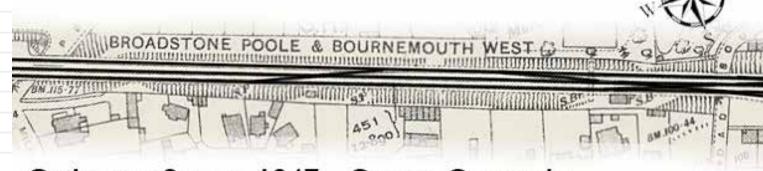
The layout had its first exhibition outing last September at Swindon Steam Museum. Since then the fiddle yard and traverser have been redesigned and the layout, in its revised format, is due to appear at the BRM show at Peterborough Dec 8/9 2018.



The allotments served the railway workers' cottages behind and were very close to the track - no fence was provided. Presumably they thought that railway people knew what they were doing.

Trackplan

BOURNEMOUTH WEST



Ordnance Survey 1947 - Crown Copyright

things we like



Steam

Live 'steam' is seldom seen at this scale, and it makes a splendid addition to the layout on this occasion. There is no proprietary solution used here, as the layout employs a prototype of a system that is still in development. We are duly intrigued, but it's an impressive effect when you see it in action.



Signals

Roger has opted for MSE and Gibson parts to scratch-build his signals, which include transfers for the signal arms. The servos beneath the layout, controlled by two GF control boards, provide a prototypically slow pull-off and bounce on return.



Theatre

Bournemouth West looks absolutely lovely in every single shot, but we particularly enjoyed this monochrome image which positively drips with period atmosphere.

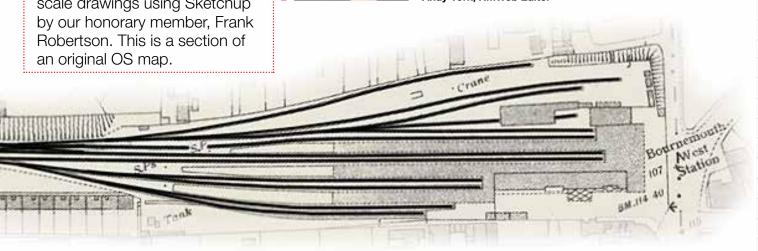
The trackplan was printed out at 4mm/ft, which was no mean feat as the layout is some 33ft long. Luckily we were able to obtain the original plans for the station buildings from BR, all of which were converted into brilliant scale drawings using Sketchup by our honorary member, Frank Robertson. This is a section of an original OS map.



What we think...

Stand-out layouts are rare beasts, but Roger and Dave's masterpiece ticks all the boxes – an interesting prototype location recreated absolutely to scale, superb execution of detail, accurate depiction of operations, smooth running with a touch of showbiz with the sound and smoke. It's my personal favourite of the last year and I'm sure it will become a bit of a classic.

Andy York, RMWeb Editor



WORLD OF RAILWAYS TV

Brilliant Bournemouth West

If Roger Sunderland's and Dave Bayman's mission was to create a 'layout of a lifetime', we can consider that it has been well and truly accomplished.

WATCH THE VIDEOS HERE (You must have a wifi connection to stream video content)







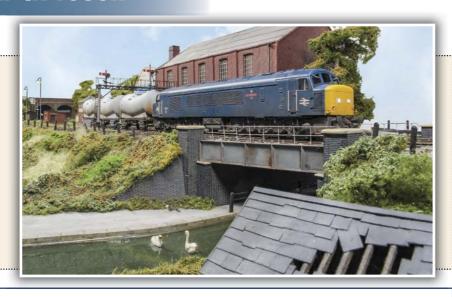
KEEP IN TOUCH

FALLING ROOF SLATES

Much as I admire BRM magazine, I must point out something I spotted in the October edition last year on page 57.

Others may have noticed that the slates are coming off the roof in the foreground, which is little wonder as the real ones would not have held at all with no battens across the rafters. The model ones have the advantage of being held together by glue.

Nigel Willis



WEATHERING SLEEPERS

Thanks for another great read from BRM. I was particularly taken by 'Orford' and 'Peterborough North'. The sleepers have that nicely faded/weathered appearance, and the rails and chairs were rusted but in an understated way that did not jar.

Would you do me a favour please, and ask Paul what he used to paint and weather the sleepers and also what he used on the rails and chairs? Also, Paul mentions using 2mm:1ft scale black ash ballast, but it looks greyer than this in the photos and it would be interesting to know how he achieved this finish.

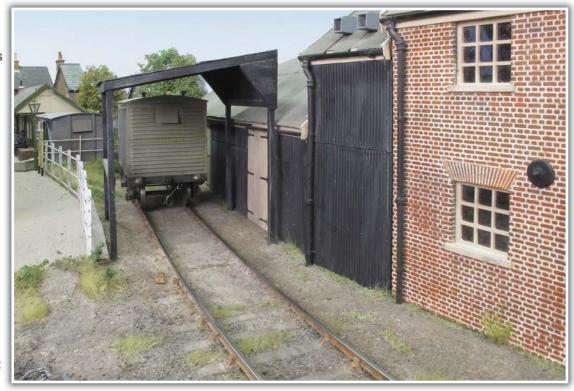
All help gratefully received.

Dennis Matthews

Paul Clarke says: The sleepers, which are plastic, were painted with Sleeper Grime enamel let down with a little grey (Humbrol 64), and, while the mixture was still wet, the sleepers were stippled with talcum powder. I experimented at first with a few spare sleepers to get the effect I wanted using a colour photo of wooden-sleepered track as a guide.

For the rails and chairs, I followed Martyn Welch's suggestion in his book The Art of Weathering, using a mixture of Humbrol enamels - Orange (82), Leather (62) and Matt Black (33), adjusting the mixture to give variety as I went along. To add texture where the track is little used, I also added a dusting of talc. To represent the oily look of the fishplates, they were painted with a mixture of Grey (64) and Metalcote Gunmetal.

As far as the ballast is concerned, it too was just dusted with a light coating of good old talc!
From what I have discovered one of the secrets to achieving a good result is not to put the paint on too thickly to ensure that any detail is not lost.



INSPIRING THE NEXT GENERATION







My son Jack and I met Phil Parker on Saturday morning at the Bristol Model Railway Show in Thornbury. Jack was so inspired by his miniature railway diorama based on the West Hill Wagon Works kit, that we promptly took up his recommendation and bought it while at the show. Jack is very able to make up Metcalfe kits, so he was very pleased to get three as free gifts to start our BRM subscription.

Needless to say, his 11-year-old enthusiasm pushed us to complete a diorama of Jack's own design in the two days since the show! I helped only with occasional guidance and by cutting out the grass mat, other than that, he did a good 80% of the work. Needless to say, he's very proud of his diorama, which has been named West Hill Miniature Railway - entirely logical given that's what it says on the packaging! I've emailed West Hill Wagon Works to let them know our appreciation of a fine product.

Stephen Holley

NEXT STOP – RETIREMENT!

TransPennine Express (TPE) has bid a fond farewell to beloved train driver, Joe Crean, following his retirement – 52 years after he started his service on the railway.

At 12:39, Joe, 69, pulled into Manchester Piccadilly for the final time - where he was greeted by a PA announcement, congratulating him on his outstanding service and thanking him for his many years of hard work. He was met by the applause and well wishes of his friends, family and fellow railway workers.

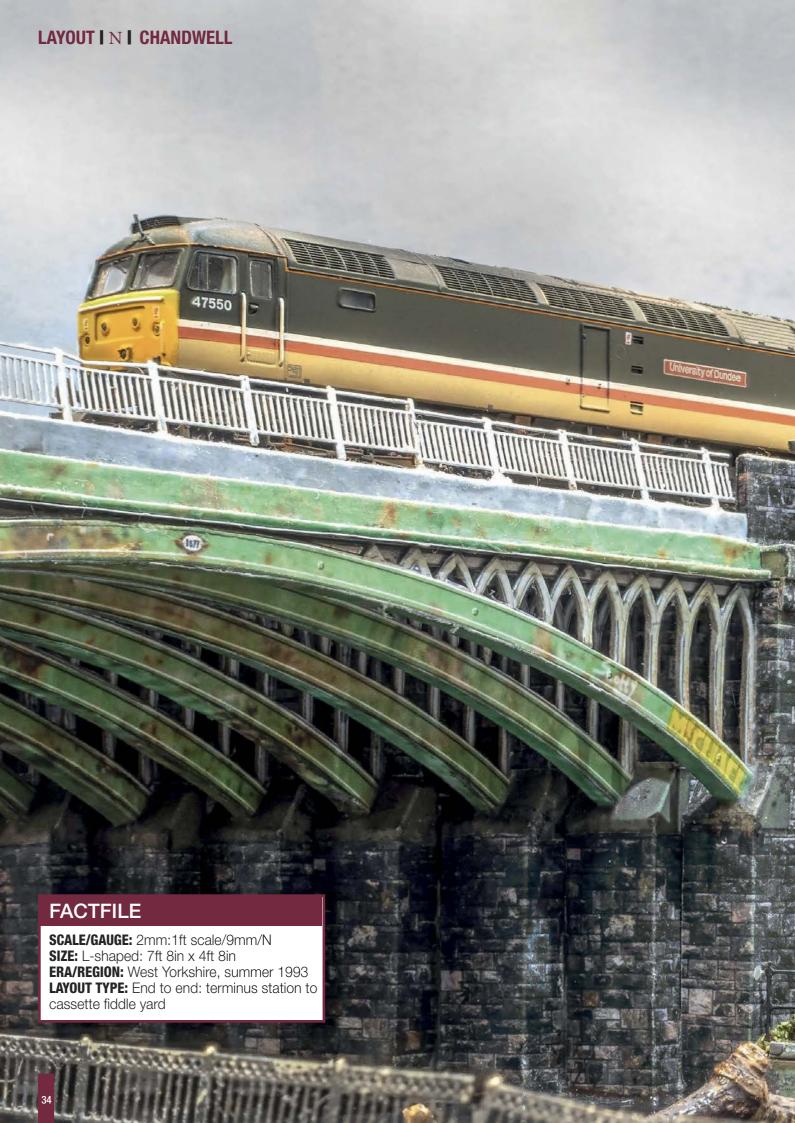
Joe has spent his whole career on the railway, first joining in 1971 as a steward in the dining car for British Rail. With inspiration and encouragement from his colleagues, he then went on to apply to become a train driver.

In April 1975, Joe began his role as a trainee driver and, after five years of training and working as a driver's assistant, Joe became a fully-fledged qualified driver in June 1980.

In 2011, Joe joined TPE as a driver based at Manchester Piccadilly and went on to spend several years as a driver instructor, helping to train the next generation of drivers.

Elizabeth Williams

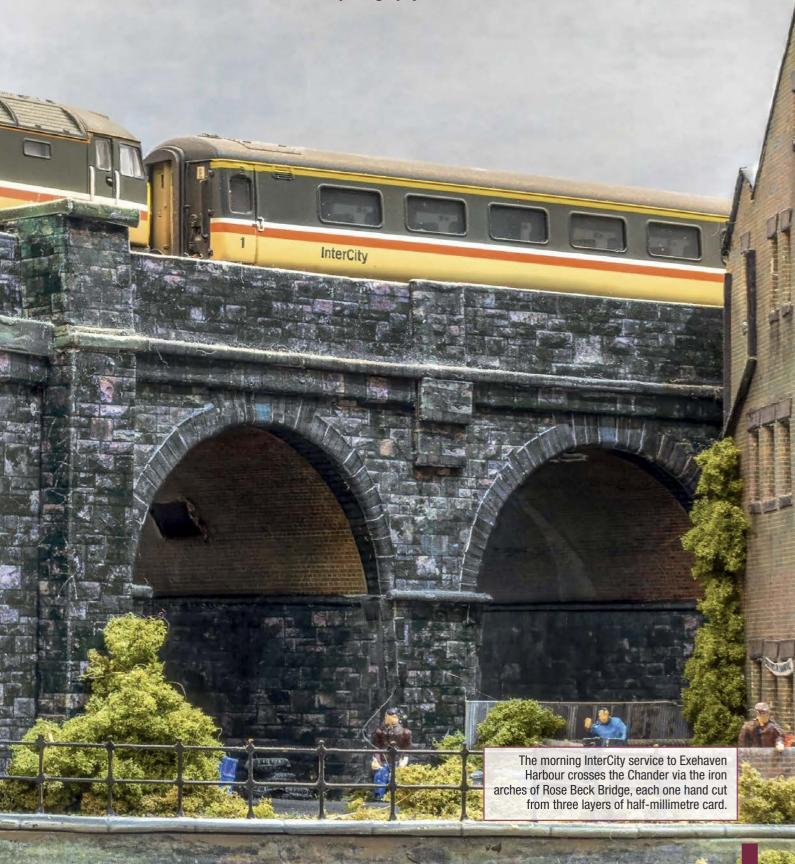




CHANDWELL

A 'down-at-heel' look was Michael Scott's goal with his study in miniature of West Yorkshire's early-1990s architecture.

Words & photography: Michael Scott



LAYOUT IN I CHANDWELL

handwell is a fictional major market town in West Yorkshire, sitting on a loop of the River Chander at the lower end of Chanderdale, to the west of Wharfedale and Airedale. The town is served by a four-platform terminus station, with a curved viaduct taking two main lines through the tunnels of Bakers Hill to Halifax and Huddersfield. and Leeds and Bradford. A branch line to the Chandwell goods yards and upper Chanderdale via Chandfield was closed in the early 1950s. The viaduct that carried the branch line was partially demolished in 1960, and the new indoor market, precinct, and market tower were built as a brave forward-looking modernist statement in concrete and brick. In present-day 1993, Chandwell has fallen on hard times after a long period of decline.

The model

I live in West Yorkshire, so I think "model what you see" is a great way to venture into a first layout. I have many happy memories of doing North East Rail Rovers with my family in the school holidays. We must have travelled thousands of miles. I remember the sights and smells, and so it was obvious that I would model that

The trackplan is based on that of Bradford Interchange, albeit on a curve rather than an incline. This gives great operating potential. Every platform face can handle arrivals and departures in each direction at the junction. Simultaneous arrivals and departures are possible across the viaduct's three tracks. And because the layout is on a curve, there are no reverse curves other than at the final entry to the platforms. This all leads to interesting operating and lovely photographs.

The layout is wired for basic DC, with cab control via a control panel of switches in the cabinets under the layout. Points are operated manually using the 'hand of God, as is uncoupling.

When I started 'Chandwell', my only plan was for it to be up on a viaduct and set in a West Yorkshire town in the 1990s. It soon became apparent that to achieve the true urban look, I would have to make buildings lots of them!

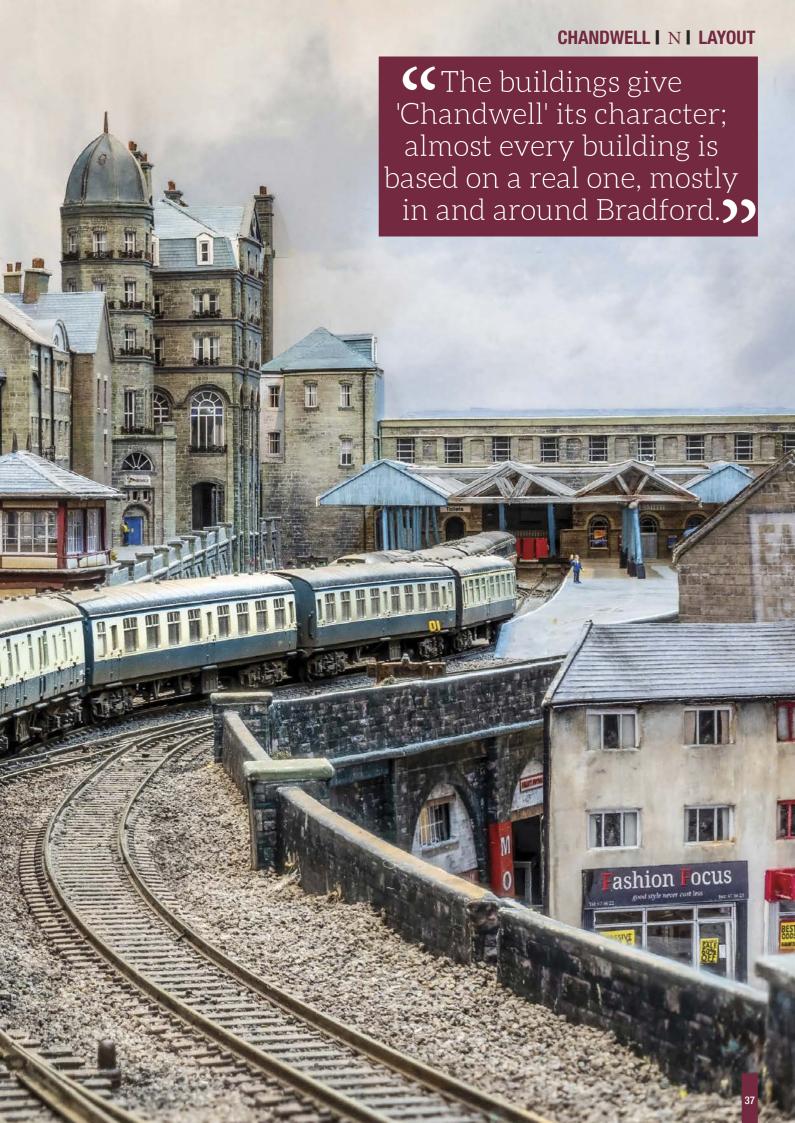
Learning new skills

Before this layout, I had never tried to scratch-build anything. I had put together some Scalescenes kits, and I knew my way around vector drawing applications from a hobby I'd had as a teenager. This led me to discover the free software application, Inkscape, and to realise that I could draw my own kits.

Every building is printed as a basic structure to A4 sticky labels on an inkjet printer, stuck to cheap card and glued together in multiple layers using PVA. The textures are printed onto matte photo paper and stuck to the buildings before being finished off with yet more layers of painted or printed card.

Each of the 500 or so windows have been hand-made using the acetate from cheesecake packaging. Sticky address labels make the frames in a technique known





LAYOUT IN I CHANDWELL

as the "Sticky Label Method". It's a fabulously effective, flexible, and cheap way to make windows of any size or complexity.

Since I base my buildings on real things, I have found the Planning Portal of your local council is a goldmine of information. Any building that has had a planning application in the last few decades should be listed there, and, in many cases, along with measurements and elevation drawings. This has greatly helped me get the shapes and proportions of all buildings as accurate as possible.

The buildings give 'Chandwell' its character; almost every building is based on a real one, mostly in and around Bradford. We have the impressive Midland Hotel, repurposed as the Royal Scot Hotel; the modernist Fluid nightclub in Shipley is here as Pockets Pool Hall; the elegant Crescent Hotel has moved from Ilkley to become the Earl Chandfield Hotel; the New Beehive pub in Bradford is The Weir, and, Otley's bridge over the Wharfe is here as the Old Bridge crossing the Chander. The station, with its tower, is an amalgamation of Chester, Darlington and Sheffield Midland, with the overall canopy from Ilkley. And finally, the lovely Midland signal box was greatly inspired by the one that stood at Guiseley. It still stands today at the Embsay and Bolton Abbey Steam Railway. By keeping the buildings true to the region, the fiction of the layout exudes a certain realistic atmosphere, which I think works.





ABOVE: A busy morning in Chandwell. The HST is pulling out of Platform 4 and about to pass over High Street. To the left are the remains of the Chandfield branch, lifted in the 1950s. We can also get a good view of the station canopy from here. It is made from card, acetate and cocktail sticks, and is based on the one at llkley.

LEFT: Looking up High Street from the mini roundabout. The curved Earl Chandfield hotel is based on the Crescent in Ilkley and was hand-made from card covered with Scalescenes textures.





In the three years since I started 'Chandwell', and through my regular YouTube videos, the town has begun to take on a life of its own. Every building has a back-story, which is woven into the fabric of the town. Imagined characters from decades past inhabit 'Chandwell'. This history inspires the graffiti, the names of the streets and buildings, and it helps guide me in deciding what to make, and where. There are even 'famous' Chandwell names such as 'Scotty', Britney Scroggins, and Silas Bickerdike.

The more modern buildings have exact reasons for being where they are, and the historical events that led up to them being placed there are known: the Market Street fire, which started in Spanielli's Ice Cream shop in 1953, led to the arrival in the '60s of Ridings House and Pockets; the awkward arrangement of the goods yards caused by the Earl of Chandfield's obstructiveness was responsible for the early closure of the Chandfield Spur and the arrival, again in the 1960s, of the love-it-or-hate-it brutalist clock tower and Market Precinct, based on those of Shipley.

By keeping sight of 'Chandwell' as a 'real' place, I have the benefit of being completely free to do what I want, but with the helpful constraints that I imagine modellers of a real location must use to their advantage.

THE TRAINS OF CHANDWELL

- Intercity Swallow HST
- Mainline-liveried Class 47 and rake of Intercity Swallow Mk. 2 coaches, with Mk. 1 buffet
- BR blue Class 31 and rake of blue and grey Mk. 1 coaches
- Provincial blue Class 142
- Regional Railways Class 142
- Provincial Sprinter Class 150
- Railfreight Petroleum Class 31 and short rake of tankers

I don't have much rolling stock on Chandwell, but each piece has been chosen to invoke the memory of those childhood summers. Everything was grimy and dirty. What I save in using cheap scratch-building materials, is therefore spent on the rolling stock. I've never tried weathering a locomotive before, so I have bought all of mine ready-weathered by TMC. I think by having the trains weathered, the overall look and atmosphere of the layout becomes a cohesive whole. Having a few pristine locomotives darting about would ruin the downat-heel, slightly depressing look I'm trying to achieve.

ABOVE: The only freight to visit Chandwell is the Pig Hill Tanks train, which reverses in the station on its journey from the Teddermouth Terminal via King Edward's and Stanley tunnels, to Pig Hill Yard. It is passing the old Poor Law building, based on a prototype in Bradford.

RIGHT: New meets old – a modern 'Sprinter' crosses Bridge Lane on the skew arch as we look across the Old Bridge, which has crossed the Chander here since the Archbishop of York had it built in 1228.





LAYOUT IN I CHANDWELL

ADDING REALISM

'Chandwell' is by no means finescale – fire escapes are hand-cut acetate with folded paper steps, downspouts are strips of cereal packet hand-coloured with a Sharpie marker – but I do strive for realism wherever possible.

I am often told by viewers of my YouTube channel that 'Chandwell' seems like a real place, which is what I aim for. Some of the things that I think help this are:

No level ground – there is very little level ground in 'Chandwell'. The river Chander and its weir are at the lowest height and all the layout goes uphill from that point – left to right, front-to-back. Each building sits on an incline, no matter how slight.

Grime and depressing detail – the river has rubbish in it; the shops have boarded-up windows; some units are to let; some of the beautiful Victorian architecture has awful brick extensions; horrendous 1960s brutal buildings have been shoe-horned in between graceful stone neighbours; graffiti abounds; peeling posters hang from hoardings.

Road markings – a simple detail often overlooked. I used the Highways Manual to get the dimensions and spacing of the road markings just right. The mini roundabout and its arrows are taken from the same manual that is used to paint the real thing.

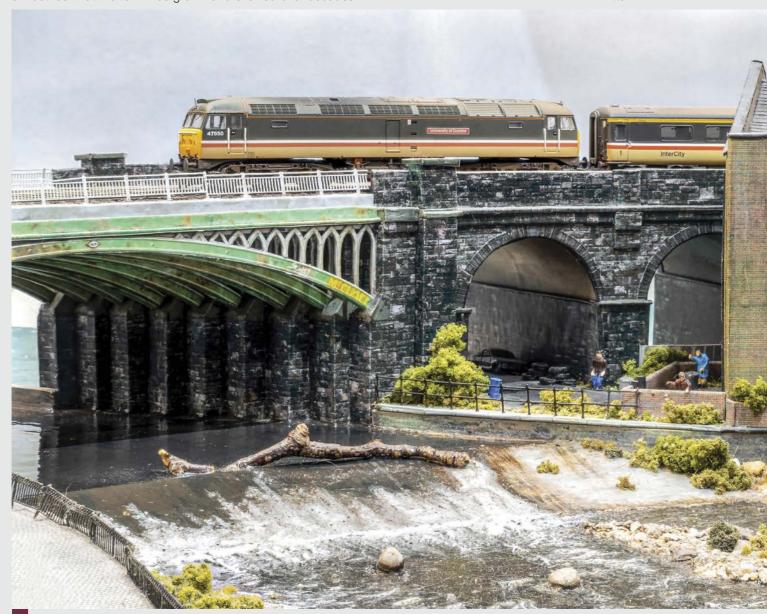
Organic growth – I've tried to make the town look natural. None of the roads intersects at right-angles with each other. None of the viaduct's arches crosses a road (or river) at a right angle. Three of the viaduct arches are skew bridges – the nine girders of Rose Beck Bridge are offset to each other. High Street Bridge and Bridge Lane Bridge have skewed brick arches with the bricks angled appropriately.

Hidden things, large and small – there is a lot in 'Chandwell' that you really have to work to see; there is graffiti on the back wall of the station, advertising posters on the inner walls of the bridges. The signal box is hidden behind the grand façade of the Earl Chandfield Hotel and only comes into view as you peer over the hotel's curved roof. The railway feels as though it is threaded through the town, and no view is the same as any other. Keeping the surprise going keeps interest high and there is always a new angle to discover.

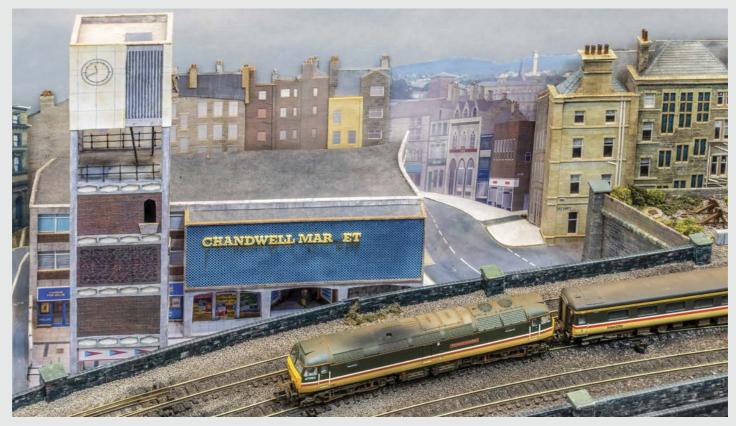
These are all small things in their own right, but taken together, and with your eyes half-closed, you can almost feel that the town has grown and evolved over decades.

RIGHT: Passengers looking right of the departing InterCity service will see the Brutalist front of Chandwell Indoor Market, and can marvel at the Clock Tower, as faithful a representation of the one in Shipley that I could manage.

BELOW: Passengers can look down on Robert's Weir, built by Simon Roberts in 1837 just up from the now-culverted Rose Beck. The model was simply and cheaply built out of liberally-varnished card, toilet paper, sand, and cat litter.



CHANDWELL I N I LAYOUT







Chandwell Jn signal box was hand-made from card, paper, cheesecake wrapping, and sticky labels. It is based on the Midland box that once stood at Guiseley.



As with most buildings in Chandwell, Chandwell Railway Station is built into gently sloping ground. It is a fictional building, greatly inspired by Chester, Sheffield, and

LAYOUT IN I CHANDWELL

Budget friendly

I have tried to make 'Chandwell' using as simple materials as I can find. There are one or two 3D-printed parts, and some laser-cut components from Scale Model Scenery. But I get the most satisfaction from making things from scrap, or at little cost. Printer ink is my main outlay. Other than that, I try to use what I can...

The river is just painted card, cat litter, and toilet paper, with varnish on top. The foaming water on the weir is sand, painted white. Chimney pots are cocktail sticks, as are the station canopy's columns. Ball finials on the hotel are hand-rolled Milliput. I've used toilet paper for riverbanks and food packaging for windows and fire escapes. Even the elegant iron arches of Rose Beck Bridge are just made from cereal packets stuck together with kids' glue. There is a lot of pleasure to be had in reusing old stuff, and I think 'Chandwell' shows that you can achieve a lot with very little outlay – just don't look too closely!

I wanted to try to incorporate elements of forced perspective into my layout, and I have only been partly successful. The river flows off to the side in a very tight and sudden curve, and because it does not meet the backscene, this is very effective.

Three streets – Back Market Street, Wallower Lane, and High Street, all have buildings that have been printed in a skewed perspective. This works nicely to suggest the street moves off into the distance, but is only truly effective from one viewpoint. Roads on the layout curve up to meet the backscene rather than hitting it full-on, and this seems to have worked to lessen the transition between model and backscene.

Looking ahead

The layout is far from finished. I estimate that it will be a 10-year project, and I am approaching halfway. I am continuing to add buildings. This year will see the completion of High Street, and the population of Station Road. Chandwell Town Hall (now closed, and occupied by a bed shop) is coming next, based on Sowerby Bridge Town Hall. Station Road will be a depressing collection of awful shops, with its architecture based on Shipley, Ilkley, Batley, or Sowerby Bridge. Then, my attention will turn to the industrial part of the town. Will I build mills and factories, or will I go for the back wall of a sports stadium, high-rise housing, or a 1990 new-build office park or mosque? Will we see the remains of the viaduct that took the branch to Chandfield? Only time will tell on that one.

Building 'Chandwell' has given me a real appreciation of the architecture around us, and has led me to see Bradford, in particular, in a new light. I now 'look up' in towns and really appreciate the built environment. I've even started to get a soft spot for the oft-maligned brutalist and modernist structures that were such a great part of my childhood.

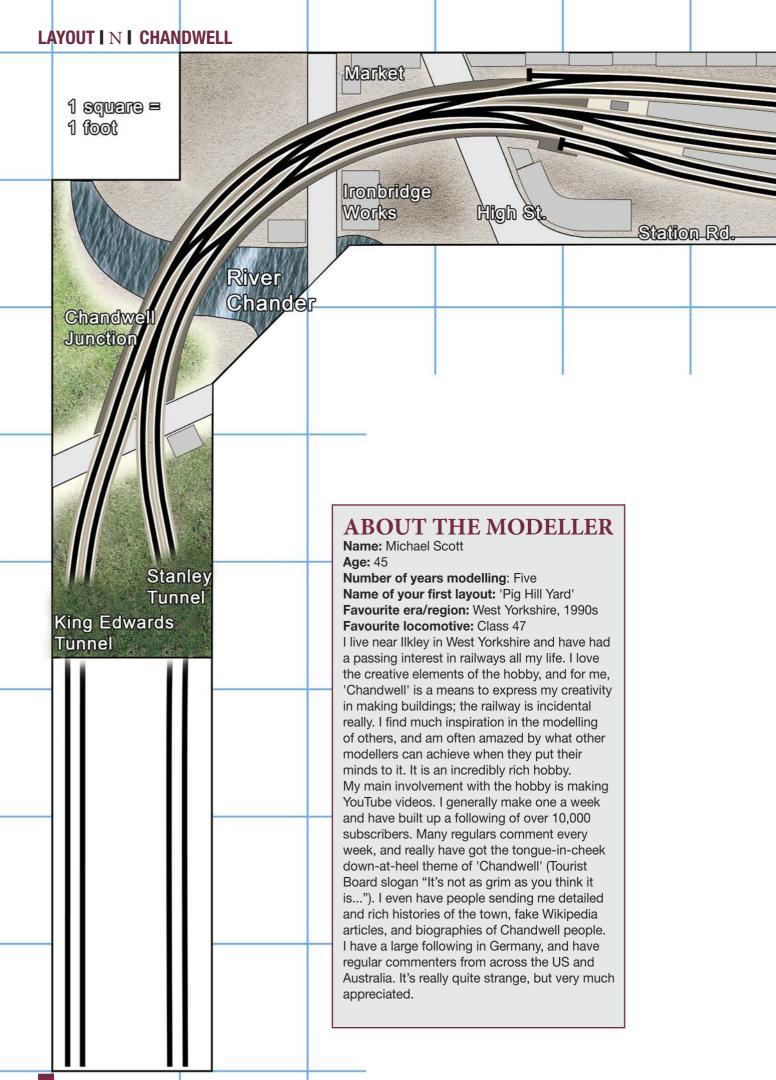
I have been inspired by many layouts over the years. The one that sticks in my mind the most was Dave Shakespeare's 'Tetley's Mills' (BRM January 2011). That one captured the dirty atmosphere of West Yorkshire



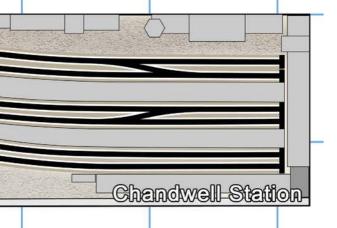
CHANDWELL I N I LAYOUT

Catching a glimpse from street level of a dirty Class 31 on the Newcastle via Crook service. We can see Market Street in the background and one of the forced-perspective sections which disappears behind Grant's Tower of the Royal Scot.





CHANDWELL I N I LAYOUT



so well, and I think has always been at the back of my mind when constructing 'Chandwell'.

I also owe a great debt of gratitude to the many inspiring modellers who share their work on YouTube; my river was made with toilet paper, as demonstrated by Kathy Millat. N gauge layouts such as Stephen Humphreys' 'Elvenhome' and John Warner's 'Piccadilly' gave me much inspiration, and still do. Alan Davis is another modeller I greatly admire, and his urban scratch-building of Stockton gives me something to live **BELOW**: With the up to.

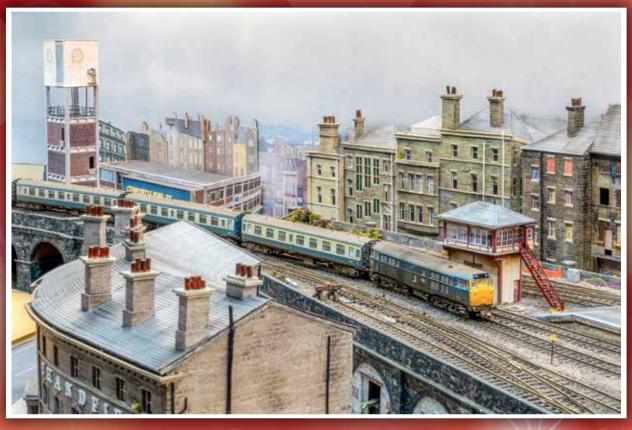
I am thoroughly enjoying making 'Chandwell' and the accompanying videos of my progress. The two elements of the hobby - building and recording complement each other perfectly, and each one inspires the other to help me continue to learn and (hopefully) make each building better than the last. With half the baseboard still bare, I have a lot to keep me occupied for the next five years!

war memorial and Timz Carz in the foreground, we can see the concrete 1960s buildings of Ridings House and Pockets Pool Hall, built on Market Street after the Market Street Fire of 1953.



BRITISH RAILWAY MODELLING CLICK AND SWIPE IMAGES TO SEE MORE





SCRATCH-BUILD A LOW-RELIEF HOTEL IN N GAUGE

Words & photography: Michael Scott



handwell' is my N gauge layout set in a fictional Yorkshire town in 1993. It is loosely based on Bradford but with an even more rundown, grimy kind of atmosphere than you'd expect. There's nothing idyllic about 'Chandwell' – even the slogan in the window of the Visit Chandwell Tourist Board office can only manage, "it's not as grim as you think it is..."

I scratch-built my station based on a mix of Chester and Sheffield, and its canopy on the one at Ilkley. When this was finished, I needed a large centrepiece building to go behind it to give it a sense of place in a large town.

I'd walked past the Midland Hotel in Bradford countless times and have always been inspired by its rambling footprint, its towers, domes and Juliet balconies; its dirty rear stonework contrasting with the opulence of the French Ballroom windows; its differing roof styles, and abundance of chimneys. This was the perfect prototype for a low-relief building to set behind 'Chandwell's' elegant station.

I model in card, covered in printed

textures and I try to make all my models as cheaply as possible. I use cheesecake wrapping and sticky labels for windows, and cut up cotton buds for chimney pots. I wanted to see what could be achieved in 2mm:1ft scale using the most basic of materials.

I constructed the hotel in 170 hours across 138 days. Counting the card, mirrors, railings, scalpel blades, glue, and everything other than the printer ink, the whole building cost just over £26. Here is the account of how it was put together.



I travelled into Bradford and took many photographs of the hotel, from all angles. I wasn't aiming for prototypical brick-counting accuracy, but, by taking many photographs, I could start to understand the look that I wanted to portray in my version of the hotel.

By walking around its perimeter, I could get a sense of its scale, and begin to appreciate that it could be broken down into individual buildings that join to make the whole. I began to realise that this build would be greatly simplified if I treated each part as a separate individual scratch-build.

I wish I had taken longer to truly appreciate the size of the building. There were many times during the build where it felt like I may have made things too large, and I lost confidence a few times. I spent too long taking photographs and not long enough properly looking at the building.

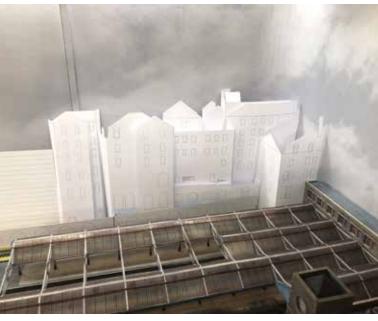


Once the overall design was complete, I printed the line drawings onto A4 sticky labels, which were then stuck to old cereal boxes. With simple scoring, folding, and a bit of sticky tape, the overall structure of the building can take shape.

This is a useful exercise that I follow for all my scratch-builds. It lets you see the building in 3D with very little effort and lets you imagine how the completed structure will work on your layout.

The hotel has a complex roof with gabled, hipped, and mansard elements complete with domes, chimneys and dormers. I use a simple no-maths technique to get the shapes right, but the cereal-packet mock-up helps me be sure I've got it all correct.

It is a useful tool to help spot mistakes early, too. The real hotel is a six-storey building on one end and a five-storey building at the other, despite the constant roof height. I had mixed elements from both and the windows didn't align. It was quick to spot this on the mock-up, and to make adjustments to the design.



Your Local Authority's Planning Portal can be a treasure trove for designs when scratch-building. I found a complete set of plans and elevations for the hotel from a 1997 planning application via the Bradford Council website.

I imported these into the free software, Inkscape, and started to draw simple shapes, which I could then arrange into an overall whole that represented my vision for the back of the hotel.

I used elements from the sides and back of the hotel to get a good arrangement. Because it is low relief, I needed to squash things up and make them not as deep as they otherwise would be.

I printed these as line drawings onto cheap paper, which could be folded into freestanding three-sided mock-ups. By treating each component as a separate building, a complex arrangement could be made from simple individual boxes.

Once a pleasing arrangement was found, I made adjustments to the design and then progressed to the card mock-up.



As with any low-relief building, there isn't much depth to play with. The base structure of the hotel is only 10mm deep. I used triangular fillets of 1mm card to make the supports for the unnaturally steeply-pitched roof.

Only three sections of the base will be visible on the completed model, and for these, I used Scalescenes Ashlar texture, which I darkened slightly before printing. The wall on the far right was to be a whitewashed yard, so I treated the stonework there to make it look like it had been painted white.

Windows were made using the sticky label method, whereby a cheap sticky label was stuck onto acetate (the wrapping from a portion of cheesecake is perfect) and then criss-crossed with a scalpel blade. The holes are then peeled out leaving the frame in place. The bars of my frames using this method are only 0.2mm wide.

I painted the back of the acetate black to prevent anyone from looking through them and seeing the back wall only a few millimetres behind.



By making the right side of the hotel an L-shape, it was possible to have its entrance on the station concourse. I designed the entrance using simple shapes — rectangles and lines — in Inkscape, and coloured them with basic colours. I used shading to give the hint of 3D to the elements, but, since this will only ever be glimpsed by squinting down through the station's arched entrance, it did not need to be high-fidelity.

I stuck the printed components to 0.5mm card and layered them up using simple PVA glue. The windows were once again cheesecake wrapping painted black on the back.



I needed to ensure that the new building matched the style of the existing station where the two adjoin. By making the windows the same, and using the same textures, it was simple enough. Because the measurements were all checked at the paper mock-up stage, I knew that it was all going to fit properly.

The most time-consuming part of this step was deciding on the name of the hote!! The sign was made in Inkscape with slight shading to make it look like it was in relief on the name board. The board itself was only 4mm tall, so there was no need to make it look any better as the detail would be lost once printed.

I used a thin strip of 0.5mm card to angle the board downwards slightly so as to be seen easily from the concourse.



As with all of the main walls, I printed the designed components onto a sticky label and then mounted this onto 1mm or multiple layers of 0.5mm card as required by the stone relief on the walls.

Before cutting the window apertures and covering in texture, I always hold the components in-situ on the layout to test the fit. I use magnetic right-angle clamps from York Modelmaking – these are very handy for this job as well as holding components together as the glue dries.

This L-shaped building with varying roof heights was a complex part of the build. It was essential that it fitted properly. The dry-fit proved that I wasn't going to be a few millimetres short, or worse, too long — the layout is immovable against the back wall.



Where I needed dormers, I made these from cereal packet and dry test-fitted them on the roof before adding more detail.

The little fillets of card for the roof were tiny and, even with tweezers, it was easy to drop and lose them. I always make sure I cut more than I need.

I mounted some simple net-curtain texture on a padding piece of 1mm card to give the impression of blinds behind the windows. Although only a few millimetres on each side, the sense of depth that this simple addition makes is really effective.

I only started adding curtains like this part-way through the build. I wish I'd done it sooner, but at least most of the windows have curtains and the sense of life that these give is really pleasing.



The hotel is built into a hillside beside the station and rests atop a retaining wall.

I designed the wall in Inkscape and measured the arches precisely so as to be evenly spread across the architectural elements of the hotel.

I designed the graffiti in Inkscape, too, and used various blending techniques to make it look as realistic as possible that it had been sprayed onto the stonework. I printed the texture three times.

I made the wall from two layers of 0.5mm card, and the buttresses from stacks of 1mm card. Both parts of the wall and the buttresses were then wrapped in the same graffitied texture so that it gave a convincing illusion that the graffiti was sprayed across the arches and the buttresses.

By building the retaining wall onto the body of the hotel, the hotel and ground became one solid model and there will never be the impression that the hotel has been plonked on top of the baseboard.



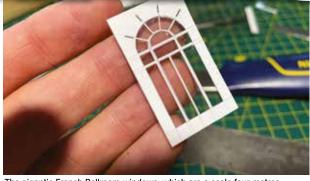
Once the retaining wall was in place, I added a terrace that descends across the back of the hotel.

A late change to the design saw me hack out a large hole in the base wall to model a narrow alleyway from the terrace to the front of the hotel.

I mounted a mirror behind this hole to reflect the light from the front of the layout. This has the effect of doubling the perceived length of the alleyway, as well as giving the impression of the alleyway opening out onto a street beyond.

I added a door and a sign to represent a seedy nightclub called Buffers under the yard at the base of the whitewashed section.

A simple stack of 1mm card made a convincing set of steps from the terrace to the ground.



The gigantic French Ballroom windows, which are a scale four metres tall, involved a modification of my usual sticky label technique. I printed a 3D-effect in two-tone grey on the wider frame elements. Sticking two layers of label together before mounting onto the cheesecake wrapping meant that the resulting frames would look more substantial than the tiny frames elsewhere on the hotel.

From there, it was the usual technique of slicing each way across the frames and using the tip of my scalpel to peel out the inners of the windows. It needs a steady hand and a decent pair of glasses to cut the curved elements freehand, using nothing but a scalpel, but with practice, good results can be achieved.

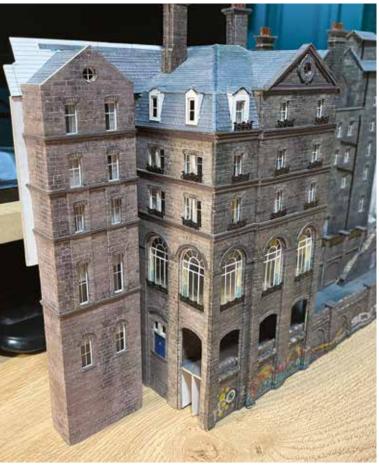
Each window costs a fraction of a penny, and to my eye, from a typical viewing distance, they are as passable as any other alternative I've tried.



The Ballroom is the only room where I haven't mounted black card behind the windows. These windows are so large, they let in a lot of light and it made sense to give the hint of a hotel interior.

I used 1mm card wrapped in a simple green and yellow texture to make the walls, making sure that they were mounted with an arch recess above the windows. I made simple blue curtains in Inkscape and mounted these behind the windows.

I cut a large rectangular opening in the back of the model and mounted a mirror across the resulting gap. The effect that this had is astonishing. Suddenly the Ballroom was bathed in light and has twice as many windows. You can see right through to the other side of the room, to daylight behind the backscene. It's difficult for a camera to pick up just how fascinating the effect is, but I am so pleased with how it turned out. I will be considering the use of mirrors on all my future scratch-builds.



I used various techniques for the detail elements of the building. I mounted a simple stone texture onto cereal packet and then cut this into 3mm, 2mm, and 1mm wide strips. By layering these on top of each other, I could produce a convincing stonework relief/ledge.

The chimneys are stacks of six layers of 1mm card covered in texture paper. By cutting a notch in the outer four layers, and leaving the inner two layers full width, a convincing stonework detail reminiscent of the prototype in Bradford could be had.

The chimney pots are badly-cut bits of cotton bud and don't bear close inspection. However, I was keen to do as much as I could using household materials, and I resisted buying ready-made chimney pots. From my usual layout viewing distance, this shortcut is not noticeable.

I was really grateful to Justin at Scale Model Scenery who created the laser-cut Juliette balcony railings based on the photographs that I took of the hotel in Bradford. These are tiny and super-detailed. I coloured them in with a black permanent marker and stuck them to the hotel with PVA glue.



The stone ball finials at the top of the narrow part of the building were made by rolling Milliput into a ball and sticking it on a flattened circle of Milliput. This was sitting on the tiniest stack of 1mm card triangles.

Once dry, the Milliput was well-bonded to the card. I painted the whole thing a stone colour that matched the texture sheet that I had covered the building with. A final drybrush of a darker shade gave it the look of two stone balls sitting on top of the building.

The stone relief on the tympanum and the circular window surround was made from cereal packet. By cutting the insides of the triangles first, then gluing together before cutting it all out as one piece, it was possible to get the sub-1mm wide card elements straight without having to position them individually.

DIGITAL EDITION EXCLUSIVE



The octagonal tower was made by gluing the six visible sides around a set of central octagons representing the floors of the hotel. I took care when designing the pieces that the flat edges of the pieces would butt together with the right external dimensions.

I used tape to hold everything in place while the glue dried. I then glued the base layers before applying the texture because I wanted to wrap the texture around the tower in one piece to avoid visible seams.

I had the added challenge of having to build around a network socket on the wall and a cable looping out of it up beyond the roof of the hotel. I glued octagons to hold the lower part of the tower in shape and then removed them to make space for the cable once the glue along the wall edges dried. As with everything else on this build, I used craft PVA as the glue.



The dome of the tower was a challenge. I have no idea how domes are constructed in the real world, so I made it up as best I could. Using Inkscape, I drew the basic dome shape across the full width of the tower.

I then squashed this shape horizontally to the correct width for the individual tower walls. Finally, I stretched it vertically to the same height as the measured distance around the original curve of the dome. I ended up with eight petals that I glued to cereal packet.

I made an inner framework of eight pieces of 1mm card that followed the outline of the dome, joining in a central spine

I glued the cereal-packet petals to this framework and was really surprised that it all fit together properly. I used tape to hold it together while the glue dried, and once dry, the dome was really solid.

I covered this with further paper petals printed using the Scalescenes Tarmac Road texture. I cut a little hole in one to represent the hole in the real thing in Bradford and topped it off with the end of a cocktail stick, which I had coloured in with a brown marker.

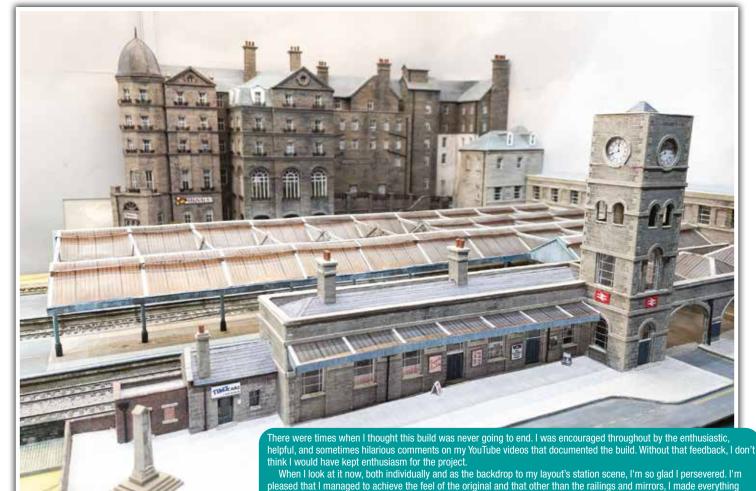


I finished the hotel with a rectangular base to the tower. No ground is flat in Chandwell, and the retaining wall starts to descend here in the direction of the High Street, which is well below track level. As a result, the doors here are 2mm lower than the doors to the right.

It was a matter of designing the retaining wall's supporting ribs to be the right height to accommodate the gently-descending ground.

The sign for the restaurant was drawn in Inkscape using basic shapes and colours. Once printed, I cut round it roughly, glued it to another part of the paper, and repeated. I then had the sign on a three-sheet thick stack of paper, which was cut out with a scalpel. This resulted in a stiff, subtly-3D sign. Once I'd run around the sign with a black marker, it was mounted onto the building on top of a small padding piece of 0.5mm card.

I finished the scene with a little curve of wall with a bush in it.



procedural. The whole is, however, much more than the sum of its parts.

This was a fantastic learning experience for me. I'd never attempted anything of this size before. However, by breaking the whole down into individual components and completing each one before moving onto the next, it was manageable and

else myself.

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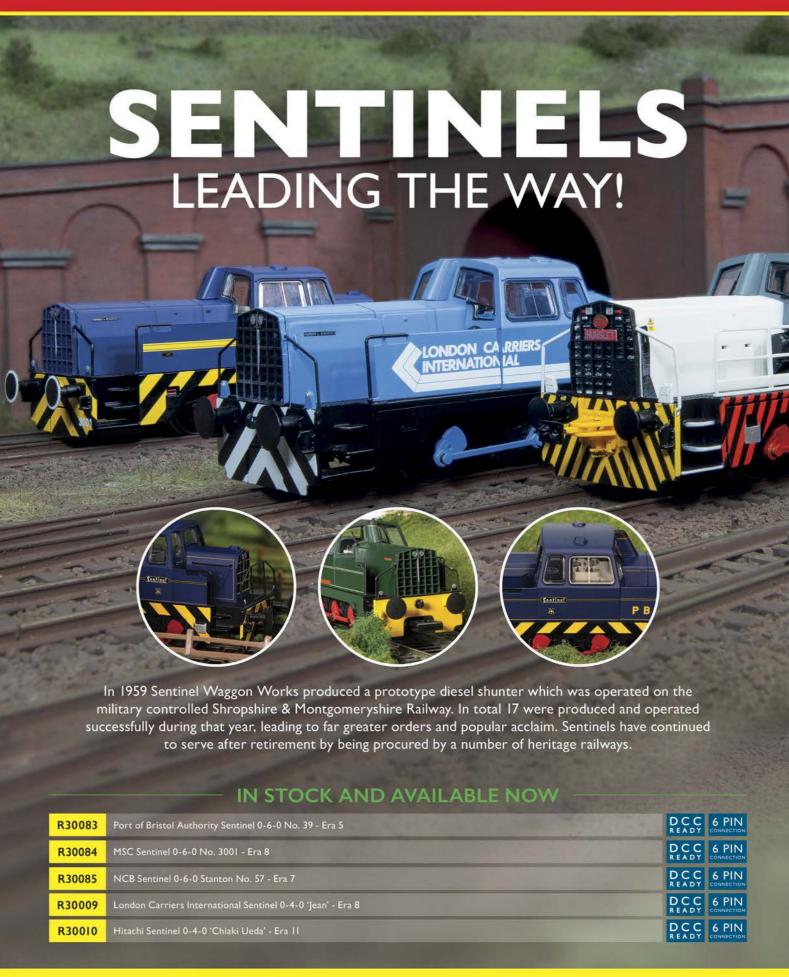


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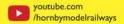
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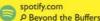












Getting practical with...







Michael Russel

David Lund

Phil Parker



elcome to your new-look practical section. This month, we have a variety of practical features and step-by-step articles, covering different gauges, skill levels and topics. If you're on the hunt for your next modelling project, then look no further. If you have any ideas on what you would like to see featured in a future issue, or have a question for the team, get in touch at brm@warnersgroup.co.uk. Happy Modelling!



Close at hand for every modeller is their trusty craft knife. There is no end to the uses we put them to, from removing parts from frets, to cleaning dried-up paint from around the inside of a tin so the lid will go back on.

> Finding the ideal knife isn't hard, try many of them in your hand and see which feels the most comfortable. Check that the blade is held securely so it doesn't wobble when trying to cut accurately.

Blades should be readily available, and easy to change. You'll find modelling with a sharp edge easier, and safer too, as less pressure is required for a cut.

Less pressure also means less chance of slipping, and fewer opportunities to apply sticking plasters to damaged fingers!



How do I connect wires to old Hornby track?

Second-hand track might be good for your budget, but not necessarily your temper when it needs to be wired up. In an effort to stop the steel rail rusting, old Hornby track was coated in a mystery liquid. While this does its job, it also repels solder really effectively.

The only way to connect wires is to use an R602 Power Connecting Clip, but that's a big, plastic lump on the side of the track. A much better idea is to use pre-wired fishplates available from Peco or Gaugemaster. These attach to the rails just like other fishplates, but have a wire attached that you poke through a hole in the baseboard. Easy, and pretty discreet.



uside

PAINTING O GAUGE FIGURES

MAKING TELEPHONE BOXES

LIFE WITH A 3D PRINTER

MODELLING WEEDS IN N GAUGE

ADDING INTERIOR LIGHTS TO COACHES

WEATHERING AN IGA WAGON

MANAGING DUST

HOW TO IMPROVE RESIN BUILDINGS

BACKDATE AN ANDREW BARCLAY PART II

Ideal for all skill levels

Painting O gauge faires



Phil Parker

Figures bring our layouts alive, but some ready-to-use versions can be costly, poorly painted, or both. While the work may be a little fiddly, with basic techniques, it's within the grasp of most modellers. These instructions won't make you a master painter, but they will set you on the way. After that, it's just practice.



The most important thing is to handle the figure you are painting without touching wet paint. I like to attach the feet to a lolly stick with superglue. This holds the model securely for painting, but the bond can be easily broken with a sharp knife when finished.



Start with the skin colour, flesh colours, and hence paints, aren't all the same! For white flesh, Humbrol is a ruddier colour, while Revell and Precision's shades are lighter. For O gauge figures, like these from ModelU, I lay down a base coat of Humbrol, dry-brushed with Revell.



To make painting less fiddly, start from the centre of the figure and work outwards. In this case, I've painted the shirts and then moved to the overalls. If the shirt colour spreads where it isn't wanted, the grey covers this up. A fine brush and good lighting are required, but this is easier than you think.



Let the paint harden overnight, and then finish the model with a wash of a dark colour to emphasise the creases in the clothes. An added bonus is that the shading will hide areas where your painting has gone 'over the lines'. Citadel (Games Workshop) makes a range of paints for this job.

WORLD OF RAILWAYS TV

How to paint figures

Phil Parker provides some top tips when painting a 3D figure.

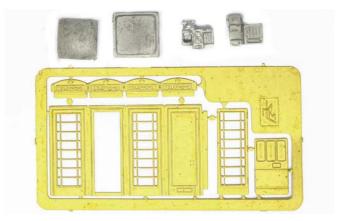
WATCH THE VIDEOS HERE (You must have a wifi connection to stream video content)



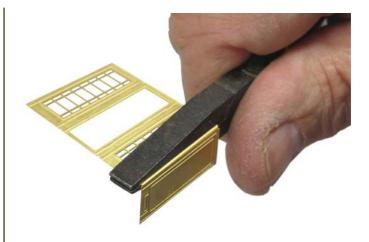
A red telephone box



Phil Parker



I like to add a bit of colour to any layout, and the traditional British red telephone box is ideal as it popped up everywhere. There are several kits and ready-to-use versions available, but, despite its age, the Langley etched brass and whitemetal kit is one of the best there is.



The main body has to be folded up using the marks top and bottom of the etch. A pair of pliers is fine for this, no need for fancy tools.



Superglue can be used to fix the door to the body and then join the corners. I used solder, thinking it would be quicker. It wasn't. Cleaning up the joints took ages, so the wrapper around the top was glued in place. There, are two telephones included, I've selected the older "Button B" version.



To glaze the model, you can cut out clear plastic and stick it behind the etch, but I've always found this to be fiddly as you don't want a gap between metal and glass. This time, I put some Deluxe Materials Glue'n'glaze on a screwdriver and pat it on the insides, giving nice, flush glazing.



Sitting in place, behind the station, the colour encourages viewers to look around the model, making it seem bigger than it really is.

DID YOU KNOW:
Before 1921, the
growing number of
telephone kiosks were
mostly made of wood
and painted in locallychosen colours

Diary with a 3D Printer: New delivery Michael Russel





I'm a traditional modeller and learnt the craft a long time ago with polystyrene kits, mostly from Airfix. I've always desired to have some input into my models and much prefer this than taking the route, for example, of assembling a scene from a collection of diecast models. Over the years, I have integrated kit-bashing and scratch-building into the equation, as well as buying off-theshelf models with minimal adaptation where there seemed little point in reinventing the wheel and complex moving parts were involved. So, I am used to sharing the 'glory' to a greater or lesser degree with someone else who designed/manufactured the kit or model in the first place. Modelling a scene has never been a solo effort, but I do wonder if the balance is changing.

Technology has moved on and 3D printers have arrived on the scene and on my desk. So, I wonder how this will change my modelling and whether or not I will be able to retain my modelling integrity. Of course, some elements of a modelled scene will have more input from me than others, but I need to feel overall that any diorama/layout that I make is substantially my own work. Certainly, advancements have been made that I am not completely happy with. Although I use digital cameras, I have not taken the step of using real-world photographs as backscenes to my models. I don't count this as modelling, but this is just my personal opinion and obviously not a view shared by many others.

Over the years, I've learnt not to buy into new technology until some time has passed. 3D printers have been around for quite a while now, and have come down greatly in price, but are they a useful, practical tool for the modern modeller? Certainly, this technology has not finished development and there are advancements to come. Is this the right time to buy?

Like everyone, I have limited time for my hobbies and I need to ensure that any additional tools that I employ are complementary to those hobbies rather than a distraction. So I'm interested to see how much the printer will repay me for the investment of time that I make in it. I don't think at present that I have time to adopt 3D printing as a new hobby, so will I get back more than I put in? As well as producing models, perhaps the printer can help me to produce tools that can assist in model construction?

A further consideration is software. What CAD packages will I need, will there be a steep learning curve and will I require a new computer to run it? Or perhaps there is a scanner to remove the design process altogether, but is that modelling?

From building 3D-printed kits that others have produced. I know that 3D printers can work with a range of materials. So I'm interested to see how well these materials integrate with the traditional ones. How will these new materials accept glue and paint? Also, how environmentally friendly are they?

The next step is to open the box and start my 3D printer journey and seek answers to these questions. I hope that you will join me over the coming months and that my experience will be useful to you if you have ever wondered what 3D printing is all about.

NEXT ISSUE: Michael assembles the printer and gets ready to tackle his first test print.

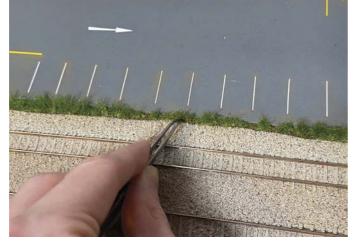
Modelling weeds



David Lund

Whether modelling an urban or a rural scene, plants, trees, and grasses will almost always be featured somewhere on a model railway, particularly when modelling today's railways where weeds and Buddleia seem to grow almost everywhere along the side of the tracks. Modelling the natural landscape is often one of the most enjoyable aspects of layout building, but it can also be one of the most challenging to get right. Open pasture, forests, moorland, cuttings, or even village greens all appear different, and change depending on the time of year you're modelling.





An effective means of modelling weeds in these locations is to cut a very thin strip of grass mat. Here, I used some offcuts from the Martin Welberg sheets -Wild Verge with Weeds. Pressing down with tweezers hides the edge of matt from view.



For larger clumps of weeds growing between tracks, I used smaller tufts pulled from the Martin Welberg bushes sheet, selecting them to appear about a scale of two or three feet in height.

Ideal for all skill levels



After a bit of experimentation, I found that it was possible to use the Martin Welberg Type D bushes to create a fairly realistic version of Buddleia. Pulling single plants carefully off the backing sheet, a pack of ten will make around 30 individual Buddleia.



The basic bushes are too large and regular, so cutting them roughly into three sections gives a better size and reveals more of the woody interior. When you cut these bushes, you can find that the glued base doesn't split equally, so do be careful that your plants don't disintegrate into individual strands. If this happens, a generous blob of glue under them will keep them together.



Using a small brush, I applied PVA glue to the ends of about a dozen branches. These spots are where the flowers are going to be applied, so it's useful to study photographs of wild Buddleia - not the cultivated ones sold in garden centres because these are different in appearance – to judge the number of flowers needed.



Holding the plant over a tub of violet flock powder, you can either sprinkle the powder on and shake it off when the glue has dried, or, as I found was particularly effective, pick up the powder with some tweezers and squeeze it onto the glued areas. This helps create the long finger-like flowers of the real plant.



Sticking the finished plant into place once the flowers have dried, these can then be bent downwards to mimic the droopy nature of the real plant.



The final step in this scene was to add some simple static grass tufts to represent smaller weeds. These were placed near pieces of lineside equipment based on photographs of the real railway.

Using a layered approach and tackling each in turn – grass, trees, bushes, and ground cover and weeds – has really helped capture a natural feel to the plants and landscaping in this scene. The wide range of high-quality products now available, especially from European manufacturers, has made it much easier to achieve greater realism, although the sheer variety can be a little overwhelming at times. Stick to a clear colour palette and limit the number of different products you use. This helps create a unified scene that really works as a lush, realistic backdrop to watch your trains pass by.

FITTING LIGHTS IN A COACH

I like to fit lights to all my models, as operating them in a night-time scenario gives a new dimension to your running sessions. It's easier than ever to do, thanks to clever products like this coach lighting unit from Hornby. The lights come as a simple self-contained unit with minimal wiring. It doesn't require DCC either because the unit is operated using a reed switch that turns the lights on and off using the provided magnet. Neither is any current collection required, as the power source is an internal lithium cell battery. This will provide power for the lights for at least 200 hours.

Make sure that your coach is fitted with the battery compartment on the underside, otherwise, you will not be able to fit the lights. Despite what it says on the Maglight box, only Hornby's very latest coaches are suitable, unless you plan on modifications.

To get started, removing the body is easy, slide your thumbnail along the bodysides to release the three clips on each side. The body will then lift off.



Michael Russell



WHAT YOU NEED

Hornby

(R40362A) East Midlands Trains Mk. 3 TS coach No. 42140

(R7305) Maglight lighting unit Mk. 3 coaches

Youchoos

Black Tack

TOP TIP

Fit magnets on the entrance and exits to your storage yards so that the lights are turned on and off automatically with the movement of the stock.

DID YOU KNOW

Lithium batteries are safe, but we do need to treat them with respect. Don't open them up, short circuit them, or try to recharge them, and keep them away from children. When the batteries have reached the end of their life, take them to a recycling facility. Throwing them into the ordinary waste can lead to serious water and soil pollution.

Ideal for all skill levels



Using a small cross-point screwdriver, remove the LED strip board by undoing the two screws at either end. Keep the screws safe in a container and don't get them mixed up as they do differ between components.



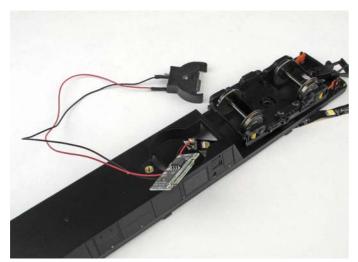
Remove the two screws from the seat and floor unit, there is one at either end. Note that these screws differ from the others. Lift the seats away from the chassis.



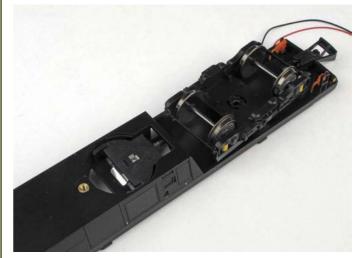
Undo the screw from the battery compartment cover on the underside of the coach using a small crosspoint screwdriver.



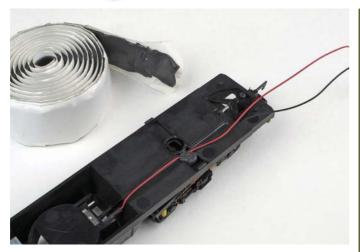
If the cover is a tight fit, turn the coach over and push from the rear with a blunt instrument. Remove and store the cover and screw safely.



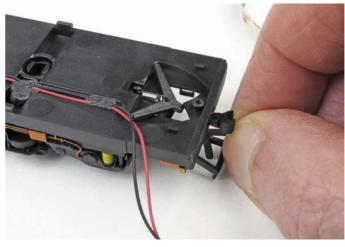
Thread the lights in from below through the battery compartment. Be careful when threading the reed switch through. It fits through the opening, but be careful not to damage the wired connections.



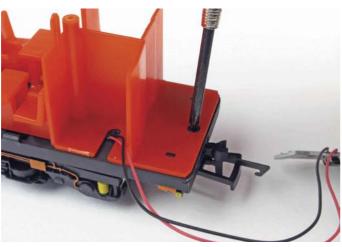
Push the battery holder into place. It is better to have the + polarity symbol showing outwards. I corrected mine after taking the photograph!



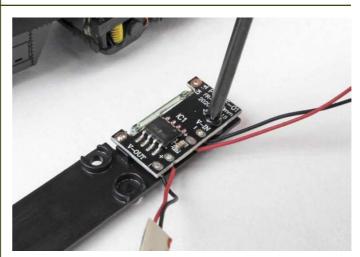
Run the wires along the chassis floor and hold in place with small pieces of Blak Tak, ensuring that these stay flush with the chassis.



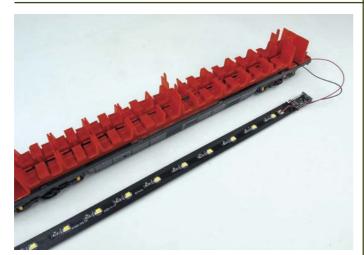
Before refitting the floor and seat unit, ensure that the couplings are properly seated in the chassis. All three end points should be above the floor.



Lay the floor and seat unit back in place, ensuring that the cut-out for the wires is at the correct end, and then refit the two screws.



You will find that there is a spare screw in the LED strip board. Undo this and use it to fit the reed switch board into place. Ensure that the reed switch fits into the cut-out as shown.



Peel the backing from the LED light strip and use this to fix the lights in place down the centre of the LED strip board. Be careful because the adhesive is strong and it is difficult to relocate once it is in place.



Refit the LED strip light board on top of the seat units using the two screws you saved during disassembly. Ensure that the lights are facing downwards.

Ideal for all skill levels



Push the wires into the compartment and hold in place with Blak Tak. Note the reed switch located in the cut-out and at the far end of the coach. Push the cell battery into place in the holder. You must get the polarity correct, or the lights won't work.



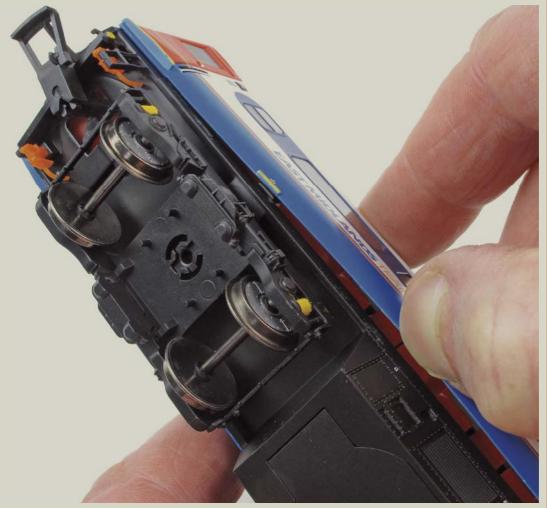
Put the battery compartment cover back in place and refit the screw. The lights can now be turned on or off by passing the supplied magnet longitudinally over the end of the coach where the reed switch is fitted.

CONCLUSION

This is a lovely product. It is easy to fit, works well and looks great once fitted. You will want to do your entire coach fleet once you've tried it. Take your time when fitting the first one. Once you've completed one coach, you'll be able to complete the rest much quicker.

PROTECT YOUR MODELS!

Cleanliness may be next to Godliness, but it leads to better model making, too! When completing a modelling project that involves glazing that is prominent, such as on rolling stock, every little bit of foreign matter will be on view. Exterior contaminates are relatively easy to cure, but anything trapped on the inside involves intrusive work, with the potential for damaging your model during rectification. Of course, it is best not to get any dirt on the interior to start with. So, before you start a project like this, give your workbench a vacuum or brush down, then use a damp sponge on your work surfaces. Of course, this is good practice anyway, especially when switching from scenic or weathering tasks. Ensure that you wash your hands and don't eat or drink while modelling, either.



Weather an IGA wagon

Goods wagons make marvellous weathering subjects as they are not cleaned as much as other rolling stock, nor repainted very often. So paint fading, dirt accumulation and rust are usually present. Modern wagons tend to see high usage and so often show signs of maintenance and human contact. Painting the upper wooden surfaces is the simplest and biggest improvement that you can make to this vehicle from Heljan. I took the vehicle apart and removed the decking for painting, but this isn't strictly necessary and reassembly is fiddly, so I don't recommend this.

The most important issue when weathering is to have reference photographs as a good online search can reveal.



Michael Russell



WHAT YOU NEED

themodelpaintshop.co.uk

- Vallejo acrylic paints
- Matt Varnish
- Orange Brown
- Chocolate Brown
- Light Rust
- Ivory
- Dark Rust
- Pale Sand
- Tensocrom (TSC207) Oil
- Airbrush thinners

expotools.com

- Superglue
- Masking tape



Remove the wheels and couplinas. It makes the former easier to paint and also stops the vehicle wandering off on its own. Use a flat-bladed screwdriver to lever them from the bogie frames.

Ideal for all skill levels



Some of the wagon controls were very clean on the real-world vehicle I was using as a guide, so I levered these off the model where I could as many weren't glued. They can also cause unwanted masking.



Use lots of thinners and at least four wood colours to paint the wooden decking by brush. Aim to colour the planks lengthwise to obtain the look of spot replacement over time. I used Orange Brown, Ivory, Chocolate Brown and Dark Rust.



I gave the blue paintwork a very light coat of Pale Sand and then, when dry, masked off the data panels using masking tape. This takes a while to do, but it is worth the effort.



Give the blue paintwork a thin coat of Pale Sand. To get even coverage, I used matt varnish with Pale Sand mixed in. This makes it easier to get an even coat, and you can brush the mixture on and still get good results.



Use Dark Rust to add rust marks to the end doors and stanchions. A small brush and a cocktail stick can produce random marks. Aim to get more rust on the edges and corners of the surfaces.



Spray Dark Rust onto the main body of the wagon, the bogies and some on the end doors and stanchions to tie them in. Look for rust streaks on the real vehicles, for example, below the control wheels on the solebars.

Ideal for all skill levels



Spray a very subtle coat of Light Rust on the dark rust patches to add contrast and variety. Add some to the bogie frames, too. Note the cardboard tube used to support the model for handling purposes.



Spray black onto the axle boxes, buffers' faces and the rollers, positioned along the solebars, to represent grease stains.



If control or fasteners have been sprayed, clean them with thinners using a cocktail stick and a scrap piece of cloth. Do this within 24 hours, or the paint will dry and be difficult to remove.



Remove the masking tape carefully with tweezers. Refit the wheels and couplings and replace controls you removed, reattaching with superglue.



Oil often runs down the solebars from the rollers. This can be represented using Tensocrom Oil applied using a small brush. Apply some to the buffer faces too. Don't overdo this effect.

CONCLUSION

I'm pleased with how the vehicle came out and am glad I took the extra effort to mask the data panels, as the contrast this creates leads to a dramatic result. You could use a brush to apply the paint, then weathering powders if you don't have an airbrush. The dropper bottles the paint was supplied in solve a lot of airbrush clogging issues as they prevent contamination.



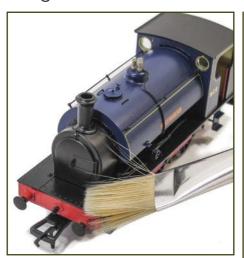
HOW TO KEEP YOUR MODELS CLEAN

Phil Parker

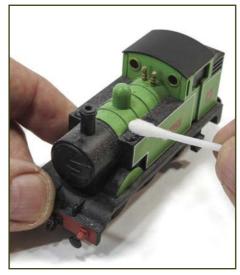
Phil Parker demonstrates how we can give our models a quick spruce-up to keep them looking their best.



Prevention is better than cure. Try not to leave models lying around gathering dust, or even being knocked and damaged. Putting them back into their original boxes at the end of an operating session can be time-consuming with modern clamshell packing. I prefer wooden, or cardboard, trays. These are quicker to pack trains in, which is why exhibitors tend to use them, so they can get away quickly at the end of a show. The trays normally need much less space than individual boxes, too.



For light dusting, keep some soft artist's brushes handy. I have a few that will never see paint, kept just for cleaning. Care is needed when working around details, but soft bristles shouldn't cause problems. If detail gets knocked off, it was probably going to fall off anyway. It's a good idea to work in a clean area, just to be on the safe side. Crawling around trying to find misplaced detail isn't much fun!



For stubborn dirt, a moist cotton bud will do the job. If you live in a hard water area, use cold water from the kettle, or a bottle, to avoid leaving tide marks on your paintwork. Real care should be taken, as it's easy to hook the bud in a sharp lamp iron or brake gear, then pull it off the model. Keep those brushes handy, too.



Woodland Scenics Dust Grabber is a soft gel that you pat on the model, and it lifts dust away. Soft enough to mould around detail without damaging it, and reusable, just put the gel back in the pot complete with dust for future use. It takes a little practice to use. Once you get the hang of it though, the gel works well, leaving painted surfaces clean and dry.



Cleaning a layout offers a similar set of challenges to cleaning a single model, just on a larger scale. I still use brushes, but decorating ones. Find the softest bristles you can, keeping them away from paint. Use a vacuum cleaner to suck away the dirt, but put a handkerchief over the nozzle should details be knocked off.



Dusty scenery can be vacuumed, but it's likely to look tired as you can never get all the muck out of it. A quick spray of hair lacquer and a sprinkle of fresh scatter material will soon have it looking as good as new.

5 ways to improve resin buildings



Phil Parker

WHAT YOU NEED

Hornby

R7361 - Parker Newsagents

Scalemodelscenery.com

AX186-OO Curtains and blinds LX212-OO Modern television aerials and satellite dishes RX005-OO Lipton's tea ghost sign stencil



If you don't have the time to make your own buildings, then the ever-greater selection of ready-to-use resin models provides a way to fill your layout up very quickly.

Most of these are really fine models, but as a modeller, I can't help feeling that some improvements are always possible. While the manufacturers perform miracles, there are always limits to what they can produce at a price we are willing to pay. But that just provides the opportunity for us to make the model our

Starting with the superbly named "Parker's Newsagents" from Hornby, I've made a few tweaks that would be appropriate to any resin building. None costs more than a few pence, and, apart from fitting a door, they don't require any major work. Most are an evening's work, but at the end of the modelling session, you'll have the satisfaction of seeing what you've achieved, which is what it's all about.

HANG SOME CURTAINS



The windows look very empty without curtains or blinds showing around the edges. You might see this in an unoccupied house, but it looks odd. Scalemodelscenery makes a nice set of curtains and blinds, correctly showing the back of the curtains, not the pretty side.

As the walls of the model are around 5mm thick, the best way to fit the curtains is to pop the window out by pushing from the inside gently with your finger. Then, stick the curtains to the back of the glazing with Deluxe Materials Glue'n'glaze, which dries perfectly clear. Trim to size, and then fix the window back in with a few tiny dabs of Glue'n'glaze.





How often can you see all the way through a building? If it's a model, more often than not, but that's not how things work in real life.

In an ideal world, you would carefully model each individual room, complete with furniture, just like they do at Pendon. I don't have time for all that, and anyway, you wouldn't see all the work without peering very closely through the window. Instead, a single piece of card or foamboard fits across the inside of the building. Beware that resin models aren't perfectly square inside – I cut the card roughly to shape and then force it into position. No glue is required.

Ideal for beginners

OPEN THE DOOR



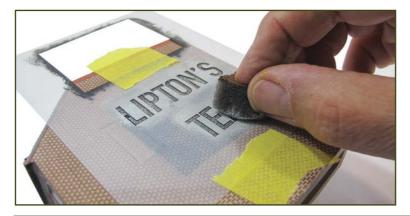


If there is a window, it should be see-through, and the shop door isn't. Sitting next to a big picture window that is clear, it just looks odd. OK, in the context of a layout, you might not notice, but it annoys me, so it's time for the biggest, and messiest job on the newsagents.

First, the door has to be removed by drilling lots of holes in it, and joining these up until I end up with a big rectangular hole. A saw drill bit is a perfect tool for this as you can make the hole, then waggle the bit in and out to cut a channel between the holes. Once most of the material is removed, a coarse file finishes the job.

Beware, the walls are thick, so a awful lot of dust will be produced. Wear a mask, as you don't want to breathe this in, and work outside if possible to save a lot of clearing up later. Be gentle with the building though, as the resin can be quite brittle, so knocking chimney pots off is easy. Fortunately, superglue will perform an invisible repair.

The doorway needs to be filed out, and then a suitable door found to fill it up. I leave it slightly ajar for a couple of reasons. First, this hints that there is someone in the shop, and second, if the door isn't a perfect fit, this isn't quite so obvious.



ADD A GHOST SIGN

I can't look at a large area of brickwork without thinking that a worn out old painted advert would be a nice detail. You can buy transfers for this, but I like the Scalemodelscenery "Lipton's Tea" paint masks. Simply tape in place and dab paint on with a sponge. I'm aiming for a very weathered effect, so not much paint is required.

Once dry, a light sand with a very fine abrasive will wear more paint away, exposing the bricks as though the sign has been exposed to the elements for a few years.

INSTALL A TV AERIAL



Nearly every building you see has a TV aerial, or satellite dish fitted to it, but how often are they modelled? Since we tend to view layouts from above the rooftops, the lack of TV hardware up there is especially noticeable.

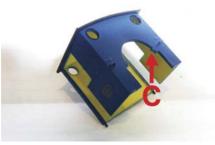
This laser-cut kit is perhaps a bit chunky, etched brass would be a better material to represent the fine metalwork of a TV aerial, but as I managed to demolish the first version through careless handling of the building, perhaps the cheaper option has its advantages. It's definitely the last detail to be fitted to the model.

BURTEARITONS ANDREW BARGLAY

Last month, Dave Hall talked us through his latest adaptation project, plus demonstrated how to modify the smokebox and strip down the locomotive. Now, he turns his attention to the cab and adds the final details.







CAB ALTERATIONS

The first step is to remove the handrails by gently levering them out using tweezers. Do try not to damage them as at least some are to be reused later. The curved cover for the handbrake must also be removed and it is simply a case of unclipping it. The brake column also needs to be removed by levering out with tweezers. Push the clear plastic windows in with a screwdriver and discard them. You may need to clean up glue residue from these on the inside of the cab.

This, now, is where we take a deep breath and get serious. Take a scalpel and score the rear panel of the cab along its joint with the roof. Repeat the same on the inside and carefully get it to a point where the back panel can be cleanly snapped off. The joint area on the underside of the cab roof is what matters here and clean up with a file if necessary. Taking the removed rear cab panel, score (arrowed A) and remove the upper part and sand the top of the lower section flat. Some prototypes had a back panel to the cab, even if they only gained them later in life, so if you do want to model one, be sure to find prototype photos as they were different from the type modelled by Hattons.

The raised ribs, where the cab side grab rails were located, need to be sanded flat (arrowed B). Because the tank assembly now sits lower, the clips on the inside of the cab front panel need to be trimmed at the top by the same amount as was removed from the bottom of the tank assembly (arrowed C) in order for the clips to locate in the tank assembly.

Ideal for experienced modellers)

ADDING WINDOWS

As previously mentioned, the windows in the cab front are already too high for the prototype that Hattons has modelled, but even more so for our chosen style, with its lower-pitched boiler. To rectify this either make discs from Plastikard, or take slices of plastic rod to fill the existing holes, after sanding off the moulded spectacle rim detail. It will help if a larger diameter than the existing hole is used, as in the process of having to open up the hole, the paint will also be removed. If left, the paint will hinder and weaken the joint between the cab and the new infill. Use MEK or Plastic Weld to make the joint – do not use any other form of adhesive. Once the new material is fully hardened, it can be filed and sanded flush with the cab front. Use a coat of filler primer and sand with fine wet and dry until satisfied that there is no visible join joint in the cab and the new material.

The next step is to mark out and drill the new windows and the side portholes. The centreline for the windows is 20.5mm from the bottom of the cab front and 4mm in from the sides. The portholes should be the same distance from the bottom as the windows and 5mm from the cab front. Make a pilot hole and gradually open it out to 4.5mm on all four holes. Depending on how you intend to make the new rims you may wish to open the holes out further and push slices of plastic tube in. I made mine from milled brass, stuck on the cab front and secured with Glue 'n' Glaze.

The cab side openings, instead of being square, as on the Hattons model, have curves both top and bottom. To make these take a piece of 1mm thick Plastikard and make a 10mm dia. hole in it. Sections around the hole can then be cut to infill the corners. Again, clean off paint at the joint and use MEK or similar to fix as these new pieces will need to be sanded flush with the existing surface. The final touch on the openings is to affix beading around it. This is easily made by cutting a strip of 0.25mm Plastikard to just over the thickness of plastic cab sides.

Take the previously cut-off upper part of the cab rear panel and sand off the spectacle rim moulding. Then, mark and cut along a line that passes at the same height as the top of the window holes so that you are left with the very top part that follows the curve of the roof. This can now be reattached to the cab roof.

HANDBRAKE

Going back to the lower part of the cab rear panel, we now need to decide on the handbrake arrangement. The Hattons model has the handbrake column on the outside of the cab, but most, if not all, of our style of prototype had it on the inside. If the column is to be fitted on the inside, then refit the column in the same holes that it was fitted to, but on the inside of the panel. Sand down the raised detail around the top hole on the outside and also fill the holes on the outside. When it comes to reassembly, the rear panel will need to be fixed with adhesive and the pins on the lower edge relocated in the holes in the running plate. The final part of the cab alterations is to add two pillars that go between the lower rear panel and the roof support. These can be made from plastic or brass rod of 0.5mm diameter.

CYLINDER BLOCK

The cylinders on our prototypes are level and have an outer wrapper that goes between the cylinder and the lower edge of the running plate. Those on the Hattons Barclay are slightly inclined and have no outer cover to the running plate.

Step one is to free the driving rods from the wheels by unfastening the crankpin screws. Take care not to lose the screws, or the collars that separate them from the connecting rods. With the rods now free, we can remove the two machine screws that fix the cylinder block to the chassis block. The entire assembly of cylinders, slide bars, motion brackets and



rods can be wrangled free from the chassis. The slide bars will fall out of the cylinders and the cylinder block is now ready for

The individual cylinders must be removed from the spacer that forms a saddle over the chassis block. Mark the top of the spacer to ensure that it goes back in the same orientation and side as it came out. This is important as the lower side of it is tapered and it will not fit properly if put the wrong way around. Score and break the cylinders from the spacer and clean up the edges of the breaks on the cylinders and spacer.

The cylinders will be fixed to the spacer again but they need to be swapped from one side to the other and be facing the opposite way around. It is far easier to show than to explain but Fig. 8a illustrates this far better than I can describe. File flat on

what is now the inside face of each cylinder and fix to them a length of 2mm square section styrene bar. This may need some offering-up and trial to get a good fit, but once we are happy that the flat outer face of the cylinder is level with the lower edge of the running plate, we can reattach the cylinders to the spacer. The slide bar assemblies should clip back into the recesses in the chassis block and underside of the running plate without alteration but a touch from a file on the tabs is all that is necessary if they don't. It is also advisable to use adhesive to now fix the slide bar assemblies into the cylinders, but take extreme care not to get any on the slide bars or piston rods!



CHASSIS BLOCK

The exact profile of the frame plates on the 1890s to 1920 period 14-inch Barclays appears to have changed in detail from one time to another but the main difference is that the front area is concave, instead of the right angle of the Hattons model. The rear portion is angled upwards from just aft of the firebox to a point where it meets the lower edge of the buffer beam, as shown, where the portions to be cut away are coloured red. This can be accomplished by the use of files and/ or a Dremel-type device. Small plastic parts, such as the brake gear, will need to be removed and this is easily done using tweezers as, in my experience, they are simply pushed into place in the factory without adhesive. As the cylinder block will have been removed for alteration, and the driving rods will be off, now is the time to remove the wheels. Three machine screws hold the keeper plate to the chassis block and must be removed after unclipping the brake rods from the front brake shoes. With the plate removed, the wheels will now fall out. Take care not to damage the pick-ups on the keeper plate.

As we have already removed approx. 1.5mm from the lower region of the smokebox and tank assembly, we need to remove a small amount of material from the top edges of the "wings", which form the inside faces of the tank. To do this, the motor must be removed. Either cut or unsolder the wires on the motor, prise out the motor from its mount and remove the mount by taking out the machine screw that holds it to the chassis block. It is advisable to also remove the rest of the electricals by removing the two screws that hold the pick-up plungers to the block. Take care not to lose the clear plastic insulating washers here.

Before commencing file work on the block, cover the now-exposed gears with tape to prevent ingress of filings and other dirt. The "wings" can now be rubbed on a sheet of wet-&-dry paper until the requisite amount has been removed. To match the notches made on the inside of the tank, we must file away some material from the top corners of the chassis block (see above, arrowed B).

REPLACE THE MOTOR

Looking at the inside of the tank, we see two indentations in the moulding that are to clear the motor and show just how tight a fit it is under the tank. With the decreased height of the smokebox/tank assembly, the motor is now an impossible fit and must be replaced. I have converted all of my Barclays to DCC, and even with the standard ones it is a difficult and a tight fit if the original motor is retained and so I began to replace the motors on them all.

The motors in question are of the same size and shape as the lamented Mashima 1015 and are available from various eBay suppliers as Minebea N20. N20 can most often be found attached to brass and

steel gearboxes, but what we need are motors only. They have a 1mm dia. Shaft that is 8.5mm long and are usually sold as being 6 volts. Model railway motors are usually 12 volts but don't let this put you off. These are slow-speed shunting engines and no modeller worth their salt is going to be running them at speeds where the controller will be putting more than 6 volts through them. I have the same motors in over a dozen kit-built engines and haven't had one fail yet. They cost as little as £1.19 each.

An alternative to the N20 is another small Minebea motor that is sold as being 12v. It has the same 15mm length but is 10mmx10mm square in section. These are a 6-pole motor and, although I have used only two of these to date, they work as well as the others.

The new motor will require a worm that will mesh correctly with the gearing already present in the chassis block; these are available from High Level kits as the medium worm to fit the 90:1 Loloader gearbox. Fix the worm using threadlock, Loctite, or similar. Mounting the motor couldn't be simpler - cut a rectangle of 1.5mm thick styrene that is as long and broad as the flat area on the motor and, after roughing the surface of the motor and that of the chassis block, affix to the motor using superglue. A second rectangle of 0.25mm styrene is then added to that already fixed. This will give the correct height so that the worm has enough clearance on the gear but still meshes adequately. I then fix the motor to the block using superglue but epoxy can be used if you are not confident of placing it correctly the first time.



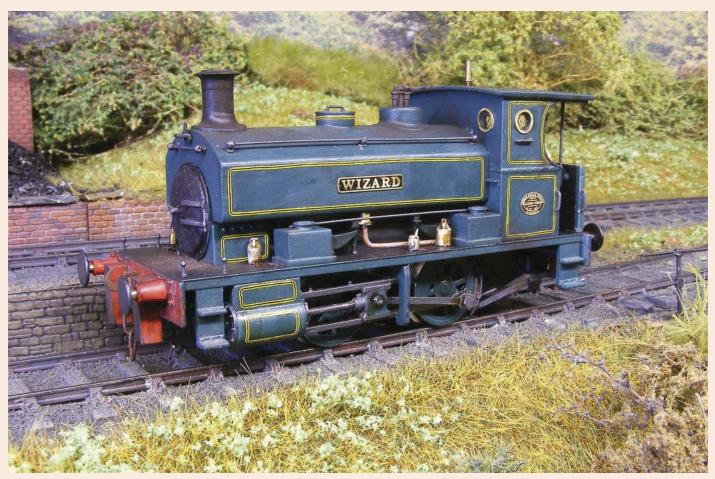
With the motor and fitting described, above, you can retain the 6-pin socket and run the model on DC, or fit a small DCC decoder as you would with an out-of-the-box model. If, on the other hand, you wish to fit DCC sound, and especially if you are fitting a Stay Alive, you will need to make other arrangements as the space is very limited. In my conversion, I made up a bracket to hold a 7mm dia. coreless motor and milled out a space in the chassis block to enable a Lais DCC Stay Alive to be fitted. The decoder, a Zimo MS490, was able to lie alongside the motor. The speaker used was a Limo6, from Youchoos.







(Ideal for experienced modellers)



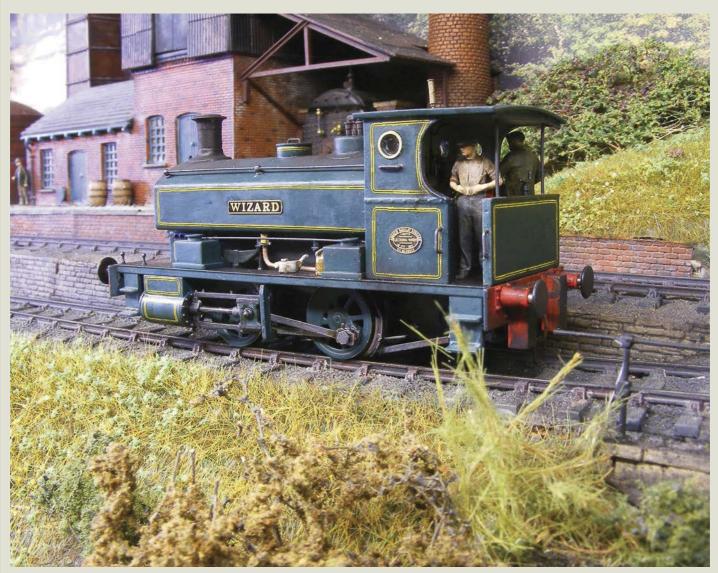
DETAILING

With any locomotive type that was in production over a number of years, there are bound to be minor differences at the time of build, where things were made differently, or where a customer ordered something to suit their particular working needs. It wasn't unknown for industrial engines to have working lives in excess of 80, and in some cases over 100 years, and so where long-lived industrial engines are concerned, there were often even more alterations made, or parts replaced, during that time. This is where we can pick a particular prototype and model it to precise detail or, as I suspect the majority of us do, pick and choose features to make our own individual model. Of course, we can leave the small things as they are but the Devil is in the detail and we have come this far, so I will go through the small changes that are needed to be as accurate as possible.

The style of cab, with its portholes in the sides, was used from 1891 up until 1908 but there were many differences regarding the rest of the locomotive, such as the size and pattern of wheels and the use of wooden buffer planks (buffer beams) that mean that the Hattons model is best suited to representing an engine built between 1904 and 1908.

Chimneys – whatever else we do; we must change or modify the chimney, and this is a relatively easy task on this model. The most difficult task in making a model chimney, as anyone who has ever done it will tell you, is the flare at the bottom, where it meets the smokebox, or in this case, the tank. That area is moulded into the tank and requires no attention on our part. There is a visible joint line where the chimney proper meets the tank moulding and if you are lucky, you will have a model where no adhesive has been used and it will pull straight out. If it has been glued, the joint must be weakened by drilling it out to the point where the chimney can be twisted off. The existing chimney can be retained but requires a tube or some other means to increase its height to compensate for the loss in height of the tank assembly. Other styles of chimney can be observed on our prototype and include an almost straight stovepipe and a tapered stovepipe that has a rim.

Sandboxes - Some engines had only two on the running plate but some had four. Those with two on the running plate would have had the rear pair inside the cab. In both cases, the design is different to those on the Hattons model, which has straight sides that taper slightly toward the top. On our prototype, the sandboxes have a broader base section with parallel sides and a larger filler lid, and it is reasonably easy to make these from blocks of styrene and Plastikard, if you wish to. To make the lids, drill a 2mm hole in the top and push a short length of styrene into the hole. The outer rim of the lid is an Alan Gibson 2mm brass bearing that simply fits over the styrene rod, with the styrene then trimmed so as to be flush with the top of the bearing. To remove excess 'boxes, simply prise them off. They may snap off at the mounts, or come free. If they snap, the stubs need to be sanded flush with the running plate, and if they come out, the holes in the plate will need to be filled. Whilst we are filling holes in the running plate casting, we may as well fill the two holes in each buffer beam that are provided for the fitting of vacuum brake pipes. Vac-brakes were never fitted to any of these engines from new. The slight cut-out portion in the lower edges of the buffer beams is another non-prototypical anomaly that can be rectified at this stage, providing you intend to ditch the tension-lock couplers that I assume this cut-out was designed to cater for.



Hand Rails - The hand rail pillars, or knobs, on the tank of the Hattons model are of the later bar type and are not suitable, unless we are to assume the entire tank is a replacement, from another, later engine. This wasn't unknown with steelworks and collieries, where engines would go into a central workshop for overhaul and there receive parts from different engines. As the tanks were the same as on the later style, this is entirely possible. They would, however, have been built with ball-ended pillars, and Markits short type are the most suitable alternatives. New hand rail wire of 0.45mm will be required, too. The cab side grabs that fit under where we have made the portholes can be fitted back in their original holes without modification, but the vertical rails are longer than they should be on our prototypes. These should be about two thirds of the current length and positioned mid-way up the sides. The existing holes need to be filled, new ones drilled, and new rails made from 0.45mm brass.

Steps - The front and cab steps on the Hattons model are cast as part of the running plate and are of a different pattern to that which our prototypes would have been built with. The Hattons steps are straight up and down, where our type ought to flare out toward the bottom, where the lower tread is wider than the upper one. Removal of the existing steps is straightforward and can be accomplished by cutting them off and filing the stubs flush with the lower edge of the running plate. In-service replacements include ladder-type fabrications and cab steps that look almost like a shortened version of brake van running boards. At this point, I must confess that I left the Hattons steps in place on my own model.

Finishing - If you are modelling the engine as new, and wish to be absolutely accurate as regards the lining, then good luck with that! The finish and lining of industrial locomotives of the time was every bit as good as their main line counterparts, and Andrew Barclay locomotives were no different. The lining consisted of a thick black band bordered by two thinner yellow lines and was on just about everything, including the crossheads, steps and even the smokebox, which was, unusually, painted the same colour as the rest of the bodywork, with only the door being painted black. The wheels, springs, frames, and even the crossheads were lined but in 4mm we have to draw the line some way short of that. I used Fox lining for 2mm scale, which looks about right for width but with only right angles and straights being available it does mean the awkward shapes, such as the curvature of the cab opening and the tank front, have to be avoided or simplified. Some people can achieve excellent results with this sort of lining but I am not one of them.

The final details were oil cans, from RT Models, and the crew figures, which came from Modelu. The works plates are by Silver Tay Models and can be bought from eBay.

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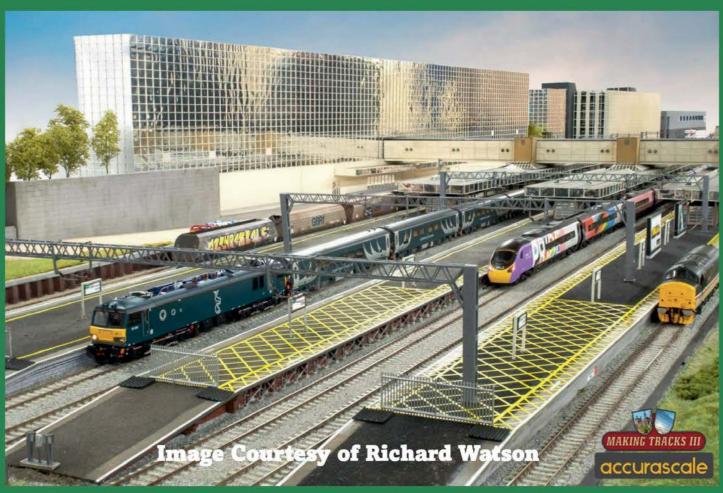


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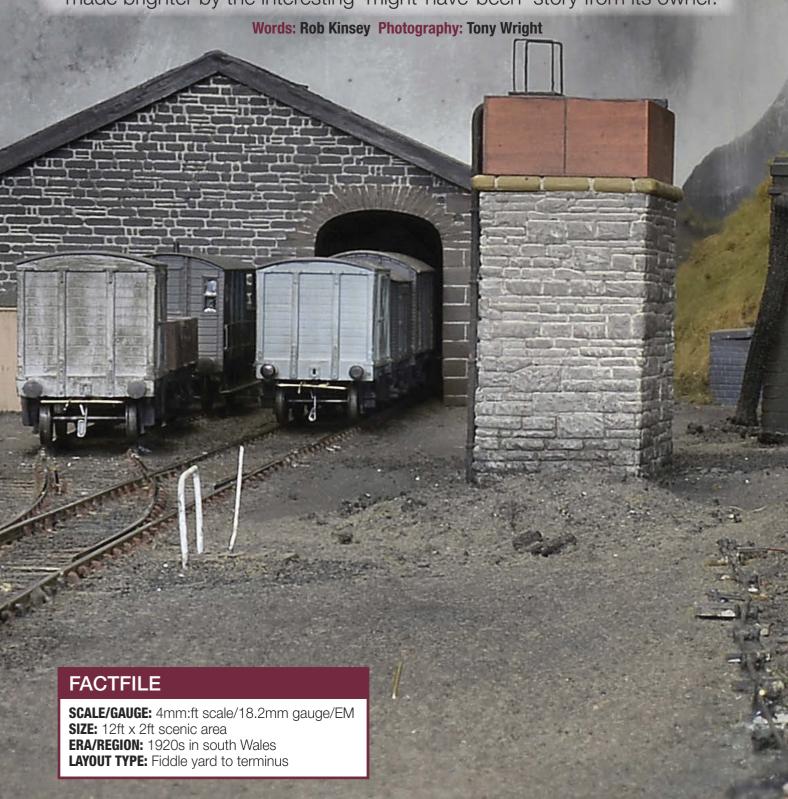


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MERTHYR RIVERSIDE

We return to the gloomy skies of this former BRM project layout, made brighter by the interesting 'might-have-been' story from its owner.





LAYOUT I EM I MERTHYR RIVERSIDE

he longer standing readers of British Railway Modelling may remember a series of supplements that were attached to the September to December 1998 issues of the magazine entitled Building a Model Railway in which members of Wolverhampton MRC described the construction of a small EM gauge layout. That layout has evolved into 'Merthyr Riverside', and this is finally nearing completion.

When I first joined Wolverhampton MRC, I was surprised and a little disappointed to find that the main modelling interest of the club lay in the Eastern Region during British Railways' modernisation period in the late 1950s and early 1960s. If I wanted to join in, I'd have to adapt and so I started building suitable models, choosing freight stock as there seemed to be a shortage in that area. I'm still waiting for a suitable GWR main line to be built and I haven't lost all hope yet.

Over time, my area of GWR interest moved around 70 miles eastwards, to the railways in the coal-producing valleys heading north from Cardiff. However, I chose to base my model on the small and almost perpetually poverty-stricken Brecon and Merthyr Tydfil Railway (B&MR), rather than one of the bigger players in the valleys like the Taff Vale (TVR), Rhymney (RR) and Barry (BR) railways. An approach from BRM to build and describe the construction of a small EM gauge layout offered an opportunity to build something that matched my preference. I would have liked to model an actual prototype, but even small prototype stations take up a lot of space in 4mm:1ft scale and so a fictitious station was required.

A little history

The railway history in and around Merthyr Tydfil is complex, with five pre-grouping railway companies owning their own or sharing joint lines into the town's High Street station. The first to arrive was the Taff Vale Railway in 1841, followed in 1853 by the broad gauge Vale of Neath Railway (VoNR) (subsumed into the Great Western Railway). The Brecon and Merthyr Railway reached the town in 1868 by exercising running rights over about half a mile of the VoNR line. In 1879, after many frustrated attempts, the London and North Western Railway (L&NWR) became the fourth company to reach Merthyr using an agreement with the B&MR, which saw about four and a half miles of the B&MR line converted into a joint B&MR/L&NWR line. The Cambrian Railway (CR) also operated trains into and out of Merthyr High Street station running over the B&MR route, but the final arrival was the Rhymney Railway with its joint line with the GWR.

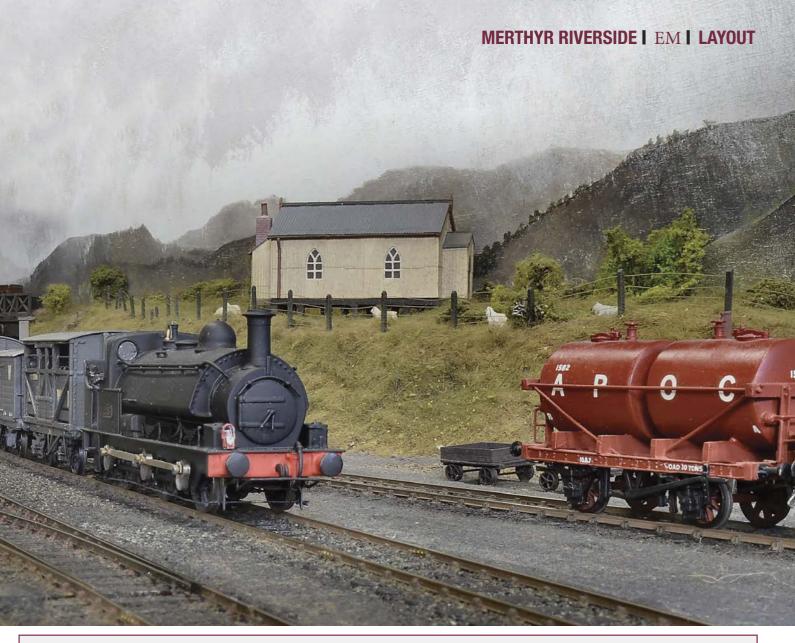
The TVR originally ran into its own station at Plymouth Street. However, in 1877, they built a connecting line and their passenger services were subsequently diverted to the VoNR's High Street. Nevertheless, Plymouth Street was retained as their goods station, which lasted into BR days.

The layout's backscene usually generates more comments than the rest of the scenic work put together."

The justification for Merthyr Riverside requires a variation of historical reality. I have assumed that, when the B&MR arrived, it failed to reach an agreement with the VoNR for running rights over its line and so was forced to build its own station on the western outskirts of Merthyr near the River Taff hence 'Merthyr Riverside'. It quickly became apparent to the B&MR that they had made the wrong decision, but cash-strapped as ever, they were unable to change the situation. The arrival of the L&NWR proved to be their salvation by providing the necessary financial input to complete the line. The passenger service was diverted into High Street station but, like the TVR, the B&MR chose to retain its original station for freight traffic.

Construction timeline

The model depicts the scene at 'Merthyr Riverside' during the mid-1920s, just after the grouping and over 40 years after its closure to passenger traffic. I was anxious that, despite the layout being fictitious, it should capture the essence of a Brecon and Merthyr station. So, before construction started, a surveying/reconnaissance trip to the Dowlais/ Merthyr area was undertaken with a friend who knew ABOVE: Ex-Brecon and Merthyr 0-6-0ST No. 2181 (B&MR No. 5) arrives with a short mixed freight. The APOC tank to its right appears to be brand new without any oil staining around the manholes. It shares a siding with a Cleobury Mortimer & Ditton Priors Light Railway open wagon loaded with stone. The Welsh sheep are everywhere, eating whatever is available.



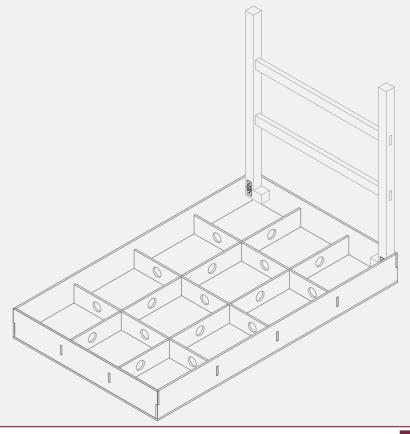
BASEBOARD BASICS

All the boards are constructed to what has become Wolverhampton MRC's standard design, using a good quality 9mm birch plywood for the framing, backscene and running surface. Such quality plywood is becoming more difficult to find and more expensive, but it is worthwhile tracking down as the resulting baseboards seem to last almost forever! The outer framework is two inches deeper than the internal framework to give a two-inch-deep recess into which the legs are folded while being stored or transported (as shown in the attached drawing).

The joints between the different framework members are all made using proper woodworking joints that are glued and pinned/screwed to give a strong mechanical bond. To facilitate the installation of the layout's wiring, several large diameter holes are drilled through each internal framework member.

Blocks of softwood are glued and screwed into each corner of the boards to provide a solid attachment point for the softwood legs. The baseboards each have one pair of legs permanently attached by hinges, the legs being locked into place with triangulating braces using cotter pins inserted into split hinges. A second pair of legs are attached to the 'king board' - again, with cotter pins inserted into split hinges – and the other boards 'piggy back' off this king board.

When the layout is assembled, the baseboards are joined together using 12mm diameter set pins passing through substantial steel plates screwed to the board ends. One plate has a nut welded to it allowing single-handed tightening and the hole in the other plate is ½ in diameter, which gives enough adjustment to enable the track to be aligned by eye.



LAYOUT I EM I MERTHYR RIVERSIDE

the area and the location of much of the remaining B&MR infrastructure acting as guide. Photographs, drawings, sketches and dimensions of the most suitable remaining buildings, structures and other features of the B&MR were taken, along with other buildings typical of the area like chapels and pubs. The buildings on the layout have been largely based on the information gathered on that visit.

The layout was designed to visit exhibitions and was built to be sufficiently robust to withstand the rigour of exhibition life while being reasonably easy and quick to assemble and dismantle. The baseboards have proved to be more than adequate but they did turn out to be a little on the heavy side.

The plain track is formed of C&L moulded base units with EM Gauge Society (EMGS) Code 75 bullhead rail threaded onto C&L track bases. Ordinary C&L track would work just as well, but the EM gauge variety wasn't readily available when 'Merthyr Riverside' was being constructed. The sleeper spacings have been adjusted to represent those of 30ft long rails, which were commonly found on pre-grouping railways, with the sleepers closer together at rail joints – you have to look closely to see the effect. Pointwork was constructed using EMGS plywood timbering onto which C&L individual chairs were 'glued' using Butanone solvent and EMGS rail threaded as before. The points are constructed in the prototype manner, using standard crossings and switches joined by plain

track, and most are individually designed for their specific location.

The track bed is 1/16in thick cork sheet glued to the baseboard. The track is fixed onto the cork using polyurethane varnish, care being taken not to get any near to the point blades.

Ballasting was done with a variety of materials – the 'main line' using a mixture of N gauge limestone ballast and cinders, while the sidings received a mixture of cinders and coloured sand. All ballast is held in place with diluted and dirtied polyurethane varnish, which we find is more resilient than PVA glue and is also waterproof. The track in front of the cattle dock was buried in Polyfilla to represent the prototypical concrete pad.

Point operation uses homemade rotary point motors, which drive a slider beneath the baseboard into which dropper arms soldered to the point blades are connected.

The layout is wired using the common return principle and sectioned for cab control, with two cabs/controllers, some aged AGW controllers being the currently preferred type since they produce a smooth electrical output with no pulses or feedback. This minimises the amount of sparking and helps to keep track and wheels clean.

The layout is split onto five sections, with a few strategically-placed isolating sections, and this arrangement has proved satisfactory to date. The RIGHT: The minister has nipped out for a 'breath of fresh air' while preparing his next, no doubt, very fiery sermon. Level ground is in short supply in the valleys, forcing the chapel to be built on wooden piers. As before, the Welsh sheep get everywhere.

BELOW: A Beames 0-8-4T No. 7948 waits for the fireman to put the headlamp(s) in place before leaving with a short freight. The heavy sky suggests that a storm is on its way.



MERTHYR RIVERSIDE I EM **I** LAYOUT





LAYOUT I EM I MERTHYR RIVERSIDE

THE TRAINS OF 'MERTHYR RIVERSIDE'

The prototype locomotives working around the Merthyr area were mostly from the GWR, B&MR, TVR, RR and L&NWR companies. There are currently 10 locomotives available for use on Merthyr Riverside:-

- GWR 1813 class 0-6-0PT a modified SE Finecast kit on a shortened Comet chassis
- GWR 57xx 0-6-0PT and 56xx 0-6-2T both Mainline bodies on a Comet chassis
- B&MR 36 Class 0-6-2T a modified Nu-Cast kit on a scratch-built chassis
- L&NWR Class G1 0-8-0 (Super D) a Mercian Models kit built by Tony Wright and painted by lan Rathbone
- TVR Class U1 0-6-2T a South Eastern Finecast kit on a scratch-built chassis
- B&MR Kerr Stuart 'Victory' Class 0-6-0T an Agenoria kit
- B&MR 1 Class 0-6-0ST a Redcraft kit built by Tony Wright
- L&NWR 0-8-4T a Brassmasters kit built by Tony Wright and painted by Geoff Haynes
- GWR 2721 Class 0-6-0PT- a detailed and modified Hornby model

The rolling stock is mostly kit-built or modified kit-built, with a few modified/detailed proprietary vehicles and a couple of scratch-built examples.



The ultimate aim, however ambitious, is to have at least one vehicle available for the layout from each company that had vehicles running at the time of grouping, although identifying which companies achieved this feat is not proving as straightforward as expected.

Nevertheless, I have some drawings, sketches and photographs for vehicles from several of the unrepresented companies and just need to build models.



MERTHYR RIVERSIDE I EM I LAYOUT

wiring was designed and installed with tank engine operation in mind, so the arrival of the Super D 0-8-0 tender engine, which is longer than some of the isolation sections, does require a little 'lateral thinking' at times

Good electrical continuity is essential for good/ reliable running, especially in hot, damp and/or dusty exhibition halls, so each piece of rail has its own electrical feed soldered to it. The fishplates/rail joiners merely keep the rail ends in line with each other.

Point motor control is through multi-pole rotary switches, which also change the polarity of their live frogs. The baseboards and control panel are connected together electrically using multi-way leads (15 or 25 way as necessary) fitted with 'D' plugs and sockets. The mains power supply is contained in a purposebuilt earthed metal case, which is located on the floor beneath the layout. The power connection to the control panel only delivers low-voltage electricity – in 'Merthyr Riverside's' case, four separate 16V AC supplies.

The scenic part

There's little height change on 'Merthyr' as station sites are generally level areas. The hillside on which the tin chapel sits and the embankment into the goods yard are constructed using plywood formers covered with chicken wire, over which a layer of glass fibre

woven matting is fixed with polyester resin to provide a strong but lightweight landform. This, in turn, is covered with a layer of 'topsoil' made from a mixture of plaster browning and polyester resin, coloured if required by the addition of powder paint to give a mid to dark brown colour, which prevents dazzling white patches appearing should the scenery get damaged. This mixture is spread in a layer about 2mm thick and, when dry, the grass and vegetation is applied. On 'Merthyr' the basic grass is created from old-fashioned hessian carpet underlay dyed to a variety of subdued shades of green and other vegetation using materials from several commercial manufacturers mixed indiscriminately to achieve the desired result.

The station building and goods shed are derived from those still standing at the site of Dowlais (B&MR) Lloyd Street (later Central) station. I've since discovered that the goods shed should have several skylights extending almost the full length of the roof, so a new roof is required. The bridge crossing the exit road is based on one near Darran and Deri station on the B&MR main line between Bargoed and Pant and the weighbridge house follows a standard 1920s GWR design. It is assumed this is a recently-arrived luxury, as is the new cattle dock. The water tank and crane are modelled on those at Talybont-on-Usk station.

The B&MR, like several other South Wales companies, employed Mackenzie and Holland as their

BELOW: The end of the goods shed with vehicles awaiting their turn to enter. A hand-operated goods crane stands on the short spur between duties. The general sidings to the left are unusually empty, so a train must have just departed.



LAYOUT I EM I MERTHYR RIVERSIDE

signalling engineer/contractor and consequently most of the signals were of the somersault variety. The sole example on the layout is constructed from Model Signal Engineering components and is operated by an electro-magnet driving a pendulum mechanism. When properly adjusted, it replicates the bounce so characteristic of prototype signals when returning to danger.

The delivery and collection of goods to and from 'Merthyr Riverside' is all carried out by traditional horse power, it is assumed that the internal combustion engine has yet to reach the area. The delivery carts currently provided around the layout are from the Langley range – a few more vehicles are awaiting construction.

The other buildings and general clutter are from any number of the proprietary products available or are scratch-built and hopefully located in convincing positions to make the layout look like a working station. The layout is populated with a few station staff, most of whom do not appear to be doing much work. The scene is completed by the obligatory Welsh mountain sheep who seem to get everywhere, including into the Station Master's vegetable garden.

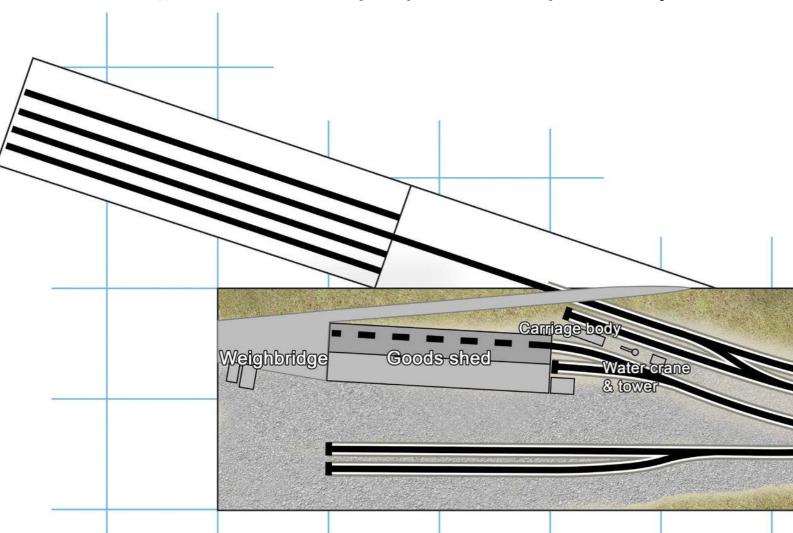
The layout's backscene usually generates more comments than the rest of the scenic work put together. When first exhibited, it resembled a glorious summer's day, with a bright blue sky and an occasional cloud. However, at one of the layout's early appearances at the South Wales Model Show held in Ystrad Rhondda, only just over the hill from its

fictitious home, many comments were received along the lines of "you don't get a sky like that in Merthyr very often – it's usually dull, cloudy and raining", so the blue had to go. I have no artistic skills whatsoever, but I am fortunate that Tony Wright is also member of Wolverhampton MRC, and I was able to persuade him to repaint the back scene. The result is what you can hopefully see in the photographs – a really awful day. It's dull, grey, overcast and just about to start raining – far more in keeping with the area. At a return visit to the South Wales show, compliments were received regarding the realistic effect of the painted sky.

Busy operations

The operation of 'Merthyr' is best described as unscripted shunting. The usual sequence sees a suitable train assembled in the fiddle yard to be driven into the station where the locomotive is uncoupled and retires to the locomotive spur for servicing, while the station pilot (I appreciate it's unlikely that such a small station would enjoy such a luxury, but it adds operational interest) shunts the yard, distributing the incoming vehicles around the various sidings, while also collecting vehicles to form the next departure. When shunting is complete, the train engine leaves the spur and glides onto the front of the train and, after the signal falls, departs. Meanwhile, the station pilot retires to the locomotive spur to await the next bout of activity. A single train can take between 20 minutes and an hour to shunt depending on its make-up and the personal preferences of the current operator.

RIGHT: Brecon and Merthyr No. 33, a Kerr Stuart 'Victory' Class 0-6-0T, has arrived with the short freight. The fireman has already removed the headlamp ready to pull forwards before retiring to the locomotive servicing siding.



The GWR 1813 Class usually fulfils the role of station pilot and has a typical GWR shunters' truck semi-permanently coupled, which has additional electrical pick-ups fitted to provide more reliable running and shunting.

Sprat and Winkle couplings, from Model Signal Engineering, are used on 'Merthyr' to achieve 'hands free' shunting. The 3mm Mk. 1 variety was chosen as they are smaller and less obtrusive than the 4mm variety and do not need mutilation of vehicle buffer beams. The couplings have proved very reliable as long as they are properly installed and adjusted but, in practice, they are reasonably forgiving and have required only very occasional attention. Uncoupling is actuated by permanent magnets buried beneath the track at strategic locations around the layout, although, at times, vehicles of different lengths make realistic shunting quite challenging.

'Merthyr' may not be everyone's 'cup of tea' but it appears to be popular with many exhibition managers and visitors, proving to be the catalyst for numerous discussions/conversations on a wide variety of subjects, some even railway related. To date, it has appeared at 44 exhibitions.

I'd like to thank my fellow Wolverhampton club members for their help during its construction, the regular members of the operating team and other friends and modellers who have generously provided information, encouragement and inspiration.

ABOUT THE MODELLER

Name: Rob Kinsey

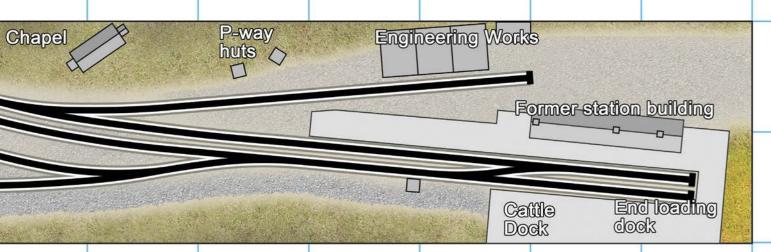
How many years modelling: 50 years

Name of your first layout: 'Merthyr Riverside', although I have

helped build several other club layouts/projects **Favourite era/region:** Pre-grouping in South Wales **Favourite locomotive:** I don't really have one

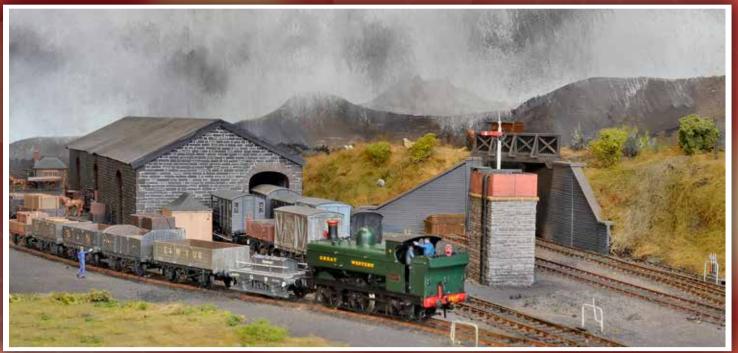
I've been interested in model railways since receiving a Hornby Dublo train set for Christmas many years ago, but unlike most other children, I never grew out of the hobby. My principal interest soon became the Great Western Railway (GWR) but while most modellers who follow the GWR route seem to concentrate on sunny Devon and Cornwall, my preferences lay in the Carmarthenshire and Pembrokeshire areas of West Wales. There may not have been as many prestigious named expresses, but there was a surprisingly wide variety of traffic and rolling stock in the area – ideal for an interesting model. However, as with most things in model railways, there was a drawback and in this case it was the modeller's usual enemy - lack of space. A convincing model would need at least 25ft, ideally 30, but the most I had available was 11ft. It soon became apparent that the only way I could enjoy running main line trains on a large layout was to join a club.





BRITISH RAILWAY MODELLING BRITISH RAILWAY MO

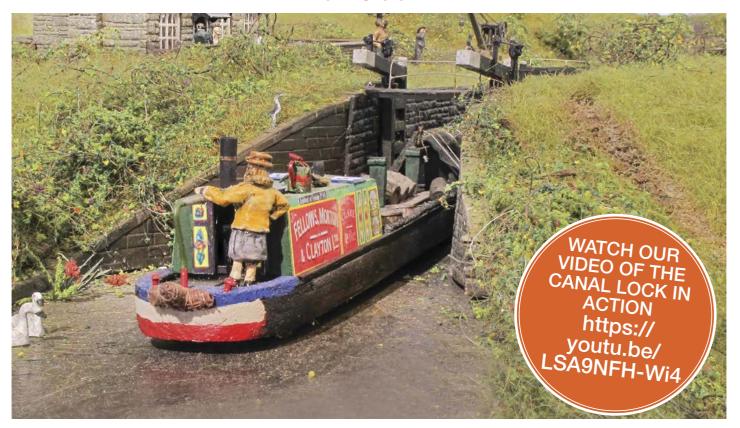




BUILDING A WORKING CANAL LOCK

Pushing the boundaries of what can and can't be modelled ever further, lan Smith shares the mechanism behind this automated cameo.

Words & photography: Ian Smith



anal scenes feature on many layouts, but when locks are included, they are usually modelled fixed in a particular state of operation. Wouldn't it be good to have a canal boat enter an empty lock, see the gates close, the lock fill and the boat emerge at the top? Maybe then reverse the process for the journey down? Better yet, the paddles that control the flow of water in and out of the lock chamber could be seen to move at the right times. I've never seen this done before – here is my attempt.

First step, as always, is choosing a suitable prototype. Depending on canal location and date, locks may be broad or narrow. Broad locks are about 14ft wide, able to accommodate a barge or two

narrowboats, and range from about 57ft up to 70ft, or more, in length. Narrow locks are more uniform, being typically 7ft wide and 70-72ft long. The change in height can range from a few inches to 19ft, with 6-7ft being fairly typical. Broad locks would allow more room for the mechanisms, but I love the look of narrow locks, so this was my choice.

The design of narrow locks varies by canal company, but individual locks can still display enormous variation in their layout. A common design has a single top gate with two lower gates, but there can be single or double gates at either end. Similarly, the paddle mechanisms which allow water into and out of the lock are often ground-mounted at the top end

and placed on the gates at the lower end, but virtually any permutation is possible, including both gate and ground paddles, especially at the top end. Fortunately, we still have a vibrant canal network using historic equipment, so prototype material abounds!

The narrowboat

I wanted my narrowboat to be able to enter and leave the lock chamber. Due to space consideration, it can actually only get about halfway out at each end, but this meant that steering was not a problem. My first thought was to pull the model with a thread or magnet, but I couldn't think of a way of making the mechanism follow the rising lock without being visible within the

READER MODELLING

empty lock chamber. The boat would have to be self-propelled. The starting point was a balsa wood kit from Craftline. These are inexpensive and easily obtained. I built the basic hull as described in the kit, but the boatman's cabin was fabricated from plastic card, using the kit as a template. The basis of the mechanism was a delightful slowspeed reduction motor with an output gear set at 90 degrees, obtained from Ebay. At the time of writing, the exact same item is unavailable, but has been replaced by something very similar looking. While advertised as 3-6V, it works very well on just a single AAA battery, which sits in a Plastikard box under the boatman's cabin. The motor drives a secondary shaft, which then drives a small wheel with a rubber tyre. The wheel and gears were taken from an old battery-operated racing car toy and are mounted on a small brass base which is set into the front of the balsa hull. Once the cratch and roof board were fitted, the motor and battery were connected via a small latching reed switch, mounted under the roof board. Passing a small magnet over the top turns the drive on and off. The whole mechanism is hidden by the canvas cover, which was made from a crumpled paper wagon tarpaulin from Smiths (no relation), which also hides some lead to help adhesion. For added interest, the middle part of the narrowboat was scooped out to allow for a load of barrels.

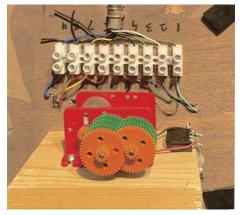
The lock chamber

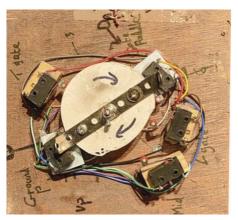
The basis of the lock mechanism is a scissors drive constructed from some Meccano-like pieces, salvaged from a child's toy. These were secured with nuts and bolts and, once the movement was suitably free, the ends of the bolts were flattened to prevent the nuts coming loose. A captive M4 nut opens and closes the scissors as a threaded rod (DIY shop) rotates. The rod is connected to the output shaft of a Tamiya motor and gearbox by a piece of electrical insulation. Microswitches limit the extent of movement to your desired lock height and each is bridged by a diode, so simply reversing the polarity causes the unit to move from one extreme to the other. During construction, I inadvertently bent the rod slightly, which imparts a slight 'bobbling' movement as the lock rises and falls, rather nicely mimicking the real thing.

The mechanism obviously has to fit within the width of the lock chamber (30mm or just less), but the exact size of

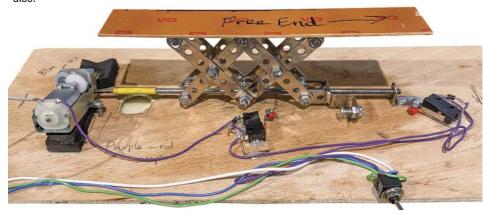


The drive unit is set into the balsa hull so that the wheel protrudes a couple of mms below the base. A small roller at the far end of the boat reduces friction and allows the boat to crawl along, aided by weight over the motor. The battery is beneath the detailed, but unpainted cabin. Connecting wires run in a channel underneath.





The drive (L) and switch sides (R) of the sequencer mechanism. Four of the microswitches are operated by the white disc and control the gates and paddles. The bottom right switch is operated by the metal bar and stops the sequencer midway and also starts the lock filling or emptying. The two switches which stop everything at the end of each sequence are under the



The lock mechanism is built on a plywood base, the circular cutout allowing access to the coupling sleeve at a later date. One end of the rising plate is hinged to the scissors mechanism, the other end floats free as the scissors open and close. The plate is substantially shorter than the lock chamber.

the rising 'water' is determined by the final dimensions of the cosmetic lock chamber. I, therefore, built a plate that rises and falls with the lock, onto which the final lock surface could be placed later. The lock chamber was built using Wills random stone sheets (brick is an alternative for some locks), incorporating recesses for the bottom gates to open into. A further recess, one sheet thick, was made for the ladder part way down one side.

The lock gates

The gates were again based on a Craftline kit. Brass rods were inserted into the top and bottom of the gate posts to act as

pivots. Those at the bottom extend well below the gate to allow for operation, those at the top have brass tube collars, which fit within the cast hinge straps from the kit. The top gate needs to be cut in two so that only the part above the upper waterline moves, the lower part being fixed, forming the end of the empty lock. A real lock has a protruding sill on which the top gate rests. I could not think how to model this without impeding movement, so just put plain stone below the upper gate; the omission is not really noticeable in the dark, deep and narrow empty chamber.

The kit also supplies four very nice cast paddle capstans. To make these

READER MODELLING

operational, I cut off the cast ratchets and then drilled a hole down through the remaining casting, large enough to accommodate a 0.040in square plastic rod. One end of these rods was drilled to take a brass operating wire and the rest of the rod was filed with notches to simulate the ratchet. The length was then set to allow a suitable amount of rod to show in the raised position; if you are happy with ground paddles, that is it, but I wanted gate paddles at the lower end. Cutting and filing the flared parts of the castings produced a fair representation of the gate paddles, with the rest of the mechanism fabricated from wire and plastic. Operation is a little more complex, as the ratchets need to rise with the gates closed but lower with the gates open. The wire from the plastic ratchet was (prototypically) taken down the inside of the lock gates. Just before the waterline, it was soldered to a right-angled wire running in a slot cut into the pivot tube.

Movement of the gates and paddles is achieved with servos. In theory, seven are needed, three for the gates and four for the paddles. I chose servo controllers from Heathcote Electronics (but many others are available). As each module can control two servos, I decided to economise and operate both gate paddles from a single servo, reducing the total required to six. The ground paddle wires simply loop into the servo arms, with the limits of travel set appropriately. The upper gate is moved by a crank, which is fixed to the gate pivot using part of the metal core from a 'chocolate block' wire connector. At the lower end, the servo arm moves the gates by running between a pair of wire arms soldered to a chocolate block core and fixed to the pivot tube. This mechanism intentionally makes the gate movement a bit less smooth, but also allows the drive to disengage if the gate should snag. To operate the gate paddles, a slotted bar links the two operating wires, sandwiched between pairs of 'chocolate block' connectors. The servo raises the bar, and hence the paddles. The slot allows rotation, so the paddles can move with gates open or shut. The servo controllers are mounted on the lock base under a removable section of scenery.

The Heathcote Electronics modules allow one servo to start a second one moving when the first reaches its limit of travel and this can be used to operate paddles and gates sequentially. However, a strange quirk of the electronics means that when power is first applied, the second servo



With the lower pair of servo-operated lock gates open, the motorised boat heads into the lock.



initially jumps to its on position before returning slowly to its off position. While this is acceptable for the ground paddles, it would cause terrible damage if the lower gate tried to open with the lock chamber raised (the gates open inwards to resist water pressure), so the first gate servo also operates a small slider switch, which causes the second gate to start moving.

Final assembly

The bottom gates were mounted on a subassembly that was 'V'-shaped to match the closed position of the gates. The 'V' extended a few millimetres beyond the gates to protect the paddle operating mechanism. Beneath this was fixed a small protruding platform on which the moving lock chamber floor rests in the empty position. The lock walls were fixed to this sub-base and assembled around the scissors mechanism. Now that the overall size and shape were fixed, the moving lock floor could be constructed.

After some experimentation, this was made from a sheet of copper-clad

READER MODELLING

Paxolin, as this resisted warping well. This is essentially a rectangle, but has small extensions at the lower end to fill the recesses occupied by the open lock gates. The lower end was also 'V'-shaped to match the closed gates. The underside of this 'V' and the matching sub-base was tapered to guide the descending floor into place. Two short sides (made from copper-clad sleeper strip) were soldered underneath to aid rigidity and to help the unit glide over the lock sides. This floor simply sits on top of the plate on the scissors unit and can be removed for maintenance. Finally, the lock mechanism was raised and the top gate and upper lock surface were set to match this height. Small stop blocks prevented the lock floor from rising above this height. The lock can now be set into the scenery, preferably including removable sections to facilitate repairs and maintenance. Ideally, the spill weir, which allows water to bypass the lock, should also be modelled; fortunately, these were often underground in culverts, with only the entrance visable.

Operating the sequence

Going from empty, the narrowboat enters the lock, the lower gates close, the ground paddles raise, the lock fills, the top gate opens, the boat exits the lock and the ground paddles close. As my boat only half leaves, the final step of the gate closing again is omitted. Going down, the boat enters the lock, top gate closes, gate paddles open, lock empties, bottom gates open, boat exits, gate paddles close. Because of the paddles, the down sequence is not a simple reverse of the up. There are, I think, three solutions to this. Simplest is to not make the paddles work; if this is the case, the sequence is a simple reverse. However, the paddles are a nice refinement and show how a real lock works. Second is to operate each part of the mechanism with separate switches and run the sequence manually. There would need to be an interlock to prevent the lower gates from opening with the lock full.

Any other errors would look odd, but would not cause damage. My preference was to operate everything with a single switch, so the final step was to devise a mechanical sequencer. This comprises a multi-geared motor driving a slowly rotating plastic disk. The disk has a cut-out, which opens and closes four microswitches to operate the top and bottom gate and paddle servos in the correct sequence.

Another arm operates two further microswitches which stop the sequencer rotating and start the lock chamber moving. A final bar works a seventh switch to stop everything at the end of the sequence. Half a rotation of the sequencer takes the boat from the bottom to the top of the lock, the other half takes it back down. As both lock chamber and sequencer motors work on 3V, a single reversing switch can be used to operate the whole sequence. However, as the lock motor runs in both directions but the sequencer always rotates the same way, its motor is fed via a bridge rectifier. I haven't included a wiring diagram, because I'm sure there must be a better way of doing everything, but, hopefully, there is enough detail if that is not the case.



From its lowest point, the water level is raised by means of the scissor jack mechanism shown on Page 79.



Once raised to the level of the upper canal section, the water level mechanism stops, allowing the single top gate of the lock to be opened.



Once the gate is fully open, the motor in the boat is switched on by means of a magnetic wand.

WORLD OF RAILWAYS TV

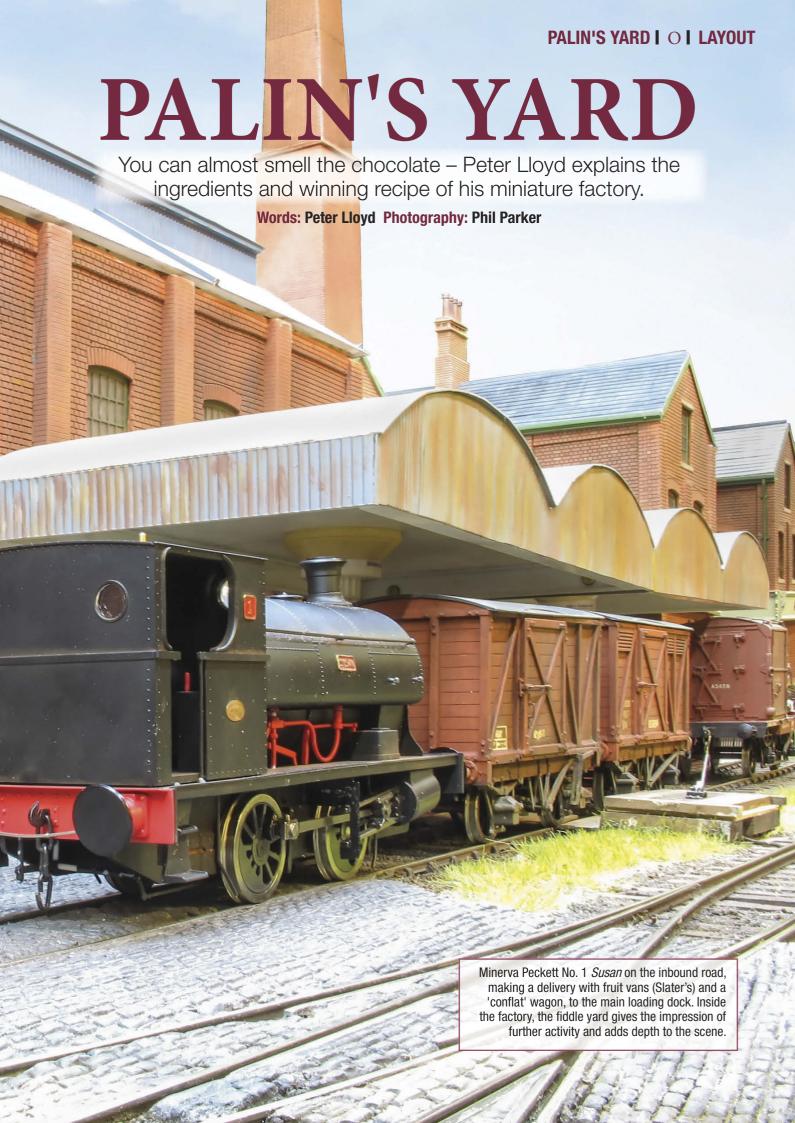
A working canal lock by Ian Smith

Pushing the boundaries of what can and can't be modelled ever further, lan Smith shares the mechanism behind this automated cameo.

WATCH THE VIDEOS HERE (You must have a wifi connection to stream video content)







LAYOUT I O I PALIN'S YARD

he illustrations in the Wild Swan book, by Gordon Gravett, were what drew me into this project. That, and the compact nature of the layout, meant it was ideal as a test bed for a more ambitious layout, for which I had built boards, based more directly on Cadbury's.

Having taken nearly three years to build this layout, reality kicked in, and I realised that there weren't enough years left in me to create a much bigger layout that would need a small van to carry around.

For this project, I also wanted to test out the concept of using lightweight internal flush doors as baseboards, as I had a pair of 2ft wide doors lying

They have proved to have pros and cons, saving the time and effort of making boards, being very lightweight and stable. However, they do restrict point motor choices, and mean all wiring has to be mounted above the boards.

By placing the layout in front of the fiddleyard, and using a turntable to connect the two, you can effectively compress the layout by 50%. Similarly, the use of a three-way point provides a significant space

The other innovation that saved hours of work was to use a folding ladder as a baseboard support system, which supports the layout and lighting rig. It's lightweight, quick to erect, and very stable.

The layout is based on a design published in An Introduction to 7mm Modelling Vol 2, by Gordon Gravett. It proves that you can get a realistic and operationally interesting O gauge layout in a small footprint.

Growing up around Cadbury's at Bournville, and having around 200 photographs of the rail system in the 1950 and '60s, it was always going to be set in this period. Although the layout was pretty much defined by the original Gordon Gravett drawings, the photographs were used to get the feel of the era, and pick up the small details that give authenticity.

Production challenges

I only have a small bedroom in which to model, but it did allow the layout to be built and used other than just at exhibitions. It also folded away to a 4ft x 1ft x 2ft box, with the buildings stored in the loft.

With buildings or walls to the rear and turntable end, I was faced with the problem of resolving the other end, where a road and footpath ran. After much thought, I decided to cheat and put in a mirror. This provided a number of benefits; it meant I only had to model half the road, a valuable space saving when you only have 8ft of board, and it also gives an impression that the layout is twice the length it really is. A further benefit is that it allows the operator, at the other end, to see traffic entering and leaving the layout to the

Having solved one problem with the use of mirrors at the end of the layout, I realised I had created a couple more. Firstly, finding a suitable material. Glass was too fragile, and glass and Perspex have a depth of







clear material in front of the mirrored surface, which leads to a large gap showing. Eventually, I found 1mm thick polished stainless steel, which has proved ideal.

The second problem was that any lettering on the buildings and chimney would appear in reverse, leaving me with a limited choice of letters to name the business, and the name also had to be a palindrome, reading the same backwards as forwards. I eventually settled on Mattam, and this also dictated the layout name of Palin's Yard.

Busy operations

It might be thought that traffic and operations on such a small layout would be restrictive, but my studies of Cadbury's rail system have indicated anything from a pile driver on a well wagon to an excursion train from the main line, can be found on such systems.

For exhibition running, I have a few locomotives running at any time, bringing goods in and out of the loading bays, and coal into the tippler outside the boiler house. Typical loads can be timber, for packing cases, building materials and plant for the factory, coal, and vans carrying fruit, nuts, beans and milk.

Motive power is provided by a mix of kit-built and RTR 0-4-0Ts. The Pecketts are from Minerva, one of the Fowlers is an ABS kit, and the other by Ixion, purchased from Paul Chetter, who has provided the

sound files for all the locomotives. The two Fowler locomotives are named Gordon and Maggie, after Gordon Gravett and his wife.

Because of the tight radii and restricted size of the layout, goods traffic is all four-wheeled wagons and vans, again a mixture of RTR, scratch- and kit-built. Dapol seven-plank wagons provide the coal traffic for the wagon tippler, and Parkside and Slater's vans are the mainstay of the goods in and out. Sprat & Winkle couplings are fitted to all stock, to allow automatic uncoupling, with magnets strategically placed.

The use of RTR locomotives and stock have proved great time savers; not only are they well-detailed and reliable, they are surprisingly robust. Driving a Minerva Peckett off the turntable onto a concrete floor 3ft below proved that! One broken step, a broken buffer, and a bit of valve gear straightening was all that was required to see it in action the next day.

Getting creative

Although the layout is relatively simple, a chance experiment gave me the opportunity to add more interest. I had seen wagon tipplers on layouts before, but hadn't really understood how they worked, so I built one purely as a modelling exercise. It was only when it was finished that I realised I could incorporate it into the layout. Putting it in front of what was to

ABOVE: The two Fowler locomotives are named after layout designer Gordon and his wife Maggie. In the background, the effectiveness of the mirror can be seen, lengthening the apparent size of the layout, which actually finishes at the first lamp post.



The working wagon tippler provided an interesting challenge. It exists to deliver coal to the factory boiler house, and provides a valuable source of additional traffic. The greatest challenge was keeping coal out of the mechanism. In the background, locomotives refuel while waiting for the coal to be unloaded.



The window cleaner has his work cut out in this environment, and with a mirror in the road, he has twice the work. Interior details are illuminated low-relief boxes lined with suitable photographs. Small details like the notices and the telephone bell are time-consuming on a layout like this.





become the boiler house gives a useful source of traffic, as well as a talking point at exhibitions. Coal is tipped into a container below the board, and emptied out on a regular basis.

The layout is DCC-controlled with sound-fitted locomotives. I have used ZTC equipment until recently, but a change to MERG equipment is now in progress for the next layout. Point operation started with servos, then changed to Minx Microdrives, both driven by the constraint of the internal door baseboards. Building lighting and the tippler are controlled by a collection of low-cost eBay buck regulators and timers.

Because the buildings and backscenes effectively form a wall around three sides of the layout, operation is from the front left of the layout, with access through the backscene to operate the turntable. A custom-built switch panel, on a wander lead, enables point and tippler operation.

Creating the scene

The buildings are all scratch-built, using a mixture of plastic sheet on foam board, and resin-cast panels from my own moulds. Windows are etched brass.

All buildings except the ground floors of the office and plant room are removable for transport, and fit into purpose-made trays in large plastic boxes.

Half-relief buildings have shallow boxes behind the windows with appropriate pictures of building interiors, and lighting on random timers in some

Industrial buildings are used to cloak all of the off-scene workings, and provide ample opportunity to disguise the exit route for traffic.

There is little room for scenery on a layout this small, though the opportunity to put an additional siding on the layout was resisted, to allow for the access road and a grassed area along the front. The cobbled area to the loading dock was made from Das modelling clay, hand-scribed, and the grassed area is a mixture of Noch fibres.

To break up the monotony of the grassed area, an electric sub-station was installed, based around one of the excellent transformers from Duncan Models.

Future projects

One of the greatest advantages of being in a railway club, and visiting exhibitions, is that you meet people who freely pass on knowledge, and help. The artwork for the etches for the windows were produced for me by a fellow club member, as was tuition on weathering by the late Mick Bonwick, another club member.

Another long-term interest has been the quirky PPM tram vehicle and its successors, the Class 139s,

BOTTOM LEFT:

Fencing for the substation is made from brass etches and cast white metal posts. Putting features such as this on top of, or close to, the baseboard joint helps disguise the straight line. Weathering to buildings and locomotives is mainly done with weathering powders.

of the challenges on the layout was to hide the exit to the turntable at the end of the layout. A combination of masking from above with a link corridor between buildings, and a pipework gantry from the

front, meant that

BOTTOM RIGHT: One

LAYOUT I O I PALIN'S YARD

which run on the Stourbridge Town to Stourbridge Junction line; these are to form the basis for my next layout, 'Stourbridge Town Station'.

Although only a single line platform, it gives me the opportunity to accurately model a modern station in O gauge with no compromise whatsoever, and to create a station building that's brick perfect. The whole station and its pedestrian approach fits on a 5ft baseboard, without any need for compression.

The trams have now reached the stage where 3D-printed ends and roof, resin-cast floor and skirts, etched brass sides, and clear Perspex bodies, are all produced, and are ready to be assembled. Tim Horn baseboards are built, and I'm just getting ready to start laying track.

There are a number of lessons I have learned from this layout; perhaps the most important is to get on and build. If I had started my Cadbury layout 20 years ago, instead of 10, it might have been finished.

The other lesson is to stick with well-established systems wherever possible, particularly with control systems. ZTC controllers and Minx Microdrives either changed hands or became unobtainable, or both during the build. This sort of thing can cause major upset if you have to rip out scenery to replace a system halfway through a build.

More importantly, I find it's good to look outside the model railway world for ideas. Extensive use was made of the self-adhesive LED lighting strips for the lighting rig, and the stainless steel mirror was a result of looking at industrial catering materials. Always keep an eye out for useful ideas and materials outside the hobby.

ABOUT THE MODELLER

Name: Peter Lloyd

Age: 72

How many years modelling: 60+ Name of your first layout: 1974,

'Hazelwyche', an 8ft x 6ft 'U'-shaped OO GWR branch line that fitted in a Mini, (if you took the passenger seat out!)

Favourite era/region: '50s/'60s Midland/

Western

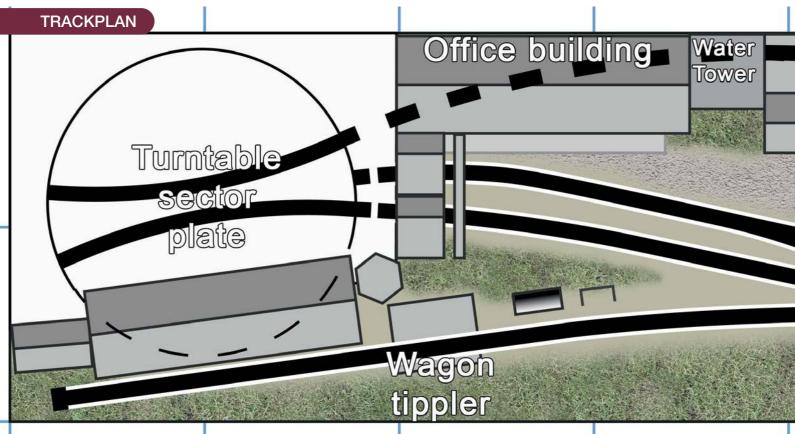
Favourite locomotive: Midland Pullman

Born and brought up within the smell of Cadbury's Bournville factory, I have studied the rail system within the factory for over 30 years. I now live in Worcestershire, but continue to have a soft spot for industrial locomotives.

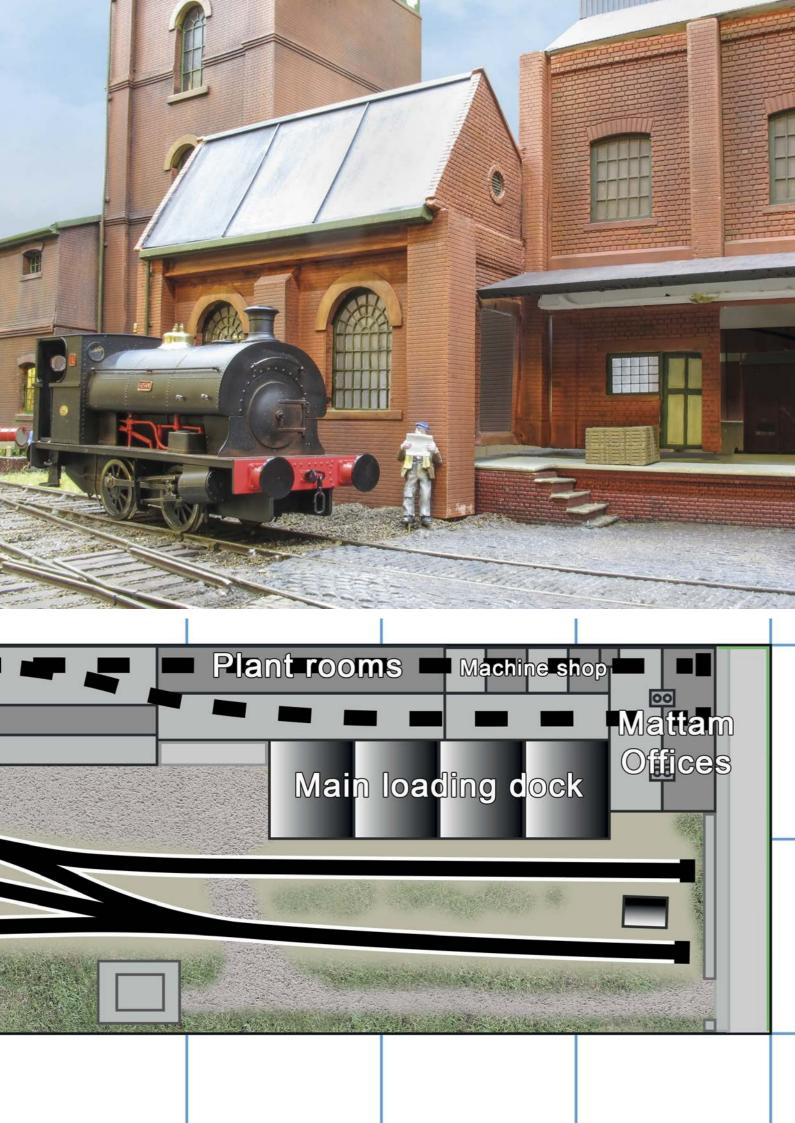
Having modelled in TT and OO in my youth, I scaled up to 7mm:1ft in my mid-20s, and still enjoy scratch-building, though modern RTR offerings increasingly provide better and more reliable models than I could ever produce.

To satisfy the desire to see full-length O gauge trains running, I have also been working on the Leamington and Warwick MRS layout 'Kimble' for almost 20 years. At 16ft x 40ft, it provides the opportunity to give stock a good run.

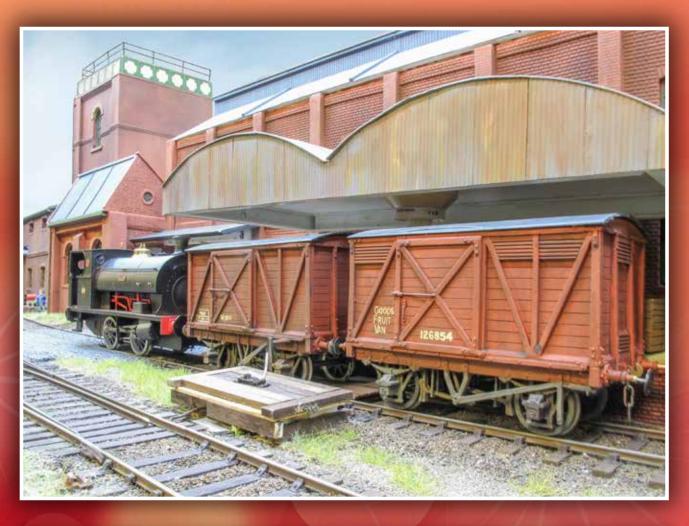
RIGHT: By the dispatch office, the vans in the fiddle yard give the impression of being unloaded inside the factory, adding depth to the scene. While the buildings are a varied mix of resin and plaster casings, together with embossed Plastikard, painting and weathering them all at the same time blends them together.

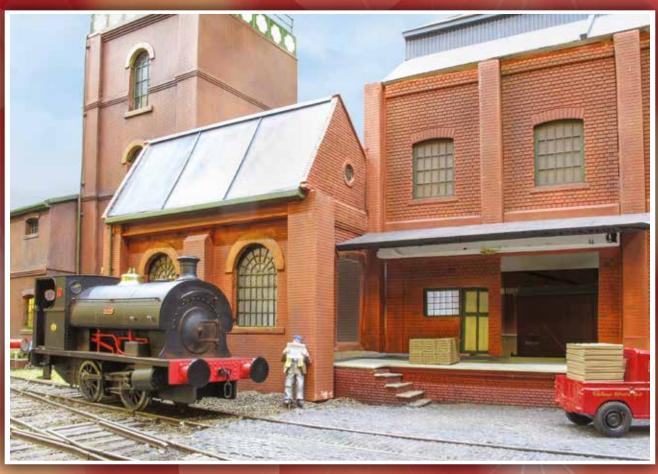


1 square = 1 square foot



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RAPIDO T



t has been a busy few weeks for product announcements and news headlines in the model railway world. One of the biggest shocks this month was the news that Simon Kohler is heading for pastures new. Always a great advocate for BRM and a font of knowledge when it came to Hornby's

history, Simon will be greatly missed, and we wish him the best of luck - you can find out more about what the future has in store for him in our interview on page 100.

Bachmann also made its summer announcements, the largest offering of new products via a single British Railway Announcements to date, a summary of which you can find below.

Want to get the latest news delivered each week to your inbox? Make sure you sign up to the World of Railways weekly newsletter at https://www.world-of-railways.co.uk/ account/register/.

Class 70 returns to Bachmann range

Bachmann revealed its latest collection of new products with the launch of the Summer 2023 British Railway Announcements last month. The Summer Collection showcases new models in N, OO and O scale, all of which are scheduled for release in the coming months.

One of the key headlines was the return of the Class 70 as 70811 in Colas Railfreight livery, which will be available with or without sound fitted, priced at £249.95 and £349.95 respectively.

Other news includes Bachmann Branchline's Class 20/0 returning in BR green, BR blue and BR Railfreight red stripe liveries, plus the extensive suite of tooling for the new Branchline Class 37 continues to be showcased, with two further examples joining the range.



Exclusive J94 Austerity in O

Rails of Sheffield has announced a new J94 Austerity 'Warrington' WD150 in War Department Green is to be released.

Manufactured by Dapol, the new Rails of Sheffield exclusive follows other O Gauge J94 Steam Tank Locomotives to be released by Dapol to be available DCC-Ready, DCC Fitted and with DCC Sound.

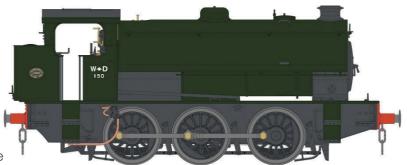
Prices are as follows:

DCC-Ready - £269.95, DCC Fitted - £299.95, DCC Sound - £399.95

Available to pre-order now, the new model is expected to arrive before the end of the year.

Key features:

- Firebox glow
- Five pole skew wound motor with flywheel vertically mounted in the firebox
- Slide in PCB accessed through the hinged smokebox door
- DCC Ready with 21-pin DCC decoder socket
- Plunger pick-ups from all six driving wheels
- Diecast chassis, footplate and coupling rods
- Sprung centre driving wheel to improve electrical pick up
- One-piece diecast saddle tank
- Diecast driving wheels with turned metal-plated tyres
- Fully working inside motion
- Sprung buffers and 3-link couplings
- Two cab and bunker variations
- Full cab details
- Cab roof removable, secured by two magnets
- Two separate chimney versions
- Scale metal handrails
- Opening/posable cab doors
- "Warrington" etched nameplates will be supplied in the





EFE Rail enters 7mm:1ft scale market

"Toe dipped into new market", says manufacturer, as Class 15 diesel promised for 'O' alongside new additions to EFE Rail range.

One of British Railway's Pilot Scheme designs, 44 of these Type 1 Diesels were built by the Yorkshire Engine Company and the Clayton Equipment company to a British Thompson-Houston design.

Eight models will be available from EFE Rail, all wearing BR green livery like the prototypes, but with variations including all-over green with or without numbers on the nose ends, with the addition of small yellow warning panels, or with full yellow ends.

- E84701 Class 15 D8201 BR Green (Late Crest) £369.95
- E84702 Class 15 D8215 BR Green (Late Crest) £369.95
- E84703 Class 15 D8200 BR Green (Late Crest) £369.95
- E84704 Class 15 D8204 BR Green (Late Crest) £369.95
- E84705 Class 15 D8234 BR Green (Small Yellow Panels) £369.95
- E84706 Class 15 D8219 BR Green (Small Yellow Panels) £369.95
- E84707 Class 15 D8235 BR Green (Full Yellow Ends) £369.95
- E84708 Class 15 D8239 BR Green (Full Yellow Ends) £369.95



Rails of Sheffield announces exclusive GWR Q13 Inspection Saloon in OO

Produced by Dapol's premium Black Label brand, the new model will be available exclusively from Rails of Sheffield.

Available to pre-order now with a £20 deposit, the first samples are due any day, deco samples are due in November, and delivery is expected in June 2024. There will be six liveries available initially;

- BR WR Chocolate & Cream, Double Lined - W 80943
- BR WR Chocolate & Cream, SYP W 80976 W
- BR Blue & Grey, Full Yellow End ADW 80970
- BR Executive DW 80975
- BR Scotrail DW 80975
- GWR Chocolate & Cream, Twin Cities Crest - 80972

Top-class quality and highly detailed features are expected.

Priced at £149.95, Rails of Sheffield expects demand to be high for this new model, head to www.railsofsheffield.com for more information.



WOR THIS MONTH

Visit www.world-ofrailways.co.uk to enjoy the following videos, interviews and features:



VIDEO: Appearing in the June 2023 issue of BRM, we couldn't resist a quick play with Hornby's new diecast bodied 4-6-2 locomotive on Tony Wright's 'Little Bytham' layout.



As featured in the November 2022 issue of BRM, we take a trip to York Station by Giles Baxter, whose work-in-progress layout features an incredible model of the iconic station and the York Station Hotel.



After more than 40 years of service, Simon Kohler is to leave Hornby at the end of May. As he prepares for pastures new, our exclusive video interview, as well as the Q&A on the next page, shares what he has in store in the next chapter.



HORNBY: EXCLUSIVE INTERVIEW

Simon Kohler, Marketing and Product Development Director at Hornby, left the company at the end of May. The surprise announcement came after 40 years working for the company. Having started as an area sales representative in 1978 for the renowned Watford-based transformer and controller company, Hammant & Morgan, a recent Hornby acquisition at the time, Simon moved to Hornby's Margate office in 1982, and took up the position of Hornby Railways Brand Manager.

Over the years, he adapted to many changes at Hornby and, for several years, was responsible for the Marketing of both Hornby and Scalextric. In 2014, Simon left Hornby, only to be called back in 2017. This second stint saw the company invest in people and introduce innovative product designs, which in turn saw Hornby's fortunes change for the better.

Following his departure, Simon Kohler has reopened his models & hobbies consultancy business, KohlerComs, which he mothballed when called back to Hornby in 2017 to help reverse the company's fortunes.

Howard – Will you miss Hornby? **Simon** – Yes! Of course I will, it has been my life for well over 40 years and I care for the people who make up the beating heart of Hornby. I was called back to Hornby to do a job, which I have done with the help of both Lyndon Davies, Tim Mulhall and all at Hornby, both new and old.

However, for me, it is once again a new beginning and a chance to work outside of the Hornby bubble and put my experience and knowledge to good use through my KohlerComs consultancy business.

H – What are your five favourite memories from working at Hornby?

- **S –** 1. I suppose the first was travelling back from my final and successful interview for the H&M area manager position aka Representative. I drove from Watford to Sunderland (I was on holiday there) absolutely elated. Who knew what that final interview would lead to. I was 28 at the time!
- 2. Live Steam amazing from start to finish. So many stories attached to this remarkable product range.
- 3: Hornby Centenary. Compiling all the various products from each decade and receiving a round of applause when I presented the range to those from the model press. This included the relaunch of Hornby Dublo and a long-range plan for the future of the brand.
- 4: Hornby TT:120. The culmination of something that I had been convinced about for the best part of 20 years.
- 5: Flying Scotsman Centenary: The creation of the Centenary range. Negotiating to be the main sponsor of the Flying Scotsman Centenary underlining





mine and Hornby's commitment to the NRM/Science Museum.

H – What services will KohlerComs offer? **S** – Product development, copywriting, catalogue creation, pack design, marketing and market research. I am genuinely looking forward to new challenges, new experiences and new clients. Onwards and upwards!'

Don't miss more of our exclusive interview with Simon on World of Railways as he shares his plans for the future.



Accurascale to sponsor 'Making Tracks III'

Accurascale is to sponsor 'Making Tracks III'. The exhibition layout is to be Pete Waterman and the Railnuts team's latest creation in the series, to be on display at Chester Cathedral from July 26 – September 2, 2023, and promising to be "bigger and better than ever before".

The all-new 64ft long layout is based on Milton Keynes station on the WCML, and will feature 18ft long platforms and bi-directional running lines, like the prototype.

'Making Tracks' started as a celebration of Thomas Brassey – a civil engineer responsible for building much of the world's railways in the 19th century who has a dedicated chapel within Chester Cathedral. It aimed to raise funds for the upkeep of this beautiful cathedral and has successfully done so over the past two years. 'Making Tracks' was also aimed at bringing new people into the hobby and, with around 50,000 visitors to the exhibition each year to date, it's proving to do just that.



DCC Concepts partners with West Hill Wagon Works for new range

DCC Concepts and West Hill Wagon Works have created a new selection of post-2008 era platform furniture for 4mm:1ft scale. The new items have been made possible thanks to DCC Concepts' modern Legacy Lighting range, and West Hill Wagon Works' printed accessory range, combining them into products, and available to purchase from both manufacturers, and soon from DCC Concepts' stockists. The new line of products is as follows:

- (DML-CTP) Modern Station CCTV Cameras (Hand Painted) 4x CCTV Posts with cameras 3x Right-facing wall cameras 3x Left-facing wall cameras: £19.95
- (DML-CTK) Modern Station CCTV Cameras (Kit) 4x CCTV Camera bases, stainless steel posts & top-mounted cameras 3x Right-facing wall cameras 3x Left-facing wall cameras: £13.95
- (DML-PSP) Modern Station Passenger Information Screens (Hand Painted) 4x Overhead information screens 2x Large overhead screens: £19.95
- (DML-PSK) Modern Station Passenger Information Screens (Kit) 4x Overhead information screens 2x Large overhead screens 10x Pre-printed stickers: £13.95
- (DML-MPS) Modern Station Platform Signs (Value Pack) 16x Large platform signs 16x Small car stop signs 5x Multi-car stop signs 6x Multiple working car stop signs:
- (DML-MSR) Modern Station Railings (54.8cm) four 137mm railing lengths, total length 548mm: £9.95





Revolution Trains: 'tankers' and 'boxes' to return

Revolution Trains is to produce a second run of its award-winning MMA/JNA box wagons and TEA tankers in OO gauge, 1:76.2 scale.

Both can be pre-ordered from Revolution now, or will be available from selected retailers in due course.

The tankers are as previously tooled in the most popular original liveries and some new ones. The box wagons are in the most popular original liveries, but with some new tooling undertaken to enable Revolution to offer the latest Network Rail and stone traffic versions that have entered service since the original models were produced.

The TEA tank wagons were Revolution's first OO gauge model release in 2018. Its new models are promising to feature different running numbers to those in the original production. It is also planned to offer them singly rather than in multi-packs, to give its customers flexibility, following feedback. Revolution has kept the MSRP at £48.95 per wagon. The following new box wagon liveries are promised:

- Wascosa/Network Rail
- Cappagh/VTG
- Touax
- GBRf/Ermewa

Prices have yet to be confirmed, Revolution Trains adding, "If possible [we] will keep prices at the same level as 2019."



We are aware of cost-of-living pressures and have worked very hard to keep prices down – the tankers have the same MSRP as they did five years ago. Please note: the images are illustrative and not to scale.

'Heaton Lodge Junction': 200ft giant to expand

Viewed by thousands of visitors the last two years, the UK's biggest layout in 'O' is expected to get better, with a new marshalling yard fitted to the rear. The new scenes are expected to take around 12-14 months to complete.

Owner Simon George commented: "While the prototypical scenic side will remain much the same, work is about to start on creating new scenes on the 150ft fiddle yard at the other side. This area of the layout has always been very popular with visitors, and it offers a blank canvas to model something industrial."

Simon continues: "As well as being doubled in size widthways, the fiddle yard will now become a fully operational marshalling yard, complete with one-metre high lighting towers.

"We're also adding a near-scale coal-fired power station loosely based on Eggborough in Yorkshire. Three huge three-metre high cooling towers will be the most striking feature of the new scene, plus a working merry-go-round coal train unloading facility, a large motive power depot and a nearby main road complete with moving vehicles."



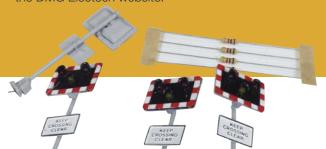
Peco kits incoming for TT:120

Its track system is widely stocked by model shops nationwide and overseas, Peco's newest track developments for TT:120 are now joined by further building kits, manufactured – for the most part – in laser-cut wood, supplied in recyclable packaging. New arrivals with Peco stockists include a Platform Shelter (LK-12109), RRP: £9.95, and Lineside hut (including two buildings) (LK-12110), RRP: £8.95.



Level crossing lights from DMG Electech

DMG Electech's crossing signals for 4mm:1ft scale have arrived, allowing us to take a closer look at samples. Combining small bore metal tube for strength, 3D-printed parts and LEDs for animation, the pre-painted units are packed, with wiring instructions, ready to install on a layout or diorama. Four units are supplied per pack, priced at £26.99, available from the DMG Electech website.





Dapol promises all-new 28XX for 'OO'

Dapol has revealed exclusively to WOR that it is to create models of the GWR 28xx/2884 2-8-0 locomotive for 4mm:1ft scale, A Dapol Exclusive model of 2874 in conjunction with The 2874 Trust is also announced. Models are expected Q4, 2024 at the following RRPs: DCC ready - £189.99, DCC fitted - £224.99. DCC sound-fitted - £299.99. Dapol will be making a financial donation to the trust for each completed sale of its exclusive model of 2874 in conjunction with The 2874 Trust.

Models proposed:

- 4S-009-001 28xx / 2884 2831 Lined Great Western Green
- 4S-009-002 28xx / 2884 2804 Great Western Green
- 4S-009-003 28xx / 2884 2854 Great Western Green
- 4S-009-004 28xx / 2884 2884 Shirt Button Green
- 4S-009-005 28xx / 2884 3819 GWR Green
- 4S-009-006 28xx / 2884 3802 BR Early Emblem
- 4S-009-007 28xx / 2884 2851 BR Late Crest Black
- 4S-009-008 28xx / 2884 2874 Great Western Green



A '2883' 2-8-0 fresh from repair, outside Swindon Works. BEN BROOKSBANK

The GWR prototype 2-8-0 locomotive 2800 (originally No. 97) was built in 1903 and underwent two years of trials before further production began, which resulted in 84 of the class being built. The design was in advance of its time and this class and the slightly modified 2884 class were built from 1903 until 1942. They remained the standard freight design on the GWR for the rest of the Company's existence and were used on the heaviest freight trains.

Tool Van exclusive from Accurascale

Accurascale has revealed an exclusive model in its range, available only from the manufacturer depicting Mk.1 BTU Tool Van ADB 963952 in BR engineers' yellow livery. Priced at £64.95, models are expected to be delivered late Q3 2023 with the rest of its Mk.1 suburban range. Models are to come in "special presentation packaging".

The model has been created with a roof in distressed condition, capturing the patchy and marked condition Mk.1 coaches tended to accumulate in later life, particularly when removed from squadron service into departmental duties.

"Corrections on this first decorated sample are required", it says, "especially around the finish of the plated over windows, which will be executed more convincingly on the production models that modellers will receive."

A complete specification list of the model can be found on the Accurascale website.



Hornby Coronation exclusive models

Hornby has revealed a limited-edition model for members of its Collector Club. Limited to 1000 examples to celebrate the Coronation of His Majesty the King, (R30238TXS) its Class 66 tooling has seen the application of all-over purple, numbered 06523, and named King Charles III. Fitted with TXS Sound, Hornby says that the locomotive will play 'God Save the King'.

too! Models are expected to arrive in September, 2023, and the manufacturer is taking preorders now, limited to one per person.



Unique Darjeeling 'tank' for sale

The Darjeeling Tank Locomotive Trust is urgently seeking to raise £180,000 to keep a world-famous locomotive operational, and in the UK. The only operational blue Darjeeling Himalayan Railway 'B' Class 2ft gauge tank to have left India will be sold in June, 2023. The Trust



is seeking support for its bid to purchase the locomotive and fulfil its aims of keeping it for the public's benefit.

WORLD OF RAILWAYS TV

'Mr. Hornby' spills on post-Hornby plans
Howard Smith speaks with Hornby's Marketing and Product Development
Director, Simon Kohler to discuss future plans.

WATCH THE VIDEOS HERE (You must have a wifi connection to stream video content)









Sonic Models VIX Ferry Van



Andy York

o; you're not dreaming! We recently reviewed Rapido's VIX ferry van, and now we see Sonic Models portrayal of the same, albeit from a slightly different batch of the same 1/227 diagram – you wait 50 years for a model to contemporary standards and then two come along within a month or so!

Sonic Models has released a batch of 10 models exclusively through Rails of Sheffield. Decoration and detail cover the period from introduction, with six models spanning the Bauxite period with different numbering and markings, from the early simple livery, through the door decoration with the 'flying parcel' ferry link logo, to the double arrow suitable for the 1970s. This is followed by three vans in the BR Railfreight era, with the smart red and grey livery, and finally a sole example acquired by the Civil Engineers' Dept. in grey and yellow 'Dutch' livery.

The colour base of the model is good, with a strong orange-red to the Railfreight livery as they appeared when newly painted, as opposed to the slightly pink tones it changed to over time, with very good definition between colours over awkward surfaces. The lettering and numbering are clear but could do with being a little denser with a second

tampo pass. A lone aspect of the decoration which looks a little odd is the 'Through to the Continent by British Rail' branding on the Railfreight versions, which looks as though the type height is a little short, but has been stretched by increased spacing between the letters to span the correct width on the door.

It can be seen that Sonic has depicted early vans without the vertical strengtheners on the bauxite vans to the ends that were a later addition; these are on the Railfreight models. The model is nicely weighted with cast weight in the chassis evident.

As most models will be viewed from above, it is evident that the Sonic Model van has ribs on the roof, but the researcher has provided reference images showing that seam lines were to be found on the roof, but maybe not as distinct as they are on the model. There are numerous separately-etched details such as door and grab handles, but the highlight is the triangular bracing on the body sides. The grab handle on the corner of the ends is about 4mm too tall, attaching to the body a little higher than reference photographs.

On the review samples, the tensionlock couplings pulled out from the socket a little too easily. It appears that the tails of the coupling have not splayed out as much as necessary after the moulding process. Swapping these over for alternative couplings resolved the issue, as the NEM pockets are fine.

Overall, these are very good and can certainly complement other wagon variants in a mixed wagon rake on a layout.



The brake piping is easy to fit and robust although the cosmetic screw-link coupling is basically moulded.

The VIX ferry van, introduced in 1962, saw widespread usage over the network until the later-1980s, with a wide variety of branding and markings.





RAIL BRITISH 70BR 239 0 101-0 Hfs VIX

The triangular clasp mechanism for the vent hatches are separate etched parts and the hatch panels are superbly depicted.



Below the solebar, there is much detail while maintaining robustness.

FACTFILE

Models: S4301-01 PLAIN BAUXITE GB786873 S4301-02 PLAIN BAUXITE

GB786930

S4301-03 EARLY BAUXITE (WITH FERRY LINK LOGO)

B787110

S4301-04 EARLY BAUXITE (WITH FERRY LINK LOGO)

B787153

S4301-05 CORPORATE BAUXITE (WITH FERRY LINK

LOGO) B787190

S4301-06 CORPORATE

BAUXITE (WITH FERRY LINK

LOGO) B786951

S4301-07 RAILFREIGHT RED/

GREY B787151

S4301-08 RAILFREIGHT RED/

GREY B786974

S4301-09 RAILFREIGHT

DEPARTMENTAL RED/GREY

DB786944

S4301-10 CIVIL ENGINEERS YELLOW/GREY DB786980

Liveries: BR bauxite, BR Railfreight and BR Civil

Engineers 'Dutch' **Era:** 1962 – 1980s

Construction: Plastic with

weighted chassis Weight: 103g

Minimum curves: Radius 2

(438mm)

Accessories: Brake pipes, cosmetic screw-link couplings









Heljan LNER Class 02

RM has been given exclusive access to the first preproduction livery samples of Heljan's latest LNER Class 02 2-8-0 'Tango' manifestations, comprising classes O2/1, O2/2 and O2/4.

We saw first EPs of the manufacturer's new models in autumn, 2021, but now, decorated samples are here – an indication that the project is back on track.

When the first batches of the celebrated three-cylinder Gresley 2-8-0s first appeared from Heljan in 2016, there were some robustness and quality control issues. These we're told have all been addressed in this new batch of revised forthcoming models depicting these locomotive variants.

Photographs shown are pre-production samples and are subject to alteration before going on sale.

Tony Wright

The motion has been chemically-blackened; that same technique we're told will be applied to the wheels as well.

Branding is crisp and well-applied, with appropriate shed codes at the bottom of the smokebox doors, too. As first-built, the O2/1s had boiler fittings and cab roof height to the generous GNR loading gauge. However, to make the class capable of working over other LNER lines, boiler fittings and the cab were lowered in what became the O2/2s. By the '30s, the

original O2/1s also had the boiler fittings lowered, and were given LNER-style side-window cabs. These features are replicated across these models, and an original O2/1 is also to be produced, in WW1 grey.

These examples don't even have motors, though all the chassis run very freely. Of particular note is the provision of a low central footplate section, denoting that these locomotives had shorttravel valves; different from the O2/3 variants, which had a higher central footplate section because (being later prototype builds) they had long-travel valves.

FIRST LOOK

These decorated samples are painted satin black, rather than the plain black plastic seen by their predecessors.

The provision of second-hand Group Standard tenders (exwithdrawn K3s) is a very nice touch. Full marks to Heljan for the research undertaken here.



In later BR days, a few O2/1s and O2/2s were given greater-capacity Group Standard tenders, taken off withdrawn K3s. Again, these differences are replicated in the models.

The O2/2 variant with GN-style cab and GN-style tender is sure to be popular (probably the most-popular of all these new examples), but the O2/1 with later side-window cab is also of great interest, both types never having been offered RTR before.



FACTFILE

Manufacturer: Heljan A/S

Era: 4-7

Weight: 486g

Company/Operator: LNER &

British Railwavs

Body: plastic **Chassis:** die-cast **Minimum Curve Radius:**

438mm (R2)

Couplings: NEM-mounted

tension-lock

WHAT WE LIKE

- improved loco/tender coupling
- Wire handrails with turned metal pillars
- More robust and improved outside motion
- Improved design and assembly
- Improved external decoration
- Better cab/boiler backhead decoration
- Two new GNR cabs, plus LNER cab
- New GNR tender plus two LNER tenders
- Low and high running plate variants
- 02/1, 02/2 and 02/4 variants

PAIR WITH:

- Bachmann (31-004A) BR O4 2-8-0
- Bachmann (32-261) 'WD' 2-8-0
- Bachmann (31-320DC) BR J11 0-6-0
- Hornby (R3227) Thompson O1 2-8-0









Hornby 12T vent van



Howard Smith

cross any scale, you'll find demand for commonly-seen rolling stock. And, the more popular the era, the larger the demand – common sense, really. Here's a great new arrival from Hornby for modellers from the 1920s to 1960s and beyond – a 12T ventilated van. Practical for layouts of the Eastern Region, but also further afield owing to the nature of the goods and perishables that they transported.

Of NER design, and available in NER grey with 'NE' initials, and two later Eastern-numbered BR bauxite liveried examples, these are excellent models. They're truly free-running, well-designed, and with incredibly fine detail to their underframes, featuring Morton brake gear with correct reversing cam to one side. Look closely, and you'll find that brake shoes are perfectly aligned with wheel treads, too.

Some modellers might wish to swap out the couplings for magnetic variants from aftermarket suppliers – a trend now being seen across many scales, while more discerning modellers may wish to discard these altogether given the true scale/gauge nature of these vehicles.

Access to the interior of vehicles for modifications is via screws to the underframe, as we've seen on Hornby's previous TT:120 scale rolling stock.

Livery application is to the highest of standards – flawless. Of course, there's still room for customisation through weathering, or patch-painting of planks, particularly with bauxite examples. Despite best efforts, I couldn't find fault with detail either. Iron detail is to scale thickness, and plank indentations aren't exaggerated either. Highly recommended – though best seen in multiples in rakes... that's tempting!

FACTFILE

Manufacturer: Hornby Plc Company/Operator: LNER / BR

Body and chassis: Plastic **Minimum Curve Radius:** 267mm (R1)

Couplings: NEM-mounted TT:120 standard

WHAT WE LIKE

- Well-assembled, with no flaws
- Split end ventilators more interesting than single type
- Well-observed riveted roof end strips
- Thin nature of brake levers













Peco Quarryman's COACHES Phil Parker

ince last year's run of quarryman's coaches flew off the shelves, Peco has released another batch, this time in generic green and brown liveries. No numbers or crests feature, making them perfect for freelance lines, even though enthusiasts will spot their Ffestiniog Railway

Three vehicles are available: A coach, single-balcony brake van and doublebalcony brake. Each is fitted with 6mm diameter, metal tyred, spoked wheels. Even though they run in inside bearings, they spin freely enough - there's no drag to slow

Roofs are a push-fit and inside there is a representation of the benches that run around the edge of each vehicle. Putting figures inside will therefore be no problem.

Outside, one of the prominent features on each is a vacuum hose. This suggests they are based on the coaches as running at present. For earlier periods, the prototypes were built in the late 1880s, the modeller will need to remove these with a sharp knife as they are moulded into the chassis. The anomaly is the double-balcony brake, which is based on Van 1, withdrawn in 1963 and since scrapped.

None of this is going to matter to most modellers. These are nicely made, crisply moulded and well decorated models that run well and will look great behind any 009 locomotive. The price might seem high for such a small vehicle; kit versions will come in at just over a third of this, but the RTR model is well made and robust, and will provide reliable service on your line.

FACTFILE

Manufacturer: Peco GR570UG - Quarryman's coach

GR-58OUB - 2-balcony brake

GR-590UB - 1-balcony brake

van

Era: Current Weight: 10g

Company/operator: Freelance

Body and chassis: Plastic

Couplings: Bemo

Perfect accompaniment for short-wheelbase locos

Free-running metal wheels

Finely moulded, but robust balcony rails

Nicely applied livery







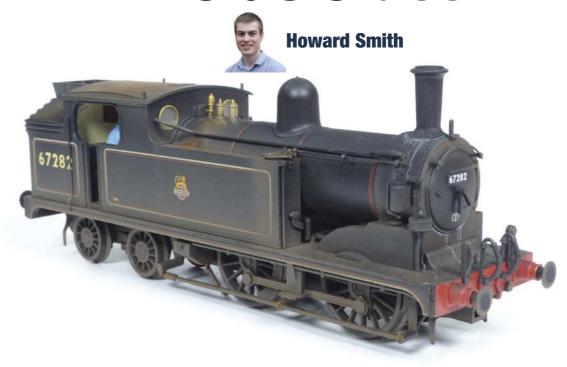








TMC G5 Class



few years ago, North Yorkshirebased model retailer, TMC, unveiled an exclusive project for 'OO' of the NER 0-4-4T 'G5' Class. Tooled by Bachmann to provide the project with a level of quality control throughout the production process, for which it has garnered a reputation, the project has been extensively researched.

We've been given access to production models that were air-freighted in advance of the general release, expected to arrive in two batches from mid- to late-June, and from mid- to late-July.

TMC reduced the number of variants from when first announced, but it still stands at an impressive eight, covering most liveries and eras. TMC's project also comes with further benefits, namely that of - almost - infinite customisation. Should customers want a specific locomotive or livery, it can deliver for an additional cost. Buyers can select which alterations they require upon checkout via the TMC website. Keen to see how models appear with a light and a heavy weathered finish, we asked the retailer to provide one of each...

Models are available in DCC-ready analogue, or DCC sound-fitted guises 'off the shelf'. Fitted with a Next18 decoder socket, models can be tuned to your running preferences, too. Factory-fitted sound

versions also operate under analogue control - a great feature - though full benefit is achieved with a full DCC system.

Peer inside the cab and you'll find a flickering firebox LED, and, to our samples, a crew - an optional extra installed by TMC's customisation workshop.

An 0-4-4T wheel configuration is notoriously difficult to get running 'right' because of its centre of gravity. Here, the weight is centred to the second driver, the bogie playing a role in supporting the rear of the locomotive, through careful springing, thanks to a tapered spring. This alone is clever, allowing a short 'solid' spring height, giving the bogie better articulation over track irregularities. Running performance is reliable, smooth and to Bachmann's usual standard - you can watch a video of these models in action on World of Railways.

Announced with a promising specification, models have many tooling variations to cater for the many variations in the Class, totalling 110 examples. These are as follows: round or triangular cab rear windows, coal rail, cage or hopper and cage bunkers, taper or group standard buffers, forward or rear dome boilers, Ramsbottom or Ross pop safety valves, with or without vacuum brakes, cab roof or cab front whistle positions, smooth or riveted smokebox wrappers, different smokebox doors,

wheel or handle smokebox darts, with or without push/pull gear, and with or without Westinghouse pumps.

TMC's talents only serve to enhance further what is already an excellent model - flawless liveries across a well-designed model with no obvious imperfections. Highlights across these two variants is the sooty nature of the smokebox, water stains and rusting around cab roof and water tanks. The crew might have benefitted from a light weathering before fitting to these weathered locomotives – try shovelling coal and working on a steam locomotive and staying clean - but that's only an observation.

If you want to increase detail further, and your layout has third radius (or greater) curves, fit the chassis pipes and cab steps provided. Meanwhile, fireman's tools, locomotive lamps, a dummy screw-link coupling, steam heat pipe and cab doors provided in the accessory pack will enhance detail atop.

TMC admits that this has been its most complicated project to date. And, though models have taken longer to arrive than anticipated, the results speak for themselves - highly recommended.

Now, if we had some coaches for pushpull variants...



From 1937 onwards, the G5 had the domes placed more centrally on the top of the boiler rather than the position on the earlier O Class we previewed in BRM October 2022. The front model depicts one of the 21 that received vacuum pumps for push-pull working at the same time.



The bunker 'cage' was designed to increase capacity, but I'm sure the additional hopper on the lefthand model would reduce spillage during coaling. Both examples show the real coal added by TMC.



FACTFILE

Weight: 230g

Company/Operator: NER /

LNER / BR

Body: plastic Chassis: die-cast **Minimum Curve Radius:**

438mm (R2)

Couplings: NEM-mounted

tension-lock

WHAT WE LIKE

- Backhead detail with individually-painted parts
- Door dart detail
- Running qualities
- Variations across models
- Finesse of wire handrails and lamp brackets
- TMC's attention to detail with customisation
- Comprehensive instructions provided



The difference between TMC's light and heavy weathering is evident; another way to create variety in your stock.









Hornby HM7000



lan Mellors

game changer? The Hornby HM7000 system was announced in January as part of its 2023 range, which at the heart of it is a series of all-new Bluetooth-controlled decoders and sound decoders. These decoders are described as 'Tri-mode' on the packaging and, unlike conventional DCC decoders, which require digital signals and have limited functionality on traditional DC layouts, they can also be controlled by a dedicated, free Bluetooth app installed on a smartphone or tablet.

Tri-Mode comes with some caveats, though. There has been some confusion over the definition of Tri-Mode since the launch of HM7000, with some users expecting to be able to use a conventional DC controller turned up to maximum to power the decoders.

Hornby has clarified that this is not recommended, as the waveform from some popular DC controllers can produce high voltage spikes that may damage the decoders. The recommendation for DC users is to connect an approved DC power supply directly to the track. Hornby recommends its R7337 supply for this purpose, which comes with an adaptor to allow the output to connect directly to a Hornby power track. Alternatively, a P9100 supply with the separate R7324 adaptor will do the trick.

Likewise, the use of a DC controller in the conventional way to control an HM7000equipped locomotive is not recommended, until a list of approved controllers has been released. As such, conventional DC running can only be enabled by changing a CV setting. Sound playback is not available in conventional DC mode in any case - better to connect DC power to the track and use the app.

The decoders can work with existing NMRA-certified DCC control systems at the flick of a switch on the app, and so work in conjunction with traditional DCC decoders. You can control your locomotive using a DCC handset or via the Bluetooth app on the same piece of track. Later in the



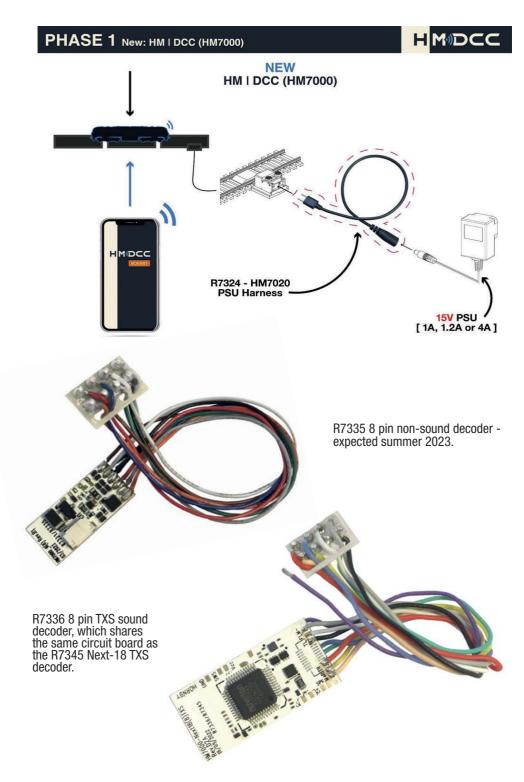
year, a plug-in HM7040 Legacy Dongle will be available that will connect via an RJ12 XpressNet socket on compatible systems such as the Hornby Elite, Roco Z21, or similar, enabling the Bluetooth app to control traditional DCC-equipped locomotives, too.

Currently, only sound decoders are available in 8-pin, Next18 and 21-pin configurations, with the non-sound versions expected later this year. A 6-pin version will be included in the non-sound version, too. The sound decoders come with a default sound scheme, and feature Hornby's new Triplex Sound – TXS, a significant step up from the TTS sound decoders offered previously. Buyers now get to play up to three sound functions simultaneously and the difference in sound quality is noticeable.

A suite of downloadable sound schemes is available free of charge including steam, diesel and electric locomotive sound schemes. The list is continually being added to as sounds are developed. Users can download a different scheme to a decoder as many times as they wish - it takes between 20 and 30 minutes to download a different sound set. Each sound decoder also comes with a cube speaker and a set of parts to build a choice of speaker enclosures. The speakers are pre-wired and simply plug into a socket on the decoder - no need for soldering. An HM7070 power bank (available separately) has its own socket on the decoder and can be plugged in to offer up to nine seconds of power should continuity be interrupted.

Other features in the decoders include a shunting and creep mode, as well as manual and automatic braking. Function mapping is not offered, though, nor is consisting at the moment. Plans are in place to introduce consisting later this year in an app update. All programming can be carried out directly from the app, or by using a conventional DCC handset. The app has been developed with simplicity in mind, so programming is easy to follow without the need to know CVs; functions are shown on screen. Full access to CVs is, however, offered via the





app, too.

A game changer? It's a yes from me; I've not been so excited by a development in the hobby like this for quite some time and this is only the start with HM7000.

Very easy to use with a user-friendly app. Plug and play sockets on the decoders for connecting power packs and speakers, too. Very good value for money at no more than £70 for a sound decoder and speaker.

The system has a very wide appeal, too; I can see new starter sets appearing with

an HM7000-fitted locomotive and power supply – no need for a controller in the box. Traditional DC users will be tempted into DCC sound, and existing DCC users can control HM7000-equipped locomotives with their traditional controller or the app via Bluetooth. As the user downloads the sounds that they need for free after fitting the TXS decoder, retailers can hold fewer stocks, too - no need for multiple versions of a decoder for each different sound set, a big step up from Hornby TTS.

NHAT WE LIKE

- Bluetooth control via an app - no need for an expensive DCC controller if you have a smartphone or tablet to hand.
- Downloadable sounds users can pick and choose which sound they want the decoder to make and change this easily.
- Powered by DCC system or DC supply - not restricted to a DCC system for track power, approved DC supplies can be simply plugged into the track.
- Plug and play decoders come with sockets for the Power Bank and Speaker to plug straight in. Speakers come with a comprehensive set of enclosures to suit most installations.
- Compatible with existing DCC systems – decoders will work in DCC mode so can be controlled by any NMRA compatible DCC system, you can choose at the flick of a switch.
- Great value for money at around £65 to £70 for a sound decoder and speaker.

KEY FUNCTIONALITY

- 1. Tri-Mode can be operated using Bluetooth, DCC, or conventional DC systems.
- 2. TXS Sound three sound channels can be played at the same time.
- 3. Different sound sets can be downloaded by the user for free.
- 4. Sound decoders come with all you need from the box.









Haskell Narrow Gauge Wagons



Phil Parker



f you fancy modelling narrow gauge, but 009 is too fiddly, moving up to 7mm scale gives all the benefits of O gauge, but in a space that can be smaller than that required for a OO layout.

O16.5 represents two-foot gauge lines, popular all over the UK, and especially in Wales. Across the pond, the American equivalent, On30, enjoys reasonable trade support from Bachmann, among others, but US narrow gauge looks very different from what we have in the UK. Most of the stock runs on bogies, and isn't that difference in size to standard gauge!

British modellers need small locomotives, and short wheelbase wagons. To date, this has meant kit-building, often on OO gauge wagon chassis. While this works, the results don't look like narrow gauge chassis.

The arrival of a range of models, manufactured in Taiwan, is a bit of a game-changer. All share a common 28mm wheelbase chassis, running on 10.5mm dia. blackened metal wheels. With an eye, we suspect, to the American market still, Kaydee couplings are fitted, and to be fair, they work really well. If you wish to remove these, they are held in place with a single screw.

A variety of different body styles are offered, all 6mm long but either 29 or 38mm wide. Colours are basic – grey or red oxide – but most modellers will be happy to wield a paintbrush to weather them and bring the

models to life. BRM plans to do just that in a future issue. No numbers are applied as again, most narrow gauge modellers will wish to number them to suit their own line.

Body design is generic, but nicely moulded and look convincing. Removable sides and ends on some models increase the variety available.

These are industrial or estate railway wagons, there's nothing for slate lines here, but I can see them appearing on plenty of layouts despite this. The design will suit everything from early 20th Century to the occasional preserved example on a modern line.

Haskell wagons are supplied as four packs in the UK, exclusively by EDM Models.



The open wagon has removable sides, perhaps offering the opportunity to model it being unloaded in a siding?



A flat wagon with low fixed ends. Taller ends are provided separately with the other flats so you can ring the changes.



Bolster wagons with fixed and non-rotating bolsters. Some wagons are supplied with these loose, which could be made to turn with a little adaptation.

REVIEWS

FACTFILE

Set 1 - High sided mineral wagon, low sided wagon, low end flat wagon, high end flat wagon.

Set 2 – Two twin bolsters in grey, flat with low end in grey, flat with high end in grey. Set 3 - Flat with low end in grey, flat with high end in grey, low side open in grey, high side open in grey.

Set 4 – Four high sided ore cars in red oxide.

Set 5 - Flat with low end in oxide, flat with high end in oxide, low side open in oxide, high side open in oxide.

Set 6 – Four bolsters in oxide, with bolster supplied loose.

Set 7 - High sided ore cars in black.

Set 8 - Flat with low end in oxide, flat with high end in oxide, two double fixed bolsters in oxide.

Set 9 – Four bolsters in grey, with bolster supplied loose. Set 10 – Four low side opens in grey.

Set 11 – Four single fixed bolsters in oxide.

Era: All

Body and Chassis: Plastic

WHAT WE LIKE



Short wheelbase, perfect for UK lines



Metal wheels



Genuine Kadee couplings



Removable sides and ends

WORLD OF RAILWAYS TV

A quick look at some On30/O16.5 Haskell wagons

Phil takes a look at a range of RTR wagons for 7mm scale narrow gauge railway modellers.

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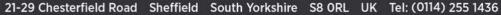
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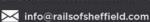


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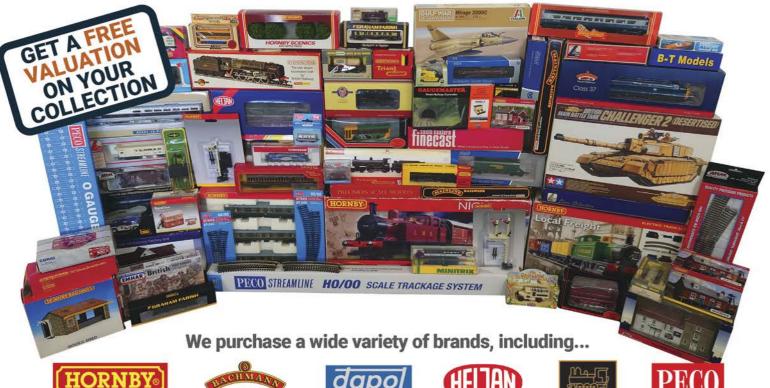


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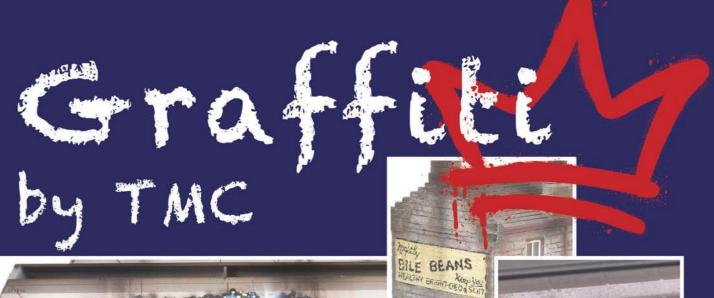




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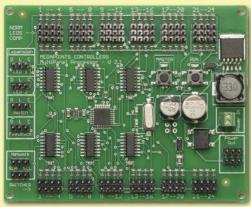
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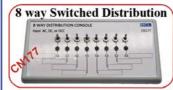
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Broadwater Rd, Romsey, S051 8GL. Sun 10-4. www.romseymodellers.co.uk July 29/30 - NEW MILTON - South Coast MRC Annual Exhibition, The Arnewood School, Gore Rd. New Milton, Hampshire, BH25 6RS, Sat/Sun 10-5.30.

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Sep 17 - OXFORD OXRAIL, Cherwell School, Marston Ferry Road, Oxford, OX2 7EE. Sun 10.30 - 4.

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Sep 30 / Oct 1 - WAKEFIELD Model Rail Exhibition, Queen Elizabeth Grammar School Sports Hall, Northgate, Wakefield, **WF1 3QX.** Sat 10-5 Sun 10-4.30 Oct 7/8 - FOLKESTONE Model Railway Exhibition, Leas Cliff Hall, Folkestone, CT20 2DZ. Sat/Sun 10-5.

Oct 14 - ST NEOTS Model Railway Exhibition, The Priory Centre, St Neots, Cambridgeshire, PE19 2BH. Sat 10-4.30.

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Oct 28/29 - LEEDS Model Railway Society Annual Exhibition of Model Railways. The Grammar School at Leeds, Alwoodley Gates, Harrogate Rd, Leeds, LS17 9NA. Sat 10-5 Sun 10-4.30.

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Jan 27/28 - KENDAL Model Railway Exhibition, Kendal Leisure Centre, Burton Road, Kendal, Cumbria, **LA9 7HX.** Sat 10 - 5. Sun 10-4.30

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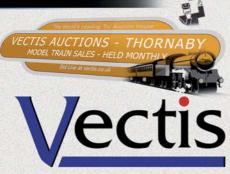
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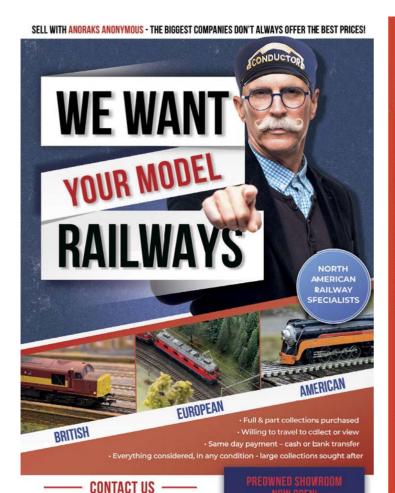
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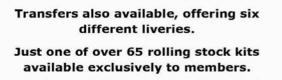


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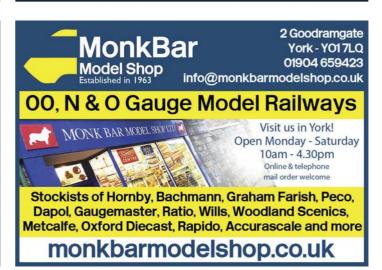


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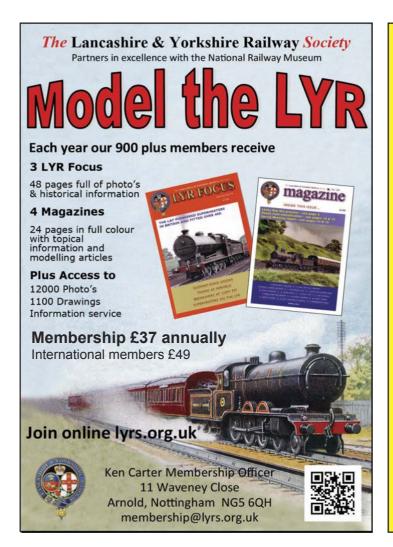




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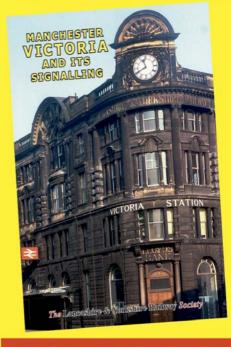
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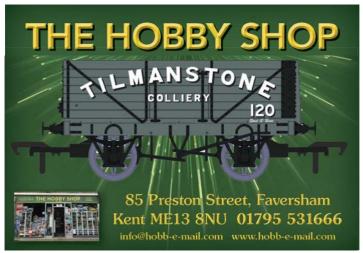


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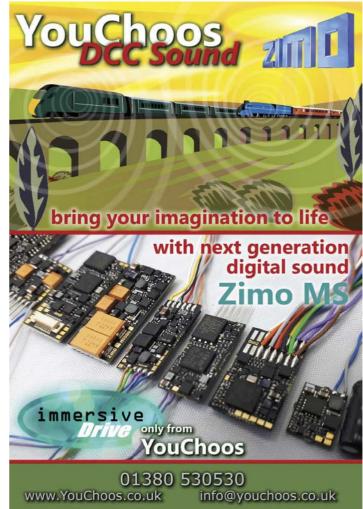
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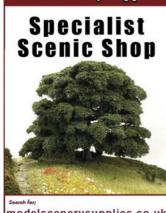




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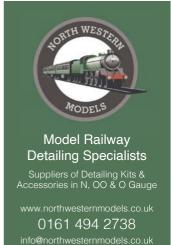




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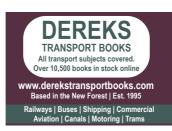


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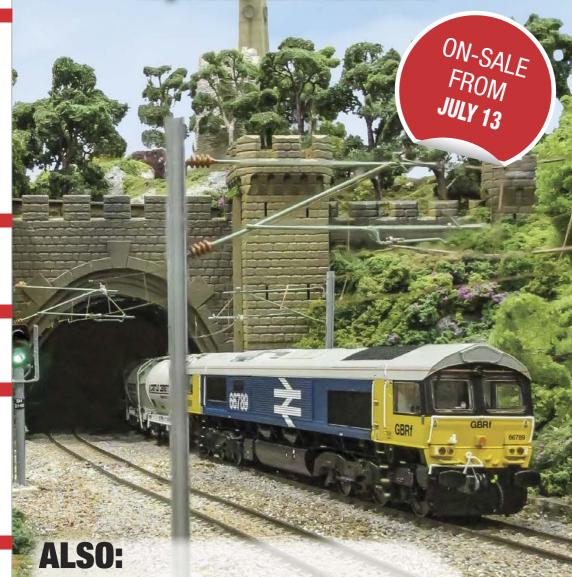
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Buffer (1) Lunchtime with steam



o you know what really matters for a preserved railway?
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No. Clean toilets and a good cafe. Get those right, and you can be assured of repeat visits from families. Stinky bogs mean that, while the enthusiast might be happy to drool over a particularly well-restored set of buffers, everyone else in the car is marking this as somewhere never to return to.

Get it right, and there is money to be made from people who aren't getting on the train. Our sister magazine, *Narrow Gauge World's* editor Andrew Charman recently posted a photo of a doughnut he enjoyed at the Talyllyn Railway, and Phil was keen to tell us about the spicy Mediterranean vegetable pie eaten at Sheffield Park on the Bluebell on the way to a photo shoot, even before he mentioned the immaculate C Class running outside.

So, as summer gets into its swing, don't forget your local, and not so local, preserved railway. There might not be time for a train ride, but buy a cup of tea. That way you are doing your bit to help them keep our heritage alive.

On a sunny day at a country pub, what's your favourite bar snack?

Andy: A pork pie in the Railwayman's Arms at Bridgnorth, with cider. **Debbie:** Bacon Fries for me. Anyone who thinks Frazzles are in the same league needs a stern talking to!

Howard: A pickled egg inside a packet of cheese and onion Monster Munch.

Phil: I have simple tastes. Salt'n'vinegar crisps for me.

Ruth: Dry roasted peanuts for me!

This month in pictures...



Suitably backdated, miniature Andy is set to appear on his friend's 0 gauge layout in the future.



Wood panelling? A potted plant? It can only be the 7mm scale, broad gauge, Parlour Railway at Bristol Show.



Time for IsamBIRD Kingdom BrunOWL to head back home after the show...



Patriotic sandwiches provide sustenance for some steaming on the Coronation bank holiday weekend.







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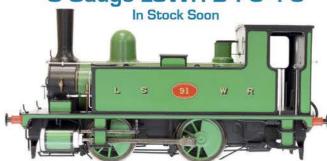
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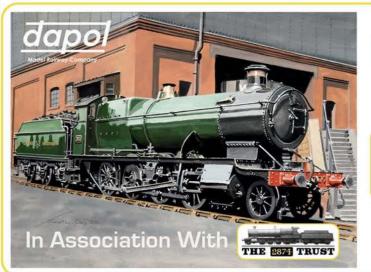


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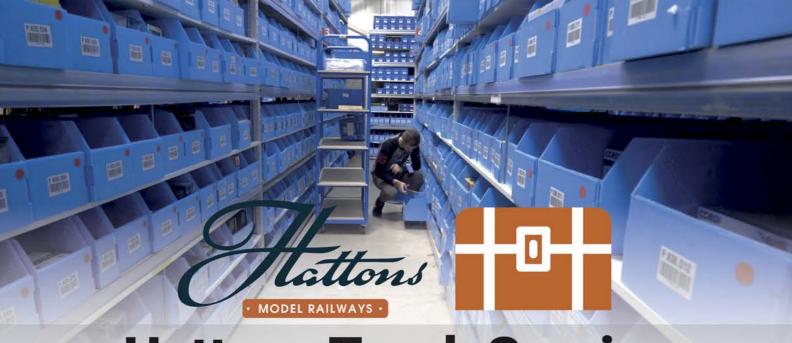
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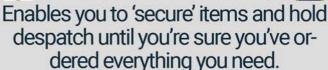


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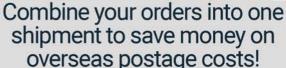


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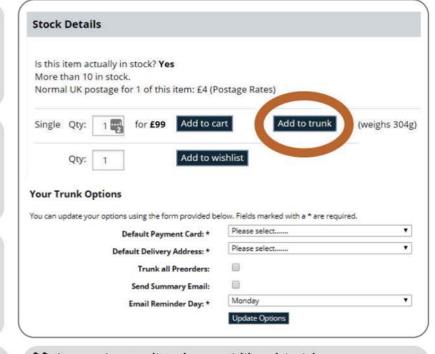


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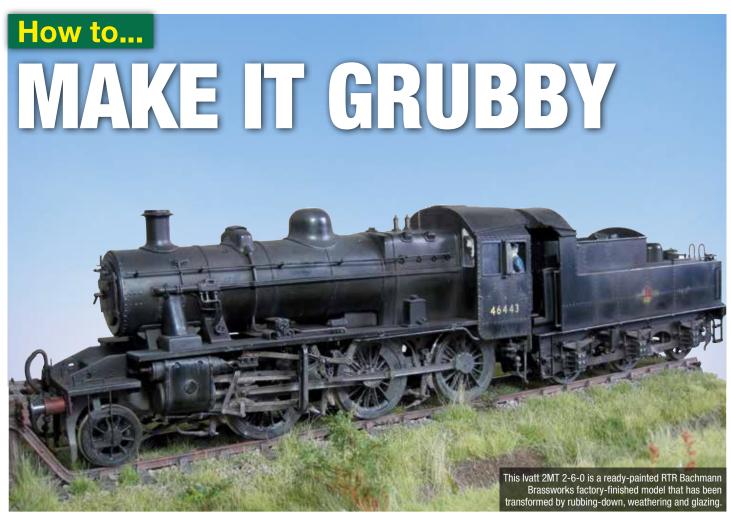
Contents

This guide compiles the best weathering practical and advice articles from the pages of BRM. Whether you want to rust some wagons, make your locomotives more realistic, or add grime to your buildings, find all the information you need to get started.



P4	How to Make it Grubby	P28	Q & A with Grimy Times
P8	Weathering Model Trains Top Tips and Techniques	P31	Using weathering powders
P10	How to enhance an RTR Locomotive	P34	How to weather buildings
P14	How to distress wagons	P36	How to build and weather in O gauge
P18	How to weather a locomotive using paint washes and powders	P40	BRM Meets: GC Weathering
P20	How to add details to your Hornby Sentinel	P44	How to weather a diesel loco
P24	How to weather Track	P48	How to model rust
P26	Enhance your RTR with TMC		





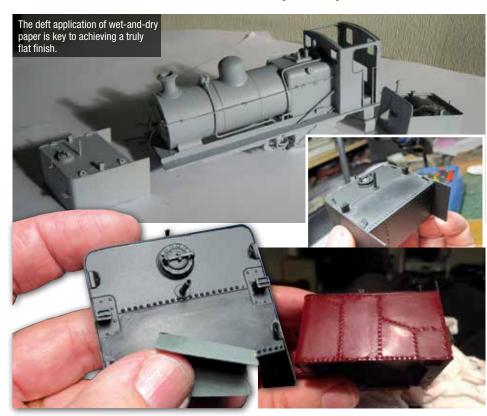
Award-winning theatrical designer Giles Favell shows how to achieve impressive weathering results on any model, whether static or in motion on your layout.

e go to enormous lengths to build accurate miniatures of nature, structures and railways – all portrayed in our chosen moment in time. Every little piece contributes to the overall picture or scene that we are endeavouring to create. Weathering is one of the primary tools to that end.

Factory-finished locomotives stand out a mile on a weathered layout or scene. I don't run locomotives until they've been weathered. They all attract attention on a layout and I believe it's worth spending some time on them.

FLATTENING PAINT

If painting a kit or scratch build it's cleaned and given a coat of primer. I normally use a can of grey primer for anything remotely plastic, or U-Pol Acid 8 Etch Primer for metal – available from numerous outlets online. For smaller scales, getting an airbrush out is worthwhile, but life is too short, and I confess to being lazy. All aerosols are extremely crude, leaving a poor



finish, so once dry, I rub surfaces with 1200 grit wet-and-dry paper to get rid of high spots.

Once the top coat is applied, I use 2000 grit wet-and-dry paper to rub it down too so it's truly flat. I fold the wet-and-dry into a 10mm x 10mm square, and use it wet, working the entire panel right up to rivet lines. It is regularly wiped clean so I can see how quickly bumps disappear.

With everything now looking matt, you have a choice - a light buffing will give it a gentle aged gleam for further weathering, or you could give it a full polish to give it an ex-works finish, where it would still benefit from extra distress.

POLISHING MODELS

Buffing with a paper kitchen towel gives enough shine, but I sometimes give models a wipe with Duraglit silver polish. Be quick though, so that solvents don't disturb the paint. Buffing with the kitchen towel after a wipe with a polish gives a brighter shine, so use it with caution.

I find T-Cut extremely coarse and you can remove a great deal of paint that way, so I avoid using it.

If you try this process and your water turns a milky white colour, it's because the model has been varnished. Don't worry, the technique works well on varnish and creates the same effect. Go easy, though - you don't want to break through the varnish layer, because it creates a tidemark that will be difficult to remove.

Transfers should be added at this point and left to dry, then fixed with varnish after application. I find that if paint is properly flatted and buffed, the transfer carrier



My favourite book

I find Martyn Welch's book The Art of Weathering an absolute and unsurpassed bible on the subject, even though most of it is in black and white! The Art of Weathering, Martyn Welch, Wild Swan ISBN 978-1874103110

becomes invisible. They don't appear to need anything further to fix them, so I no longer have to varnish them down.





BRM GUIDE TO WEATHERING

TIME FOR DIRT

Locomotive dirt is generated by the locomotive, the environment and track, and is partially removed by wind, rain, washing and cleaning. All these factors come into play when we choose how to weather our locomotives. I tend to build up a few layers, rather than just one weathering coat – even if the layers are very subtle. It adds to the depth.

The Garratt was reasonably well caredfor, but is fairly elderly and work-worn. The first treatment was working the boiler, cab and tanks with Winsor and Newton 'Lamp Black'. It's a water-soluble oil paint, which can be moved around with a damp brush or wiped off. When applied to a colour like maroon, it stains the paint, giving it a really nice aged quality.

I use it by brushing small quantities into cracks, joints, rivet lines, bottoms of panels, then wipe most away with kitchen towel – always in a vertical direction. It leaves dirty weathered streaks. Don't over-do it - you can always do more and it takes a day to dry. Enamel washes are a good substitute.

The chassis frames were stippled with a mixture of Humbrol Gunmetal Metalcote (ref.27004), Matt Black (ref.33), Tarmac (ref.112), with rust browns around the brakes. Talcum powder is added to texture the surface. For oily areas, a mixture of the black and gunmetal was worked into the wheels between the spokes.



I wanted a worn black for the plate-work, and my favoured finish is achieved by applying a few small dabs of Humbrol Metalcote Gunmetal, then swamping it in enamel thinners – thus floating the paint around the whole plate, and while still wet, spreading talcum powder all over. Allow it to dry off, brush all the excess talcum off, and polish the plate with a kitchen towel. This gives the effect of clean, but worn black paint, with steel occasionally showing through. Any rust can then be added either with paints or powders as required.









demonstrated on this ashpan.

The ash-pan was comprehensively rusted using Humbrol Gunmetal paint and talcum as a foundation, followed by stippling with rust colours. The nickel-silver valve gear was toned down using Humbrol Polished Steel (ref.27003) with a dash of Gloss Tan (ref.9). Details like worn cab rails and wear added to steps were done using Polished Steel (ref.27003).

Copper pipe work was achieved with a mix of Metallic copper (ref.12) and Gunmetal (ref.27004), as unless copperwork has been polished recently it very quickly darkens - especially with hot water passing through it. Fittings, such as safety valves etc. were a mix of Metallic Brass (ref.54) and Gunmetal to darken it down.

Top tips

Here are Giles' top tips for the perfect weathered look...

- Flatten and polish paintwork
- Subtly pick out rivets and panel joints
- Paint and wipe away vertically to create
- Use talcum powder as a texture for rust and to matt drying paint

Giles' other weathering projects...



Note the worn faded lattering on the van body and formerly green rusty barrel.



It's not just the grass and weeds surrounding this bufferstop that make it an attractive ayout feature in its own right - a multitude of rust stains complete the effect.





A drooping rag adds an authentic touch.

WEATHERING MODEL TRAINS TOP TIPS AND TECHNIQUES



WE REVEAL TOP TIPS AND TECHNIQUES FOR WEATHERING MODEL TRAINS.

describe the technique of replicating the visible results of wear and tear. When we think about our model railways we spend a great deal of time replicating the real world for the layout to look as realistic as possible. Therefore, weathering model trains is a very important part of the modelling process. It's something that modellers of all abilities can do themselves and once you have completed a few projects you will have the confidence to tackle anything. You'll soon be able to master a number of model railway weathering techniques.

Practice on old or unwanted items that aren't of any value: old locomotives, wagons, carriages or buildings. Your first attempts should be on light coloured models as it is far easier to see what you are doing.

Remember that once you start weathering, it is important that you apply it consistently across your layout. True, you may have a few items that exhibit little weathering such as a model locomotive that depicts one that

has just entered service or that is kept in pristine condition. However, doing things the other way round, and having one or two weathered model trains and the majority un-weathered, won't look right. Weathering is a matter of taste and you may prefer light effects or heavy effects, however, it is fair to say that model railway weathering can easily be overdone.

The good news is that there are many different model railway weathering techniques for you to utilise. All are capable of producing great results with a little practice. Whilst it is true that buying an airbrush can be a sizable investment to start with, it doesn't cost too much to run and other weathering techniques need very little in the way of expenditure. The investment is more in time than in consumables.

The Need for Observation

Since you are emulating the effects of the real world, it is essential to know how the effects build-up in the first place.

Observation is your biggest asset and then

you just need the skills to replicate what you have seen. For example, rain will wash deposits from outdoor items and this will lead to streaks and accumulations in other areas. Similarly, items stood on the ground are weathered by the rain hitting the ground and splashing the lower regions with dirt. Look at the pots on a patio to see this.

When you are out and about, look for weathering effects and what has caused them. Then think about how you could go about weathering your model trains to replicate the effect.

This wagon has been weathered to include rust and dirt, just like many real wagons found on the nation's railways.













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MODEL RAILWAY WEATHERING TECHNIQUES

There are many techniques for weathering model trains. Experiment and the select the best method for your desired result. For example, you could first spray the model with a faded colour to tone down the whole finish. You could then add a wash to replicate dirt trapped in corners. To finish off you could drybrush colours to simulate missing paint on raised areas.

DRY BRUSHING



The vertical black streaks on this industrial locomotive were made using the dry brush technique.



The brown rust streaks on this corrugated iron roof were made using the dry brush technique.

A paintbrush, a rag to wipe excess paint off and some paint.

Pros and cons:

you need:

What

- Only a brush and paint are required.
- Limited affects possible. Best combined with other methods, particularly washes.

Method:

Take a brush and dip it in your model railway weathering paint of choice. Now wipe most of the paint off onto a rag and drag the brush lightly across the surface to deposit small amounts. It does take practice to get the right balance between the amount of paint on the brush and the pressure to use when applying it.

You will find this technique particularly effective for highlighting raised surfaces. The technique isn't so good for producing fading effects on a large area as it is difficult to get an even finish. It's the 'hit and miss' action of this technique that is its strength.

WEATHERING POWDERS/ PIGMENTS



The rust effects on this wagon floor were achieved by rubbing smoke, rust, sand and iron oxide weathering powders onto a matt black paint finish.

What you need:

Weathering powders/pigments, application tool (sponge tipped blunt tool) *Pros and cons:*

- Very little equipment needed
- Cheap
- Can be removed easily if you make a mistake. A great technique for beginners
- Needs sealing afterwards with a varnish
- Only suitable for matt surfaces, so may need a preparatory coat of matt varnish

Method:

Your model will need to be clean for the weathering powders to adhere properly. This is likely if the model has had any use and has been handled. Washing with a mild detergent is a good idea first. If the item being weathered is a locomotive then separate the chassis to avoid getting the mechanism wet.

You need to consider the finish of the model. You will get the best adherence if the finish is matt. Gloss probably won't work at all as none of the weathering powder will adhere. If in doubt, spray the model with a matt varnish such as Humbrol Matt Cote. Don't spray moving parts – separate the body from the chassis beforehand or use a mask.

To apply the weathering powder, use a blunt tool such as a cotton bud. Even better, use a sponged tip tool – many weathering powder sets come with these as an accessory.

Give the paintwork an overall coat with a light colour to fade it and replicate the bleaching effect of the sun. Apply the powder to the application tool and rub it in lightly on the model using a gentle circular motion. Apply other effects locally. For example, if moss has been growing on a damp wall below a damaged water pipe, then rub the powder gently in at that point.



Most paint manufacturers make a range of weathering powders or pigments. One bottle goes a long way and only a few basic colours are required.

WASHES

What you need:

Brushes, paint and some thinners to match the paint used.

Pros and cons:

• Little equipment needed • Cheap • Limited affects possible. Best combined with other methods • Good ventilation needed • Can affect existing paintwork so care is needed

Method:

Washes are diluted layers of paint used to produce translucent affects and deposit paint into recesses. It is a good technique to combine with dry brushing.

Ensure the model is clean. Small accumulations of dust can be removed with a brush, but for finger marks and heavy accumulations of dust you will need to wash the model with a mild detergent. If the item being weathered is a locomotive then separate the chassis.

Deposit some of your model railway weathering colour into a small container.

Now add an appropriate thinner.

The amount to add will need some experimentation, but the greater the opacity the stronger the effect. I would use at least 50% thinners to paint, but might go as high at 90% if necessary. Remember that you can always wait for the affect to dry and then add a further layer.

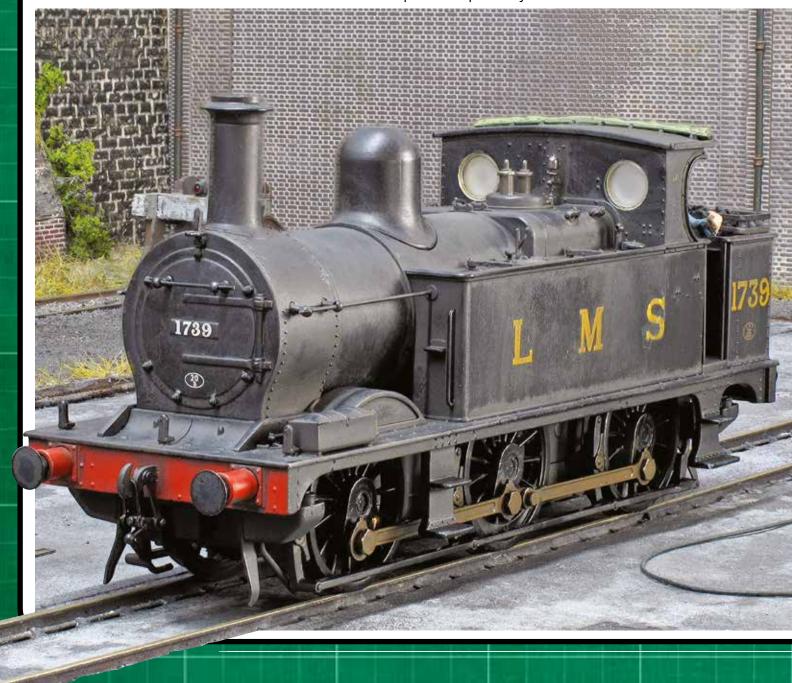
Brush the wash over the model in a thin layer. You will find that the pigments in the paint tend to accumulate in the corners of detail. If there is too much of the underlying paint being covered then wipe off the excess with a cloth or cotton bud just leaving it in the recesses.

The one drawback to this method is that the thinner could disturb any paint or decals already on the model, therefore, you might like to test it first on an unobtrusive area. Don't overwork the thinner by brushing it more than necessary. If you know what paint was used in the existing layer then use another for the weathering layer.

HOW TO... ENHANCE AN RTR LOCOMOTIVE

Words & Photography: Michael Russell

Struggling to differentiate your RTR locomotive from the crowd? Michael Russell shares 18 swift transformational tips to improve your fleet.



achmann's 1F model is nicely finished, but from the box, is un-weathered. As such, it looks unrealistic and I wouldn't consider running it on my layout without some attention. Doing your own weathering is very enjoyable and straightforward if a few simple rules and techniques are followed.

This 1F locomotive is in its pre-grouping LMS livery which dates it to Era 3 - pre-1947. Up to the beginning of WW2, labour was plentiful and pride was taken by the crews in the locomotives they manned and the railway company they represented. Even a humble shunting/freight locomotive such as this would have been cleaned as part of its preventative maintenance. From 1940 until the end of WW2, little cleaning of locomotives took place.

I have endeavoured to weather the locomotive to a well-used, but cared-for condition. The basic method is to add

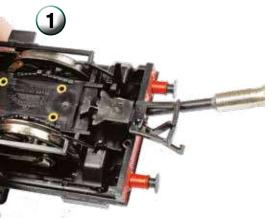
paint, then remove it, thereby replicating the action of dirt accumulating and being removed by locomotive cleaners.

The main problem when weathering is to find good reference material. Preserved locomotives are kept clean and photographs of locomotives from the earliest days until the 1960s are generally black and white, poor in detail and only show part of the locomotive. A locomotive out of use is of little help because it is subject to a different type of weathering. I would still recommend that you look at as much colour material as you can, as well as active preserved locomotives 'in the flesh', but you will have to rely to a certain extent on your experience, and draw on material from several sources, for any individual weathering project.

All the paints used are Humbrol enamel, except where indicated, and the numbers of the tins you need are indicated in brackets.



I'm adding the cosmetic couplings to the buffer beams using superglue before starting the weathering.



Prise couplings off and store them safely. You may like to weather these separately if you plan to add them back to the locomotive at a later date.



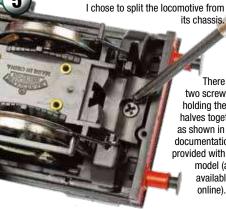
The crew came away fairly easily by twisting them using a pair of tweezers.

MICHAEL'S LOCOMOTIVE WEATHERING ADVICE:

- Good light is essential. Spray outdoors, in a glasshouse/conservatory, or close to a window.
- It's difficult to see how much paint is produced by your airbrush until it has landed on the model. So that you've got some idea, start spraying onto a piece of cardboard, then, holding the brush controls in the same position, direct the airbrush at the model. This is a situation where a 'loo roll' handle is useful.
- You will use very little paint when weathering, so only mix small quantities.
- Stop before you think you have finished it's easy to overdo weathering effects. You can always add more if you revisit the locomotive at a later date.
- · Keep your brush strokes vertical, never horizontal.
- · Before using the locomotive, with everything dry, clean the wheel treads and current collection surfaces. Check that you haven't gummed up the motion and free it before use.
- Be careful using thinners around transfers work on these sections quickly and don't press too hard.



The next step is adding the canvas weather sheet to the cab roof using tweezers and superglue.



There are two screws holding the two halves together, as shown in the documentation provided with the model (and available online).

BRM GUIDE TO WEATHERING



By using the cardboard tube from a toilet roll as a handle, I managed to avoid touching the body when spraying.



I removed the bunker by undoing the two screws underneath - be very careful here as the handrails are now exposed and are easy to bend out of shape.



Using the screws, I attached the bunker to a piece of cardboard to facilitate handling when spraying.



Brush the model with a soft brush to remove any particles of dust or debris.

Use a soft dry brush and tweezers to remove

particles of cotton stuck to the model.



Using an airbrush, spray a mix of Humbrol Matt Black (33), Leather (62) and Metalcote Steel (27003) onto the body, chassis and bunker. You'll only need a light coat. If you don't have an airbrush, apply a dilute mixture using a brush.



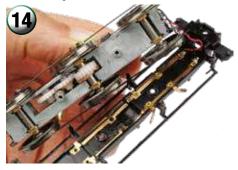
Before the paint has dried, use a cotton bud moistened with thinners to remove the paint wherever you can reach it. Work on one area at a time and change buds regularly as they become dirty. Mop up thinners from the model using a dry cotton bud. Be very careful to avoid rubbing too hard otherwise you will remove the transfers!





In the cab, wet a brush in thinners and move around the weathering sprayed onto the cab roof and backhead.

Use a cotton bud soaked in thinners to clean the gauges, wheels and regulator.



Remove the two screws holding the baseplate in position and remove the wheels. Immediately put the two halves back together temporarily to avoid losing gears and prevent debris reaching the inner workings.



Apply black acrylic paint behind the wheels, and spring. You'll be able to see the outline of the wheel from the spray pattern left behind. Grind up a small amount of black and grey chalk using a file and daub this into the wet paint. Reassemble the wheels and fix the baseplate into position.





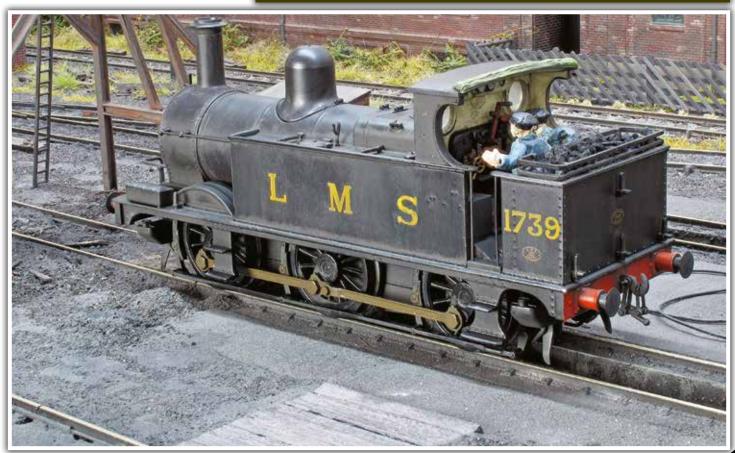
Thin acrylic black paint by 50% and paint this onto the cab floor. Apply more of the ground black chalk. Add a small amount of ground orange chalk to the firebox door. Reassemble the bunker to the main body.



Mix up a thin enamel wash of Humbrol Gloss Tan (9) and Metalcote Steel (27003) and apply to the coupling rods. Ensure that you don't add this too thickly and so gum up

TOP TIP:

Above the footplate the main source of contamination would be soot from the chimney and below it, dust from the brake blocks. Coal dust would affect the cab and bunker area and a general layer of dirt would be deposited on everything. Maintenance and provision of consumables would also influence the finish. Coal would be added to the bunker, water to the side tanks and oil would be applied to all moving parts on a daily basis. The smokebox would be emptied of char and the fire cleaned and periodically removed, through the firehole door on a locomotive of this age. Operating in such a dirty environment, steam locomotives never stayed clean for long.



HOW TO...

DISTRESS' YOUR

SHOPPING LIST

TOOLS & MATERIALS

- I Superglue
- I Humbrol 7mm Stipple Brush
- I Humbrol 7mm Flat brush I Humbrol 3mm Flat Brush
- T Javis Nylon 000 Brush
- Lifecolor LP01, LP02,
- LP03 weathering sets
- I Fox Transfers sheets
- F7214 Warning Flashes (pre-1998), FRH7020 Warning Flashes (Early) and FRH7949REV ('onoff' markings)
- I Heljan airpipes from Class 31 sprue (7003100l)
- I Finescale Model World Modellers prep set.

he great thing about modelling in O gauge at the moment is the number of new RTR products arriving on the scene. Never has the scale looked more attractive to those moving up from smaller scales.

An ever-increasing number of new locomotives appear from one year to the next, accompanied by wagon releases, all ready to use from the box. But, just as in smaller scales, ready-to-run models don't spell the end of modelling. Locomotives and rolling stock can still be improved with extra detail, repaints or weathering.

At the end of last year Heljan released its models of the 'Dogfish' ballast hopper. For my project layout 'Penmaenmawr', modelled on the ballast quarry location in North Wales, I'll need quite a few. I'm the first to admit that Heljan's attempts are more accurate than my kitbuilt efforts. They look just as they should, but when 'box-fresh', they're far too clean. Put one adjacent to one of my kit-built 'rust buckets' and they look like toys, however good they are.

Let's improve the realism of these wagons with some heavy weathering and make them look just as life-expired as they did in the mid-1990s. With two wagons in need of treatment, each in a different livery, I'm going to represent them in alternate states of cosmetic wear.

If you haven't used an airbrush before, don't be put off. The current **BRM** airbrush offer contains everything you need to get started. I've used all sorts of paint in the past, but I'm using acrylics more now because of the rapid drying time. These techniques are applicable to all scales, so get your brushes out and start making things look more realistic.

CONTACTS

FOX TRANSFERS

W www.fox-transfers.co.uk

THE AIRBRUSH COMPANY

W www.airbrushes.com

HOWES MODELS

W www.howesmodels.co.uk

HUMBROL

W www.humbrol.com

FINESCALE MODEL WORLD

W MMM

finescalemodelworld.co.uk

DCCCONCEPTS

W www.gaugemaster.com



WAGONS

Howard Smith gives Heljan's recently released O gauge 'Dogfish' ballast hoppers a weather-beaten look.



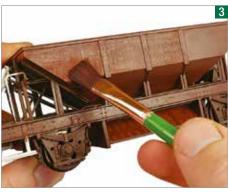
BRM GUIDE TO WEATHERING



Starting with a Heljan O gauge model of 'Dogfish' DB993608 in olive green, this wagon is to be the candidate for some severe rust and grime.



To weather the wagon I'm using a selection of washes from Lifecolor. Packs LP01, LP02 and LP03 will all be used. I highly recommend you buy a pack of each.



The first objective is to 'kill' the overall olive green colour of the wagon. I'm starting by applying a thin coat of LPW 06 rust from the 'Rust Wizard' kit.



The insides of the wagon are painted a colour shade of 'Eroding dark rust'. Always paint in vertical lines in a downwardly direction, following rain streaks.



The advantage when painting with these acrylics is the fast drying time. No sooner is the base coat dry, than I'm applying a coat of LP08 eroding light rust as highlights.



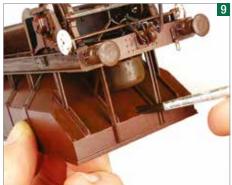
The exposed ends of the wagon are subject to more rainwater than dust, hence appear a different colour. These areas are given a coat of LPW10 yellow marks.



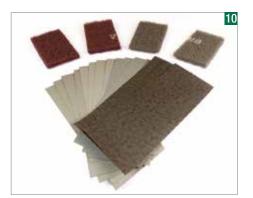
The same paint is blended into the sides so avoid a sharp colour contrast. Do this by wiping as much paint from the brush as possible and 'dry brushing' to fade.



Another good selection of acrylic paints for modellers is from Comart. When choosing colours, I look shade rather than brand. Acrylics paints will mix together.



Comart's shade of Fertile Soil is ideal for creating tones often seen in areas covered in brake dust and unwashed by rain, such as underneath the hopper.



This paint preparation pack from Finescale Model World contains lots of useful items when painting models. The fine grit paper is particularly good.



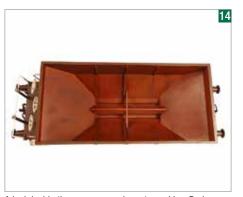
I'm using the fine grit to rub down the top layer of paint and create slight variations in undertones. Some of the olive green can be made to appear through if wanted.



Using an airbrush, I'm applying three shades of rust around the wagon - Deep and Eroding Dark Rust from lifecolor and more Fertile Soil from Comart.



1. Areas rubbed back reveal the odd glimpse of the olive green. 2. Darker rust shading reveals detail. 3. Rust stains and patches are added with a fine brush.



A look inside the wagon reveals rust speckles. Reduce the airbrush paint flow until it spits, rather than sprays, using a contrasting darker colour.



The patch-painted sides are added using a mix of DCCconcepts black weathering powder and paint to obtain a dull 'chalkboard' faded look.



Footsteps, door wheels and axleboxes are painted and Health & Safety notice transfers are applied from Fox (see Shopping List) as this wagon is fresh from revision.



The TOPS code ZFW was given to a small number of 'Dogfish' with a through airpipe. I'm using a spare from a Heljan sprue, painted and superglued into place.



The other wagon, DB993116 in engineer's grey and yellow livery needs little treatment - I want it to look exworks, but not like plastic. Let's alter its appearance.



Toning down the paint with the airbrush is easy. Dust Wash from Lifecolor is ideal to create a faded, yet subtle effect. The more you use, the more faded it'll look.

ll ask **the expert**

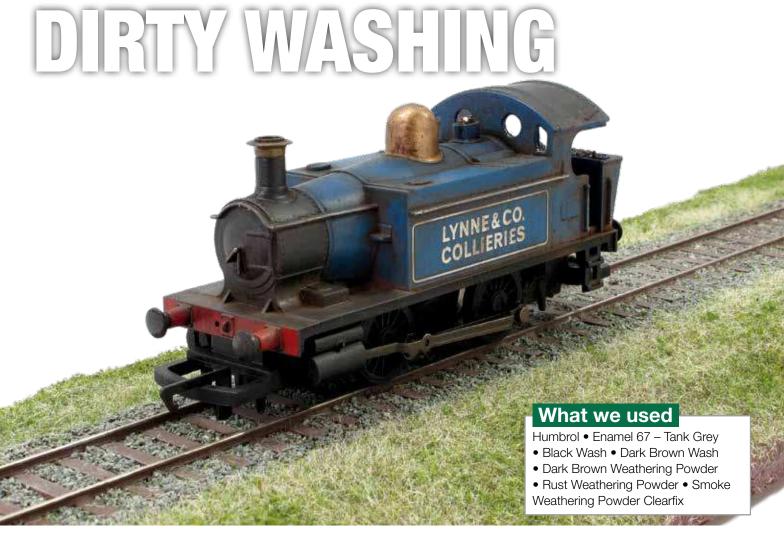
I am torn between weathering with a brush, an airbush and weathering powders. Which should I use?

It all depends on what effect you're trying to achieve. The techniques can be mixed and matched, so don't think about choosing only one. As I've demonstrated here, you can use all three. Weathering powders add texture to models - an accumulation of dirt on chassis for instance. Airbrushes are good for general effects - dust or rust for instance. A brush gives you more control - adding scratches, or painting fine detail.





Once fully dry, a coat of matt varnish is applied over both wagons to seal paint effects and transfers. This is essential as handling wears paint over time. I've shown two different levels of weathering. For the less brave who would like an easy project, look at the wagon to the left. I've even left the wheels clean as though it has had new wheelsets. For the more experienced, look at the wagon on the right. Why not make all your wagons unique? Rakes of rolling stock are bound to look more interesting if every wagon appears different.



Phil Parker adds an authentic patina to a budget locomotive, using a selection of Humbrol weathering products.

ost model railways can look a bit characterless if everything's too clean. Grime highlights edges and emphasises detail and any layout will look more realistic with a bit of it.

In 1962, Tri-ang commissioned the famous artist Terrance Cuneo to weather a locomotive for its 10th anniversary book using artists' oil paints. Adding dirt to a model is no longer the preserve of the art world and we have access to products that make the job much easier.

For this project, I'm keeping things simple by using items from the Humbrol range which can be found readily, sometimes even on the high street. The weathering powders are especially good as they seem to stick to models really well.

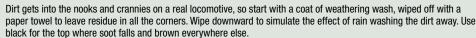
My project model is a simple 0-4-0 locomotive, the lowliest model in the Hornby range. Despite this, it looks pretty good, and very different, with a bit of dirt. There are plenty of these models on second hand stalls so grab one and give it a go. ■



Never start weathering with your best locomotive. This slightly dusty Hornby 0-4-0 is perfect, not least because as a colliery locomotive, the one thing it needs to be is really dirty.



Paint the shiny edges of the wheels a colour to match the wheel centres. Ideally you should prime the metal first, but I find matt black enamel sticks pretty well and if it does chip, touching up is easy.





Not an essential step, but I like to dry brush the black parts with No.64, Tank Grey, to highlight the rivets and tone down the white handrails. Use an old brush, pick up paint, then wipe most of it off on a cloth. Then work the brush over the model, and paint will be dragged from the bristles on raised detail.



Scrub weathering powders over all surfaces, especially the footplate. Start with sparing use of rust colour followed by generous amounts of dark brown. Finish with soot on the top surfaces. The powder gets everywhere so put paper down to keep your work area clean.



If you don't like the results, try a damp cotton bud to clean some of the surfaces. If all else fails, remove the body and scrub it in the sink. Obviously don't do this if the model has lights or other electrical details, but the 0-4-0 is as simple as they come and the body will survive a swim.





Which brushes?

I've used a tatty selection of brushes for this project. Washes are applied with a large old brush, too far gone for proper painting. Dry brushing ruins the bristles so another old brush for that job. Finally, Humbrol stipple brushes are perfect for putting on and taking off the weathering powders. The cotton bud is for cleaning up powder that needs to be removed.

BRM GUIDE TO WEATHERING



HOW TO GIVE... YOUR

The prototype

offers loads of

where do you

start?

A PERSONAL TOUCH

If you have one of Hornby's new Sentinel diesels, here's an easy-to-follow guide to personalising your model in just two hours!

ne of the most eagerly anticipated Hornby models to have been announced last year was the little Sentinel 4wDM shunter. Widely available for less than £50, the model is likely to be a big seller and you can be sure that there will be an awful lot of layouts gaining new private sidings operated by these brightly coloured locomotives.

This is good news for Hornby, but it means there a lot of identical locomotives out there. How can we personalise a model so it's not the same as the one running on your mates' layout?

Modellers on RMweb started tinkering with their models almost as soon as they got them home. The prototype offers loads of potential but if you've never dared work on a locomotive before, where do you start?

The first job is to look at the prototype. My base model is Cattewater in bright red Esso potential but if you've colours. The livery is based on a preserved locomotive and is never dared work on a prettier version of the paint a locomotive before, job the same prototype wore in industrial service. Among the changes are the yellow axlebox covers now painted black (interesting that the pre-production model had this feature) and the wheels originally a dull red, now black.

The truth is, unless you are modelling a very specific prototype, you have a lot of leeway on the details. Industrial diesels were been

maintained within the factory site and 'bulling up' wasn't uncommon for special visits and open days. Thus, if you want vellow axleboxes, you

can have them. Since this guide is aimed

at novices, I haven't used my airbrush. As I write, it's too cold and wet to work with it in my garage anyway so I'll stick to a little paint and weathering powders when adding dirt. If you have spraying

facilities, a light mist of mucky brown over the model would be a good start but don't forget to mask the windows beforehand.

Talking of dirt, this varied depending in what environment the locomotive worked. Most machines

BEFORE



Do a little research online or at the library. There are lots of photographs, many of which you can find linked to discussions at www.rmweb.co.uk.

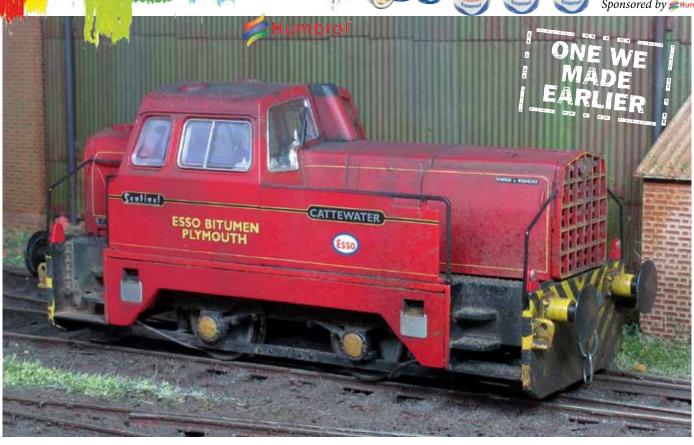


STEP-BY-STEP **Gui**l

minutes

On the outside edges of the bufferbeams are lifting rings which need to be drilled through to leave a 1mm hole. This is a diecast part so a sharp bit is required. A pin vice is safer than a power tool as you don't want to drill into the buffer housing.





slowly turned brown and grey but those used in the china clay industry gradually gained a thick white patina that would be easy to represent with talcum powder.

Apart from drilling out the lifting rings, the model doesn't really need much detailing. The most obvious improvement would be to replace the glazing. Scratch-building replacement parts is possible but you'd have to be very good to do a better job than the supplied items. However, Shawplan intends to produce a Laserglaze pack in the future so this should solve the problem.

For a modest purchase price, this could be the ideal locomotive for your first weathering exercise or even a full repaint. Whatever you do, enjoy it. It's a handsome looking model and a little dirt just gives it some character. BRM

STRAIGHT OUT OF THE BOX...

The Hornby model is based on a Sentinel diesel preserved on the East Somerset Railway. As such, there are a few livery differences from the locomotive in service. The main difference being that the red paint hasn't yet faded to pink!





BLANKING THE COUPLER HOLE

For anyone not using the NEM coupling sockets, Hornby provide blanking plates to fill the bufferbeam holes. These plug in to the sockets but really need to be glued in place and then filled to avoid a gap

Don't do this until you are certain you no longer need to remove the body as the screw that holds the small hood on is under the coupling.

Either that or modify the plate so it is just glued in place.

Three-link chain is available from several suppliers. I've used some from the EM Gauge Society, hung on the Hornby hook.







'Wasp' warning stripes should carry around the edge of the bufferbeam but can be added with yellow paint. For speed I'm using acrylic and I also painted the axleboxes and the filler around the coupling blanking plate.

PLEASE TURN OVER **FOR MORE**

PRACTICAL PRACTICAL 2-HR

TOP TIP

Above Removing the body involves undoing a screw underneath the model and unhooking the front handrails. The cab interior is quite bulky to cover the DCC socket/ decoder and is moulded in blue plastic. Photographs appear to show it as a pale colour, either grey or cream. Picking out the desk in this and the rest with matt black looks better. While you have the black to hand, the sandbox fillers in the side should also be this colour.

Right A Dapol workman suitably altered fits the cab well. The driver was sat so he could see backward and forward easily, as shunters spend as much time going one direction as the other.

File half the depth of the body away below here

Cut away the legs below here

minutes



eathering a model shouldn't really be rushed. In an ideal world paint must be given sufficient time to dry fully or it's easy to lift one coat away by over-painting it with another.

If time is short, there are a few 'tricks of the trade' you can use:

- Acrylic paint dries faster than enamel
- An old hairdryer will quickly make paint touch dry. If you hold the model in your hand, your fingers will tell you to put it down before you risk melting anything, no matter how high the heat setting.
- Weathering powders work wonders many modellers use them exclusively and of course, there is no drying time.



60-75 minutes

With the bonnets out of the way, dry-brush the chequerplate with silver paint. This seems very bright on the preserved loco although in service it would be tarnished. After this, re-assemble the model.



75-90 minutes

Emphasise all the panel joints with thinned track colour. Place the brush in the gap and let capillary action draw the paint from the bristles. If you've thinned it enough, it will quickly flow along the joint. Do the same for the corners and anywhere dirt collects on the prototype.

90-115 minutes

Dust the model with brown and black weathering powders using vertical brush strokes. I work over a plastic tray and let the colours mix up to provide different shades of dirt.





COLOURS USED

Humbrol Acrylic

BR Matt Yellow (RC407)

Humbrol Enamel

- Camouflage Matt Grey (28)
- Matt Black (33)
- Matt Track Colour (173)
- Aluminium Metalcote (27001)

Humbrol Weathering Powders

- Smoke (AV004)
- Dark Earth (AV007)

MIG Weathering Powders

• Eroding Burnt Rust (PG107)

SENTINEL REVIEW



Read BRM's indepth review of the Hornby Sentinel Shunters in our March issue.

Download this issue now!



www.pocketmags.com/BRM





Armed with new paints from Lifecolor, Kevin Phare weathers a selection of laser-cut sleepers for greater realism.



Dry-brushing is a useful technique that can be used to highlight areas by using a stiff brush that has had most of its paint removed by brushing excess onto a paper towel. The small amount of paint left behind can be worked over the surface, without covering it totally. Its main aim is to lightly cover raised areas - the application can vary in amount and you'll need to keep refreshing the brush as the paint disappears quickly by drying and with use.

Special ho

caleModelScenery has a range of lasercut wooden sleepers in OO gauge with a choice of two-, three- and four-hole patterns. The hole pattern was made by the type of chair used, and this depended on the railway operator who laid the track. After doing some research, and to clarify and help those trying to decide which ones to go for, I discovered that (LX080) four-hole sleepers are suitable for the Midland, GER and certain companies in Scotland, (LX085) three-hole sleepers are suitable for LMS,



To assist, I fixed a selection of sleepers with Blu Tack (or similar) to a piece of wood for ease of holding and painting. I turned some over to the reverse side for a bit of variety.



I applied Lifecolor Roof Dirt next, adding a dirty effect to the sleepers using a dry-brush application, but applying it liberally.



A few of the sleepers are a different colour in an effort to introduce changes that could occur in their manufacture, supplier or even age of the sleeper. I used Carr's Sleeper Stain, applied by brush to four of the sleepers.

LNER and BR regions and (LX084) twohole sleepers are suitable for the GWR. This gives a good idea of who used what, but, as ever, there will be instances where there are exceptions to the rule.

First, remove the sleepers and clean the minimal amount of fret excess used for joining the sleepers, which needed a sharp knife and a little filing. There is nothing else of note because these are beautifully crisp and well-cut.

I used the Weathered Wood and Rail



A coat of Lifecolor Warm Base Shade was applied to all visible areas. Wood is a porous material that is easily painted, and the paint has a tendency to settle into the grain, creating a realistic effect.



Finally, another dry brush coat of Lifecolor Sleeper Grime was applied, especially at the edges and ends.





Weathering sets from
Lifecolor. These are by
far the most-used paints on
my layout and have many other
applications, other than what it says on
the box! At first glance the sets appear
expensive, but they seem to keep going,
making them cost-effective.

The following set of photographs illustrate how I made these detailed sleepers even more realistic, but the techniques can be applied to other scales, too.



A coat of Lifecolor Cold Light Shade was dry-brushed over to highlight raised areas and edges. It also helps to cancel the very dark colour, previously applied in some areas.



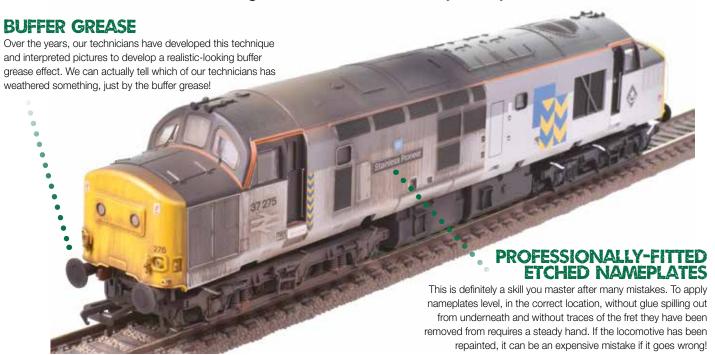
With all the layers of paint dry, I left the sleepers for about an hour. A wash of rust colour was added to the recess/bolt hole areas using paint from the Vallejo range, diluted with water and left to run around the recess and holes. I added an additional coat to thicken up the colour, particularly around the holes to represent rust left by the chairs when they were removed from the sleepers.



These photographs show where I've placed the sleepers around my layout, 'Little Muddle'. I want to add more detail, like chairs, fishplates and other items that were often stored trackside, too.

ENHANCE YOUR RTR WITH TMC

Chris and Alex Yates of The Model Centre emphasise particular effects they seek to create when weathering a locomotive, to make your layout more authentic.



OUT OF SIGHT, OUT OF MIND?

It's actually very common for TMC to weather the underneath of models. As many models are now detailed underneath, too, it's nice not to ignore this area.

WASHER FLUID STAINS

The route the over-sprayed washer fluid takes as it leaves the windscreen can create a distinctive pattern, which our technicians can interpret to give a really impressive effect.



Even if you're going for a light or value weathering, brake dust is something that will always feature as it's an unavoidable waste product as these huge heavy machines try to slow their huge train! Obviously this doesn't actually happen on the model, but that's why we're here!



WINDSCREEN WIPER SWEEPS

This effect represents a clear distinction between the dirt at the edge of the windscreen and the clean area where the wiper has operated. This is a really nice finishing touch that we apply to Custom Deluxe locomotives, although you will see it in our standard Light, Medium and Heavy weatherings occasionally. Every class of locomotive has a different sweep pattern and we make a unique wiper sweep for every different class.

TUMBLEHOME

This area is nicely represented showing the effects of wind on body side from water subject to air turbulence. We try to use prototypical effects rather than guess where rust and grime might appear. Highlighting aesthetically-pleasing prototypical grime is something we particularly enjoy.

STREAKING ON THE SIDES OF THE LOCOMOTIVE BODY

This effect is some of the most impressive and intricate we offer on models, and can give a really impressive finish. It represents dirt and grime on the sides of locomotives that has been subject to either high speed wind, extensive water streaking, or perhaps bits of the locomotive that the washing plant wouldn't have reached.



BOGIE GRIME

We can use up to eight different shades of browns, blacks, rusts and other colours to give an eye-catching appearance that will leave you wondering if this is a model or the real thing. Look at the bogie from a different angle and you might move more colours into view - just as you would expect if you were inspecting one in real life.

SPECIAL OFFER



Spend £200 or more on TMC's Value Weathering in a single order and we'll arrange collection of your models free of charge from your home address, as well as deliver them back to you, completely free! If you take up this offer, you'll also be entered into our competition to win a free locomotive of your choice from our website, worth up to £150.00. If you see a locomotive that costs more, you can opt to pay the difference.

BRM GUIDE TO WEATHERING



We've collated your weathering questions from RMweb and put them to Steve Johnson, owner of Grimy Times model shop. Here are his solutions to your common problems.



eathering isn't difficult to understand, but getting it right if you decide to give it a go yourself can be far from easy. Where do you start, what products should you use, and how do you replicate dust and mud? These are all common questions for beginners.

We caught up with Steve Johnson at Grimy Times for insight on what you can expect when you start out weathering your locomotives - a lesson on the importance of getting the basics right.

BRM: Enamels or acrylics – which is better? Steve: There is no definitive answer to this as it is mainly down to personal choice. Both have advantages and disadvantages. The drying times of both media can work for and against you - acrylics can dry very quickly within your airbrush, requiring a full strip down and clean if left even for five minutes, whereas enamels take much longer.

I tend to find enamels the best to work with but you need to bear your choice in mind when choosing your equipment, as you will be using solvents to clean up. A proper extraction spray booth and quality face mask are imperatives. You cannot put a value on your safety. Acrylics are not as strong-smelling as a rule so that might be an advantage if you don't have a work area separated from other family activities.

BRM: Can weathering powders be used on their own or is paint always needed as well? Steve: Although weathering powders/pigments can be applied to a pristine model, the bulk of them will wear off with handling unless sealed with a fixative. The best way, if you are using powders, is to varnish your model first and let it dry. That way your powders have something to adhere to. Powders can be mixed with paint/PVA glue to give texture. If you mix them, don't use

much paint. What you're after is a drier mix which is useful for stippling rust effects. I always finish my models with powders after the airbrushing processes are done as it gives textures you cannot get by airbrush alone, and it brings your model to life.

BRM: Does weathering have an impact on locomotive resale values?

Steve: Weathering, if done well, can certainly enhance the value of a model but you will find that you will have a much smaller market place for it, because many like to keep their models pristine. However, a poor job will reduce its value.

If you are considering having a go, the best way to start is to buy the cheapest second-hand items you can and use these to practise on before going on to your expensive models. If you have any doubts in your capabilities, it might be worth paying to have it professionally done. That's a lot better than ruining a model which has cost you a lot of money.

BRM: Where do you draw the line? How do you know when to stop weathering?

Steve: Ideally you need to have a picture in your mind of how you want the finished article to look. Another good way is to study prototype pictures of the item you are working on. If you are unsure of what you have done, walk away and come back to it with a fresh pair of eyes as most processes can be removed if you are not happy with them. You will be quite surprised, when you start looking at pictures of how varied and extreme some weathering is; there is a prototype for most things!

BRM: What are the most common mistakes people make when weathering at home?

I think that a lot of the answers are in the previous two questions. It can be easy to carry on weathering until it is overdone..

A lot of the time, less is often more on the finished item. Subtle touches can be very effective, like limescale, water spillage, etc. A lot of people tend to go over the top on rust effects, making the model look like a resident of a scrapyard rather than a neglected working locomotive. Again, study prototype pictures and practise techniques and know where to draw the line.

BRM: Is an airbrush a necessity?

An airbrush isn't a complete necessity as many outstanding models have been created with dry-brushing, powders or washes. However, they are invaluable for building up varying layers of different colours and repaint jobs, as only the best brush painters would get the level of finish of a sprayed item. If considering buying an airbrush, buy the best quality you can afford as you get what you pay for, and don't just leave it in the box. You need to use it to develop your skill, as I hear so many people say they have got one but are frightened of using it!

BRM: How much artistic licence do you allow yourself on weathering projects?

I always have a picture in my mind of how I want the finished article to look, whether that's a customer's locomotive or one for stock. Obviously, if a customer has supplied a picture of an item, your parameters are set by the picture. As my business has been built on repeat custom, you get to know what your customers like/dislike and meet their requirements in that way. I am never frightened of trying out new methods. Not only that, a lot of good effects can be achieved from making mistakes!

BRM: What's the hardest thing to replicate and how – dirt, rust or fading?

All of these effects bring their own challenges. The key to success is restraint

and taking your time with a goal at the end of it. Remember, study pictures of the real thing and don't get carried away!

Your questions answered

 I've always thought that models that have been 'heavily weathered' just don't look as realistic as more lightly weathered examples. I'm aware of colour scaling effects - do similar rules apply with weathering?

Steve: You can find a prototype for most things using prototype photographs. Some locomotives got a lot dirtier than people tend to realise. The key to a realistic group of locomotives is variety in the styles of weathering. A finish which is extremely popular with my customers is a shed-cleaned look or oily rag finish. Colours sometimes don't scale down in the correct shade, so you often need lighter or darker tints/shades of the colour you want to get the same effect. Lighting can also have an effect on the colours used as well, especially the different lighting temperatures of LEDs or fluorescent tubes.

• I'd like to know how to deal with wagon roofs, especially a shiny new 'out of the box' van with a perfectly smooth roof? Steve: There are varying ways of achieving this, from a plain air-brushed finish which can be enhanced by rubbing sooty weathering powders/pigments on to the painted finish to give textures. A more extreme way is to score some planks in patches on the roof, which are then painted a worn wood colour. Then, when dry, cover these patches in Humbrol Maskol and paint the complete roof. After the roof is dry, remove the Maskol with a pair of tweezers and you will have the effect of the roof's canvas finish being worn away in patches, revealing the planking underneath. Again,

this can be blended in with powders/pigments.

 I'd be interested to know Steve's method for reproducing faded paintwork on locomotives and rolling stock. I'm keen to try the "dot technique"

Steve: There are a few ways to fade paintwork down. One is washes of a lighter shade of the painted colour. However, if you are happy using an airbrush, the best way is to lightly mist over your item with white, and then slowly build up the level of fading you require. This process is better being done, along with the wash method, as the first step of your weathering process. You can give a totally different look to your model with fading, as some colours, especially the likes of BR Blue, are notorious for fading.

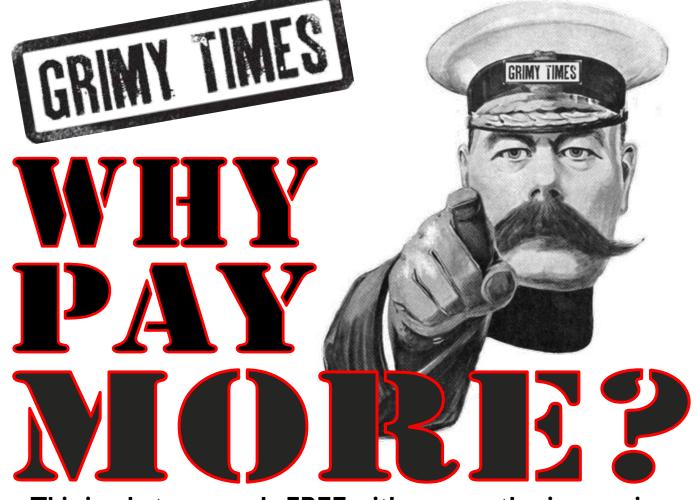
 Besides cleaning the body of a locomotive, is there a barrier that one can put down to prevent the oil discolouration or should you use acrylics? I prefer enamels as they take longer to dry and are better to work and move around surfaces.

Steve: If oil is showing on your model before you start the weathering process, it's important to remove it with a de-greaser on a cotton bud. After weathering with the airbrush, all my models are coated with a matt or satin varnish before other detailing (powders, water, oil stains, etc). Doing this should stop discolouration as well as give a base for pigments. I only use enamel paints and varnishes, because I feel they are much harder wearing.

Hopefully you'll be able to progress your techniques. Share your efforts with **BRM** - send an email to brm@warnersgroup.co.uk.

A Bachmann SR 'Schools' No. 30852 Sir Walter Raleigh after passing through Steve's weathering booth. With time and patience, you can create great effects such as these. too.





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USING WEATHERING POWDERS

Weathering powders should be considered a useful tool when creating realistic models, though not the sole implement. I find the use of powders over pristine paint to look out of place because their coverage can be thin. Weathering powders work best over a matt paint finish, hence if used on an RTR model, I'd advise a little airbrush work beforehand. Consider powders as a semi-permanent form of weathering. They will stay in-situ if left alone, but must be sealed if you intend to handle the model. Buildings aren't much of a problem, but locomotive, coach or wagon sides should ideally be sealed with a quick spray of matt varnish paint.



This building was painted using Lifecolor acrylics on the May 2019 episode of BRM TV. You could leave this building as it is, but weathering powders are particularly good at depicting an accumulation of dry dirt. This might include chimney smoke on buildings or locomotives, diesel exhaust

particulates, brake dust or track dirt. Only apply a little powder to an old brush, testing on a piece of tissue before you touch your model.



Working with weathering powders is a messy job and a great deal of what you apply to your model won't stick permanently as you work your brush over it. Holding a container underneath prevents waste and will allow you to re-use it at a later date.



Avoid applying too much powder at any one time. Stand back from your work and check it before applying too much. Providing you haven't permanently fixed it with a matt varnish, you can wash the majority of powders from models under a tap with water and an old toothbrush if you're not happy with the results.



I regularly mix weathering powders with paint to add texture, or change their colour. Mixing DCC concepts' red oxide powder with Comart's Dry Rust produces an excellent thick matt colour for the painting of bricks; particularly effective when dry-brushing. Alternatively, powders can be mixed with white spirit to create custom washes to fill panel lines to depict a dirty object that has been subjected to rainfall.

BRUSH PAINTING

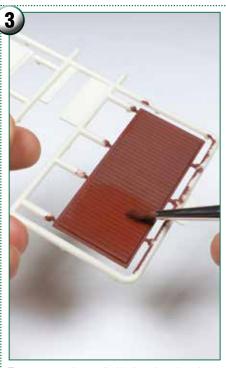
You dip your brush in a tin of paint, then rub it up and down your model – simple, right? Not if you want a good finish on your model. Painting models isn't like painting emulsion on your walls at home. The model must be clean, the spread of paint must be even and the way it's applied must be methodical. Many a model can be brush-painted, though with the latest RTR models having such an excellent finish, it is best respraying these with an airbrush if a repaint is required.



Applying paint directly to a plastic or brass model without first applying a primer is never advised because the paint can be easily chipped or scraped away with a fingernail afterwards. Apply a primer that is specific to your material, such as an etch primer for brass, either filler or standard primer for plastic or a sanding sealer for wood. Work a brush with soft bristles up and down the piece, following the direction of contours. Never apply too much paint with any one application, use multiple thinner coats instead.



The chemical structure of different paints means that they can react with each other. As a rule of thumb, use the same type of paint from the same brand when painting a project. For enamel paints, branded thinners are recommended for best results, though if you want to use a white spirit to dilute paints, test on an inconspicuous area first. Keep a small piece of material to hand and paint or spray each of the layers in turn that you would do on your model. At least if a reaction occurs, it won't be on your model.



Top coats can be applied before the primer has fully cured to increase the bond between the two layers of paint, though in the case of solvent paints, a few days might be required before the primer is ready to be coated. Ensure an even coverage of paint, avoiding brush lines.

NOT JUST WEATHERING





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We're constantly trying to increase the quality of our weathering and the service we provide.

Our fast weathering turnaround times mean your models will be back on your layout within 1-2 weeks, and sometimes under a week!

With wagon weathering starting at just £3.50 and Locomotives from £20.00 it's great value, and of course we can also take it to the next level with our deluxe weathering service.

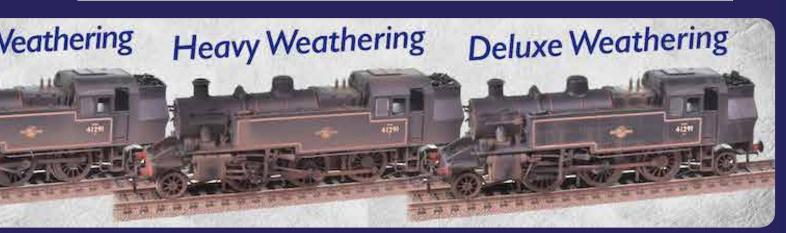


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Value Multiple Unit Weathering	£35.00	£40.00
Standard Multiple Unit Weathering	£50.00	£55.00



ow to weather buildings



This Atlas warehouse has been weathered using dyes.

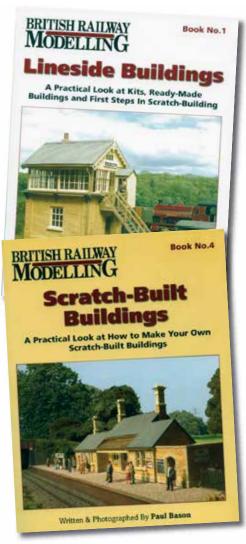
ight weathering can be done to roofs and walls using a 'dry brushing' technique. Use a flat paintbrush just dipped into acrylic paints – take off any excess paint with a tissue. Brush along the roof tiles and the brick courses. Some paint will stick to the detail on the walls and roof. Once the paint is applied partially rub it off using a tissue so that the weathering remains in the brick courses and between the tiles.

Weathering can also be undertaken with an airbrush or charcoal or chalk pastels. Watercolours are another cheap and cheerful way to weather these buildings – just run some diluted paint

down through the brick courses.

A different method is to use weathering dyes such as those made by Joes Model Trains (www.joesmodeltrains.com). These weathering dyes are water or alcohol soluble and provide good adhesion even on glossy paint finishes and smooth metals. They dry matt and can be sprayed with an airbrush or brushed on with a flat paintbrush. Use thin washes of the dyes starting at the top of buildings and let the diluted dye drip down through the brickwork.

As with all weathering unless you want your building to look very dirty go easy on the weathering techniques.



FOR MORE INFORMATION

- Right Track DVD No.7 Building Buildings
- Railway Modelling: the Realistic Way (book)
- www.joesmodeltrains.com

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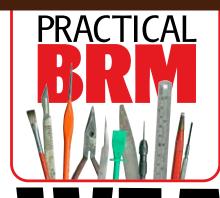








BRM GUIDE TO WEATHERING



HOW TO...

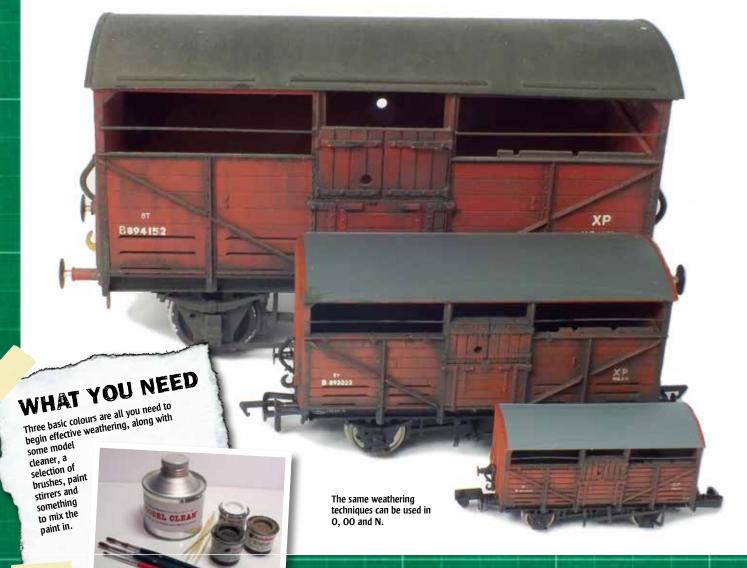
BUILD AND EATHER GAUGE

There is no great secret to effective construction of rolling stock. And **John Emerson** shows you how to weather using just three basic colours!

ver the past few months I've been approached at shows by modellers wondering how difficult it is to make the move from the smaller scales to 7mm scale. I have to say that it is not that difficult as there is now a reasonable range of

ready-to-run locomotives and stock to choose from enabling the new convert to get something up and running in a reasonable amount of time. As always, the major stumbling blocks are time, available space and what your budget will stretch to! However, part of the attraction of modelling in the 'senior scale'

has always been building your own rolling stock and with a wide range of plastic (or mainly plastic) kits available from the likes of Parkside Dundas, Slater's, etc, this is as good a way as any of 'getting your eye in' before moving on to more complicated building projects such as white metal and etched-brass kits, etc.



BUILDING THE PARKSIDE DUNDAS GUNPOWDER VAN



arkside Dundas released their latest 7mm scale kit, a 9' 0" wheel base LMS/ BR Gunpowder van, at the Gauge O Guild's annual Guildex show at Telford last year. The kit is an accurate and versatile model as it can be constructed to represent an LMS or BR built D. 2093 vehicle (55 vehicles built at Wolverton between 1943-48), or one of the later but in all respects identical BR vans to Diagram 1/260 built from 1953-56. You could also finish your model as one of the 20 vans from Lot 1349 built for the LNER. All of these gunpowder vans were rated at 11 tons running on 9'0" wheelbase underframes and, apart from the vacuum fitted BR vans built on Lot 2689, were unfitted. Under BR many later had vacuum brakes fitted or were through piped. Other alterations included Oleo or Dowty buffers and various styles of axlebox. Some vans also sported wooden chalk boards on the sides and ends as fitted to 12 ton ventilated vans. Vans fitted with the vacuum brake or through piped also had a tiebar fitted between the 'W'-irons.

The injection-moulded components were free of flash, requiring only minimal cleaning up, for the most part carefully paring away any obvious mould lines with a knife blade. As with any kit, taking time to study the assembly instructions and having

a 'dry run' before finally cementing parts together will pay dividends. Construction is quite easy, with the van body being assembled first using

a suitable liquid solvent applied with a small brush although you will need to decide on which version you wish to build before you start. To add a little variety I built the sample kit as a BR-built van fitted with Oleo buffers and vacuum brake.

PARKSIDE DUNDAS

Scale/gauge: 7mm/0

D.2093 Gunpowder van

Price: LMS/LNER/BR

(PS112) £33.90

Millie Street, Kirkcaldy, Fife

For this you will need to source a brake cylinder and vacuum pipes (I used ABS white metal castings), and lamp irons (Parkside, again from the spares box). You will also need some nickel silver strip for the tiebar. The only deviation from the instructions was to replace the brake gear cross rod with a more robust piece of brass rod, and the rather fragile plastic brake levers with ABS white metal castings. Holes were drilled in the floor to prevent any possible build up of solvent fumes in the body once the roof has been glued on. The coupling links are now supplied in brass, which I discarded and replaced with iron links that I had in stock.



THE LAZY MAN'S GUIDE TO EATHER

aving presented a painting and weathering demonstration at shows over the past few years, it always surprises me that most modellers are terrified of weathering their stock. I guess this is more understandable in the larger scales where the value of rolling stock can be considerably more than in the smaller scales. A degree of weathering can add character and a sense of mass to your models - there is no need to overdo it though! There is no great secret to weathering freight stock, whatever the scale you model in - it just takes lots and lots of practice. A good ploy is to find

a cheap scrap wagon to practice on, or get a piece of plastic card, scribe some horizontal lines to represent planking, spray with primer and use that as a practice piece. Illustrated are three cattle vans, each of which has the same weathering technique applied to them to show the

effect in 2mm, 4mm and 7mm scales.

Being essentially a lazy modeller, I like to get things done reasonably quickly so after experimenting over many years here is the method I have evolved - it seems to suit me and give me the results I require, you may disagree! First of all throw away all those made up colours - frame dirt, track dirt, etc - you really don't need 'em, they will cost you a fortune, and all your models will end up looking exactly the same as everyone else's.

My basic weathering colours consist of matt black, matt khaki, and matt white - stage painters have used a similar restrained palette technique for theatrical backscenes for years so we can't go far wrong! The majority of paints I use are from the Humbrol range but you may have your own favourite brand. Use an airbrush if you wish - I prefer to brush paint once the model has been sprayed in primer to give more variation between models. You will also need something to mix colours in - old tin lids or a CD case, etc, - paint stirrers (cocktail sticks), plenty of white spirit and a jar to pour it into, plus a selection of brushes. Be warned that weathering takes its toll on brushes - they will become guite worn guite quickly so keep them separate from your 'best' brushes. Obviously with RTR models we will be weathering over a factory applied paint finish unless you spray the model with primer first.

A degree of weathering can add character and a sense of mass to your models – there is no need to overdo it thouah!

BRM GUIDE TO WEATHERING

PRACTICAL

PAINTING THE ROOF



A strip of masking tape simulates the canvas roof covering - you could scribe the roof planking on first. Obviously there is no need to do this on steel roofed vehicles.

cover van roofs with masking tape, which will give a fairly subtle textured effect in 7mm scale although may not work in smaller scales. Seal the edges with solvent and when dry use a mix of matt black, white and khaki to give an off-grey roof colour. There is no need to use your best brushes or fine art painting techniques on van roofs – whack it on!

With the van body completed attention turned to the underframe. The solebars may need to be trimmed to fit between the headstocks, and alternative parts are supplied to enable the LMS/LNER version or later BR build to be constructed. The only other alteration was to substitute Oleo buffers for those supplied in the kit - mine came from a Just Like the Real Thing kit conversion project. No major problems were encountered during construction and the kit builds up into a nice representation of the prototype.

Once complete the model was degreased. I used lighter fluid swabbed over the model with tissue paper, but The kit was a

leisurely and

satisfying build and

makes up into an

of a long-lived

prototype

you could just as easily wash it in warm soapy water or use IIF (CIF) although both will require thorough rinsing to get rid of any residue. Alternatively use one of the proprietary model cleaners available through the trade. The choice of livery will depend on what era you are modelling. As my chosen era is

BR the finished model was sprayed with Halford's Red Oxide acrylic car primer, which approximates to BR bauxite. Roof, solebars, wheels and underframe were brush painted in Humbrol matt enamels, although it is entirely possible to mask these areas off and spray paint them. Details such as lamp irons and ends of brake levers were painted white, but the van was left unweathered for the Doncaster show.

Waterslide transfers are supplied in the kit for LMS, LNER and BR versions and these, along with some 'Pressfix' style transfers from a Parkside 'Parto' van kit were applied using a decal wetting

solution (such as Humbrol's DecalFix). Apply to the transfers once they are in position

this softens the printed image and enables it to grip the painted surface more firmly. It is also useful if you have to apply transfers over any raised rivet detail, etc.

accurate representation This kit was a leisurely and satisfying build and makes up into an accurate representation of a longlived prototype, although purists will note the lack of rivets along the bottom

TOP TIP

PAINTING SOLEBARS, WHEELS AND UNDERFRAME

Never use pure black on models unless it is 'knocked back' slightly with the addition of another colour. Mixing a little khaki should give you the desired effect below the solebar – wheels and some parts of the underframe can appear quite dusty so introduce a little more khaki.

of the bodysides. These could be punched out from thin styrene and added while the sides are still in the flat. I would also prefer to not have blackened buffer heads, my preference is to buff these up and remove the blackening to get back to bare metal. But as a first step into building something for an O gauge layout it is ideal and is to be thoroughly recommended.



ADD WEATHERING

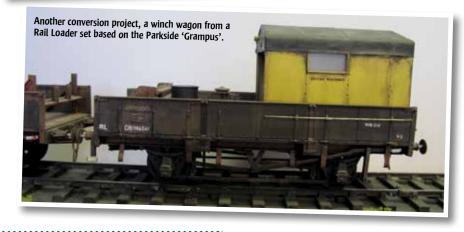
se a mix of matt black and matt khaki diluted with white spirit for generally weathering stock. First I flood the colour on, then dip the brush in white spirit, wipe on a lint free cloth or tissue and use the brush to lift colour off. Essentially what we are doing is applying colour then washing it off little by little until the desired effect is achieved. I find the advantage of enamel paints is that they have a longer drying time than acrylics and so allow a little more time to 'work' the paint. Streaking caused by water coming off the roof is created by gentle downward strokes of the brush - before the paint has hardened you can also use a wide (1" or so) brush to give a more general streaking effect. Streaking and splashes caused by track dirt can be achieved by brushing upwards from the solebar, or by dry brushing when the main weathering has dried and hardened.

The mixes can be varied by altering the amount of white or Khaki added - experiment on an old wagon or piece of scrap plastic to get a feel for the technique and don't worry if you can't get exactly the same mix of paint, no two wagons ever weathered to the same degree on the full size railway! The paint mix should naturally flow into planking and gather in corners, along stanchions and diagonal strapping, etc, so when lifting paint be careful not to remove it from these areas. You may find it necessary to slightly alter the technique on plywood or steel sided vehicles. After flooding colour onto the vehicle use a sponge or pad of tissue (not the patterned kitchen towel sort!) to lift excess paint. You can also flood white spirit on to force pigment into the edges of the strapping etc.





Converted and weathered Parkside Dundas GWR brake



EVEN **LAZIER** WEATHERING!

Left Applying Weathering Solutions transfers to a Bachmann 'Covhop'.

Below The finished result with a little extra weathering added.

These notes are only intended as a brief introduction to a relatively quick and easy way to weather rolling stock and I suspect that most modellers will want to amend or alter the way they apply weathering or develop their own particular favourite techniques. There is also plenty of scope to further refine your weathering by adding rust streaks, oil stains, etc., — although this will require additional colours and washes. Perhaps we will look at this in a future article.

or those who are still terrified of weathering, a useful range of weathering effect transfers are now being produced by US based Weathering Solutions. Available for N or HO scale the range of easily applied effects include old dark stained rust to light surface effects. We tried out some of these transfers on the new Bachmann 'Covhop' and they are quite effective, although as they are designed for use on American outline stock we would suggest the N scale decals are more suited to British OO and the HO would be effective for 7mm modellers. However, they provide another useful tool in the modeller's armoury.

BRM meets... GC WEATHERING

Weathering is an important part of the model railway business; we catch up with GC weathering to discuss the challenges of working in the industry.



If you weren't a railway modeller, the idea of buying something and immediately adding grime, rust or dirt would seem, to be frank, quite ridiculous. Imagine buying a car and purposely driving it through the biggest puddle, or putting on a new jumper and immediately going for a roll around in the mud, you just wouldn't do it.

However, getting your latest locomotive and adding dirt to represent wear and tear, or 'weathering' as it is better known, has become an essential practice for the hobby. It's all part and parcel of creating the ideal scene, and adding authenticity to the right era and geography.

GC Weathering is one of the biggest names in the business and we caught up with the owners, Carol and Glen, to find out what's going on in the market at the moment and how they plan to stay ahead of the competition.

A little background

Being airbrush artists for over 30 years, Carol and Glen started out working on commissions for museums and doing private work weathering boats, planes and tanks. It wasn't until seven years ago, when Carol was approached by a railway modeller to weather some model trains for a specific layout he was working on, that the idea of branching out into trains was born.

Today, GC weathering's clients include model shops, companies and numerous private commissions, and business is booming! Glen currently has a full-time job, so the core of the work is completed by Carol in her workshop, situated at the back of their garage at home.

There's currently a 12-week lead time on products. However, Carol works on a diary system and will contact customers when it's close to their designated slot to arrange collection of the locomotive; that way the customers aren't without their possessions for weeks at a time.

"We transferred our military knowledge to locomotives because we knew how to do airbrushing by hand and its just gone from there," Carol explained. "A lot of our business comes from word of mouth and shows. Getting to know the customers is so important, because we like to have that interaction and face-to-face contact. You learn more about what your customers want - everyone is individual."

Research is key

There's a lot of research which goes into the weathering business, and using photography is key for any era. The earlier the period, the harder it gets for Carol, who has had customers request models to be weathered as early as the Victorian era in the late-1800s. As you can imagine, trying to get photographs of that time is tricky and sometimes artistic licence is needed.

"People like to paint a picture, especially if it's somewhere they used to know as a child. That's very common, so we do a lot of weathering from photos," said Carol. "We do a lot of research. Even if a customer comes to us and gives us photographs and the different numbers they want for the locomotives, we will still do our own

research to find out more; like if they were washed regularly, if the roofs stayed dirty, or how different companies looked after their stock."

The Great Western, for example, used to keep their locos fairly clean but the motive power in Gateshead would be absolutely filthy. It varies from sector to sector.

All about dirt

Weathering locomotives is a complex and time-consuming task, with layer upon layer of details added until the right effect is created. However, according to Carol, weathering trains, in comparison to other models, is not so different.

"In general techniques, it's not that difficult, it's just colours and effects mainly. Trains won't have the level of mud like tanks and they wouldn't look as wet, so it's the effects that really make the difference. We adjust our colours and whenever we do a job for a customer, we mix our paint colours to match the era they're modelling."

There's not much difference in difficulty when it comes to size either; Carol will simply adjust her techniques to cope with the style. Doing a lot of the detail by hand, pre-shading, and deepening of the grilles is one of the firsts steps before the airbrush even goes near a model. "The airbrush really just ties everything together," she explained. "It blends everything in, tones everything down and adds the finishing touches, and then the whole thing gets varnished. We build it up gradually until the locomotive looks right."

The most challenging aspect for Carol is ensuring that it's not overdone. That's what GC Weathering specialise in - making sure the detail is there.

Timings vary depending on the model, but generally the process will start by washing the roof and once dry, picking out the seams next to the doors to help them look deeper. If there is a larger order, Carol will try and do each stage at the same time across all of the locomotives, to help speed up the process.

GC weathering deals with all scales of model locomotives and rolling stock and offers a complete weathering service. The company's pick 'n' mix options are really popular and allow customers to customise each locomotive. The 20 different options to choose from are available on the custom weathering packages free of charge.

According to Carol, the trickiest model to weather is a hopper wagon as there's a lot to be sealed inside, such as adding dirt or rust,

before you even get started on the outside of the model.

Model variety

As well as hopper wagons, Carol has also had a few requests to weather vehicles like buses and trams, which can be equally tricky. "We don't tend to do stuff like that very often. They can be pretty varied in terms of cleanliness, so that's down to artistic licence really. You have to use your imagination and just go by what customers want."

The strangest thing we've been asked to do was by our local Rotary Club, which wanted its reindeer painting for the Santa sleigh for Christmas. They were about 4ft tall! So, we had to say we were really sorry but we couldn't fit them in our spray booth!"

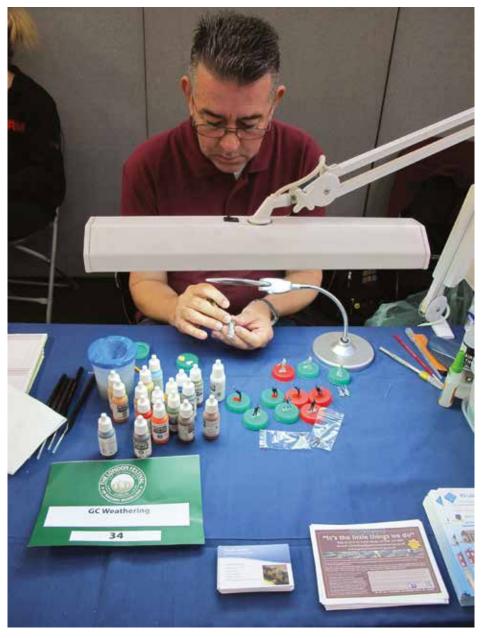
Carol will sometimes get asked to weather locomotives that are halfway through being washed on the layout scene, which can be a challenge. Or, if a customer has a shunting locomotive, they will request to make them oilier, as they're not running down a mainline track, which ends up being a more greyoily colour rather than dirt.

Weathering at home

With so many video tutorials and guides available online, many people try to weather



BRM GUIDE TO WEATHERING



models themselves. We asked Carol where people should start if interested in giving it a go, and her advice is to begin with weathering powders. Just start off with a couple of wagons and add the weathering slowly until you build it up and get the effect you want.

Sometimes people will get it wrong, though, and Carol admits, correcting some mistakes can be difficult.

"A lot of people try weathering models themselves and some people will have trouble, especially if they paint it. If they've tried to change the locomotive and painted it with a brush and it's left brush streaks, that's quite hard to get rid of, especially if they've used enamel paint. With acrylic paint you can get most of it off, but if they use enamel it goes really hard - you have to strip the body completely back to the plastic and that's a lot of work. Renumbering can be difficult too. If customers do it themselves or paint over it, the colour of the cab can be

Pick 'n' Mix

Offering exclusives gives Carol another option to add on the pick 'n' mix selection for locomotives. There are many different effects customers can choose.

For example, if a customer has 10 Class 37s, they can have each one with a different effect to make it individual. It also enables Carol to showcase styles that the customer didn't know about or has never asked for. Choices include bigger fuel stains, larger diesel exhaust pigment, silver buffers, white buffers, greasy buffers, and rusty buffers.

"It's quite bespoke what we do. Some weathering companies will work on a conveyor belt type concession, where one person does one colour and the next does another and you get into a habit of doing the same lines in the same places. Which means there'll be umpteen locomotives that look the same. We're different, we do one order at a time, and everything looks different to make it personalised. We have a customer in Kent who has over 40 Class 47s and every single one looks different. A lot of them have been renumbered, too.

A lot of our customers come to us and they are collecting or building up their collection because they've bought what they want and they're adding to it and getting them weathered. Some don't have layouts; they're just getting all their stock sorted first. They tend to know what they want and what era they're going for, and also how dirty they want them to be."

Among GC Weathering's customers are the Beefeaters of the Tower of London, as well as regulars from all over the world, including Atlanta, Lanzarote, Portugal, and as far away as Australia and Japan.



HARDER & STEENBECK









PAINT EASY THE HARDER WAY

<u>Praetieal</u>

HOW TO ... WEATHER A DIESEL LOCO

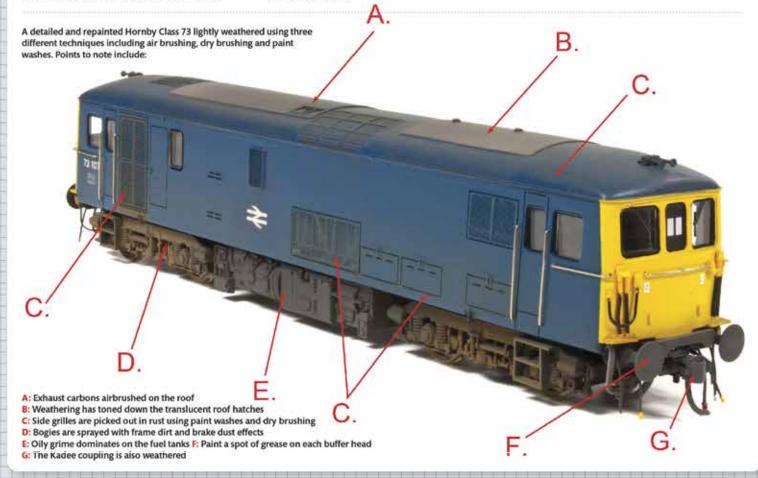
Nigel Burkin provides some guidance on producing a realistic finish on ready-to-run locomotives while explaining some of the techniques involved.

ivery application on RTR locomotives has improved beyond recognition in recent years, including many old favourites which have been given a new lease of life. The emphasis in locomotive and rolling stock modelling has switched from kit construction and conversion to detailing and weathering models straight from the box. With finishes that are carefully researched and applied, it leaves the modeller little to do except apply detailing parts and make the model appear as if it has been in traffic for some time, assuming an ex-works appearance is not required. Weathering is one of those things which can make or break a model. You only have to look at some of the early attempts by the mainstream manufacturers to satisfy this demand to see that a quick blast with brown or even black paint does not bring out the character of the prototype particularly well.

My preference is for purchasing models finished in pristine condition, renumber and rename them if necessary and apply some



A selection of the tools and materials required for basic weathering application including paints and weathering colours.





character using a combination of weathering techniques. They are fairly simple to apply and of the six I use regularly, only one applies to models when in the process of being repainted: pre-shading. Nonetheless, it is an important one to remember and may be used on all manner of modelling projects including rolling stock and buildings, as can all six of the techniques described below.

Weathering requires a degree of courage to try for the first time. Given that many RTR models sit in the £75-£125 price band for a DCC-ready example, taking dirty-looking paint and applying it to a beautifully applied livery seems daunting. It is a good idea to practice on an old model or spare bodyshell before tackling an expensive model. Take your time, choose colours carefully and use little, rather than large amounts of paint. Practice makes perfect.

When tackling a new loco, I add the detail parts first before applying weathering. The workbench is cleared of tools and cleaned of dust and plastic shavings before I place the materials I plan to use on it. A foam pad is always to hand on which to rest the model whilst working on it. When airbrush weathering is involved, the spray booth is prepared and the compressor warmed up.

Choosing weathering colours

There is a huge variety of paints and other products available for weathering and some research is needed to find out exactly what is available and how they are used. I prefer to use enamel paints than weathering powders and similar materials as they are more durable. Weathering powders do not withstand much handling and require overcoating with matt varnish to seal them, losing some of the desired effect in the process. Acrylics work well but dry much quicker than enamel paints. Whilst this is a benefit in finishing a model quickly together with simple cleaning with water, the faster drying time means you have to work fast and

that is not ideal for achieving certain effects where slow considered work is better.

Use photographs to help choose the correct colour shades. Some locomotives weather differently to others and the degree of weathering will depend on age, the era (modern trains of the privatisation era are generally kept clean) and whether it is steam, diesel or electric. Another consideration is the livery on which the weathering is being applied - the lighter the livery colours, the less colour needed to make the locomotive appear dirty. I consistently use a small number of colours to achieve a relatively light level of weathering, concentrating on those areas that a coach washing plant cannot reach: the roof and underframe. I use dark grimy greys for oil, grease and exhaust dirt and bodyside streaking. 'Frame Dirt' is a great underlying grime for underframe and bogies whilst a yellow rust colour makes good brake dust. I do not use red based rust colours except in tiny quantities. Avoid using pure black or white as these rarely occur - use light greys and very dark grey shades instead as these will appear more natural.

Six essential techniques

1. Dry brushing

An effective technique for highlighting detail on

Tools and materials

- Paint brushes past their best for dry brushing
- Flat paint brush for wash application
- Make-up sponges for heavier weathering effects and streaking
- · Airbrush equipment
- · Kitchen paper for dry brushing work
- Paint mixing sticks
- Appropriate paint thinners
- A variety of different containers for thinning and mixing paint
- Weathering powders

a model without using large amounts of paint. Simply wet the tip of the brush with paint and then brush it against kitchen towel to remove as much as possible, so only the barest trace is left. Apply to the model by brushing over raised detail until some colour is left behind. This method is very controllable and can be applied to certain details resulting in quite subtle effects.

2. Air brushing

Many great effects can be achieved with the airbrush, however, it requires a great deal of control to minimise paint application so the weathering effect is not overdone. It is ideal for general grime on underframes and roofs where dust from brakes and exhausts results in a more even application of dirt. Spray painting is also used to apply colour before streaking with a cotton bud, cloth or sponge dampened with paint thinners.

3. Pre-shading

One method for highlighting recessed detail is to apply black to grilles, door lines, footstep recesses and so on using an airbrush during the painting of a model. The margins of the painted areas must be soft rather than masked to create a hard line. When completing the painting of a



Dry brushing involves the application of the smallest amount of paint to highlight raised detail.

model, care is taken not to fill the recessed detail with paint resulting in the black striking through to create contrast or a shaded effect. This method does not work for models that have already been painted and finished.

4. Paint washes and wiping off

Recessed detail on a painted and finished model can be highlighted using thin washes of grimy grey paint thinned to a ratio of 15:1 or more and applied in very thin washes. The effect can be built up over several applications until the desired result is achieved. The same technique can be used to create weather staining and streaking along the shoulder and down the sides of a loco as if rain water has combined with dirt on the roof. Washes using less thinned paint will also produce interesting streaking effects as will wiping the model down with a make-up sponge.

5. Weathering powders

Weathering powders are growing in popularity for creating a variety of effects including rusting, general grime and toning down the finish of a model. Some modellers apply them dry using a brush, they can be mixed with water and even hairspray to achieve different effects. However, weathering powders do not stick as well as paint and may rub off with excessive handling so should be sealed with matt varnish to protect them, although be aware that varnishing will reduce the effect of the powders too.

6. Sun bleaching and paint fading

Paints eventually fade in bright sunlight and after prolonged exposure to the weather. This effect can be achieved by applying more than one coat of matt varnish to a model using an air brush. It can also be introduced with very thin washes of light grey paint to a finished model before other weathing effects are applied. Interestingly enough, oily grime, exhaust dirt and rust never seem to be affected.

A typical sequence of weathering

- Underframe and bogie sideframes are spray painted with a thin coat of 'Frame Dirt' then gently over-sprayed with a light yellow rust to represent brake dust. The body and wheels are usually masked for this process.
- The locomotive is returned to the work bench and the wheel sides painted with frame dirt.
- 3. Bodysides and roof are given a thin wash of roof dirt colour, a suitably grimy grey shade thinned to around 20:1 with thinners. This picks out recessed detail such as door lines, grilles, etc. Washes are best applied in several very thin applications building up to the desired level.
- 4. The lower edge of the body may be treated with dry brushing, usually with light yellow rust colour and dirty black to represent brake dust and oily grime from the running gear.
- The model is returned to the spray booth for dusting the exhaust carbons around the exhaust port and along the roof.
- 6. A final delicate spray of roof dirt may be applied to the fuel tanks and to the bogies to give the model an oily appearance in places.
- 7. Touch-in painting can include the application of oily steel colour to foot step treads and the buffer shanks together with a spot of dark grey on each buffer head to represent the spot of grease often applied to them.



Airbrush weathering is used to create general grime and weathering effects such as the effect of exhaust carbon.

Phoenix Precision paint colours

- · Frame Dirt (P960) · Roof Dirt (P962)
- Brake Dust (P963)
- Track Colour (P977) rusty rails
- · Dirty Black (P981) good grime colour
- · Weathering (P982) sooty deposits
- · Oily Steel (P986) · Brown Rust (M904)
- · Yellow Rust (M905) · Oil Leakings (M912)
- Dull Black (P975) and Dull White (P976) for paint shade mixing only

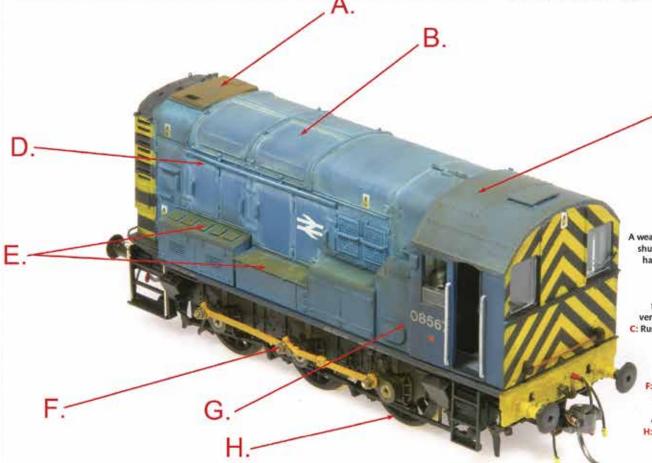
Railmatch enamel and acrylic paint colours

- · Acrylic steam loco weathering pack (101A)
- Acrylic diesel loco weathering pack (103A)
- · Enamel steam loco weathering pack (100E)
- Enamel diesel loco weathering pack (102E)
- Frame Dirt (402) Roof Dirt (403)
- Light Rust (404) Dark Rust (405)
- Sleeper Grime (406) Matt Varnish (407)
- · Weathered Black (412) · Oily Steel (415)
- Brake Dust (416)

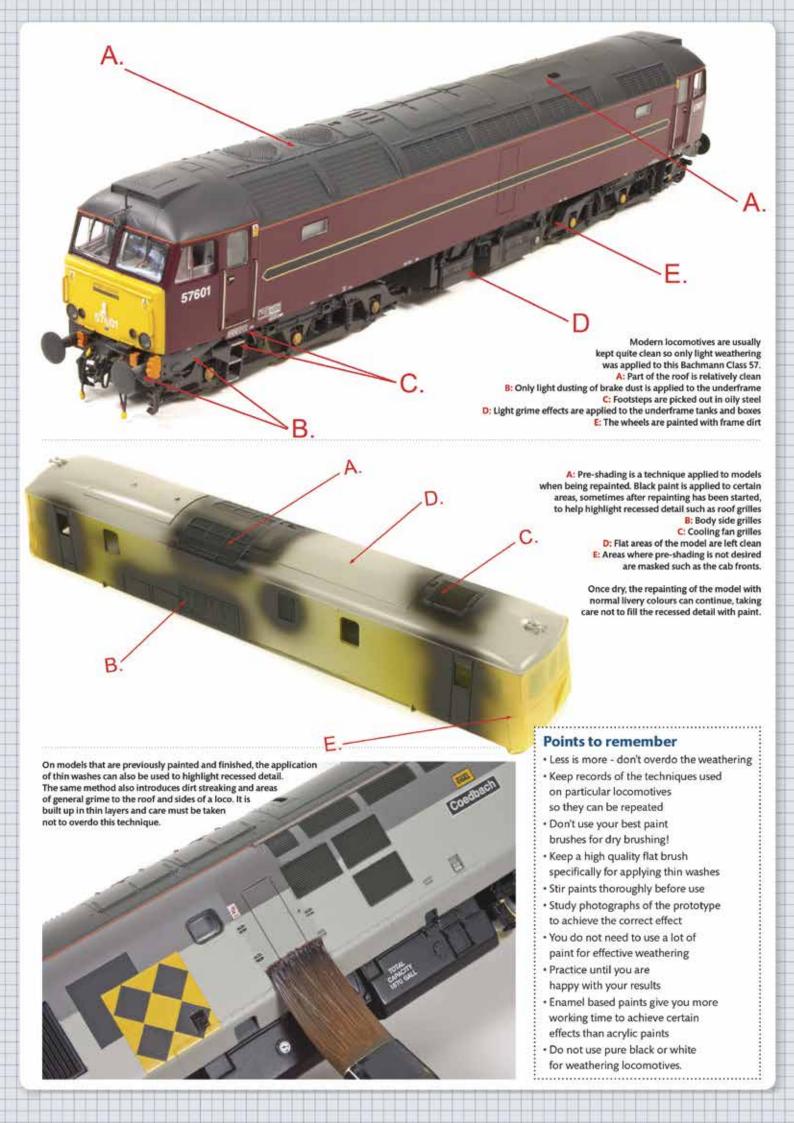
Also consider:

- · Tamiya weathering pens and sets
- · Life Colour acrylic paint weathering sets

· Humbrol or Carr's weathering powders.



weather faded Class 08 shunter which looks to have seen better days A: Rusted exhaust panel B and D: Paint fading applied with very thin paint washes C: Rust streaking applied with paint washes E: Rust staining accumulates on flat surfaces F: Oily grime applied to the underframe G: Rust streaking of body side panels H: Frame dirt applied to the wheels to remove the shine



HOW TO SKILL LEVEL - BEGINNER COMMODEL RUST

Following the success of his realistic 'Woodmores Scrapyard' diorama, Michael Russell reveals his secret techniques to achieve a convincing rust effect.

Words & Photography: Michael Russell

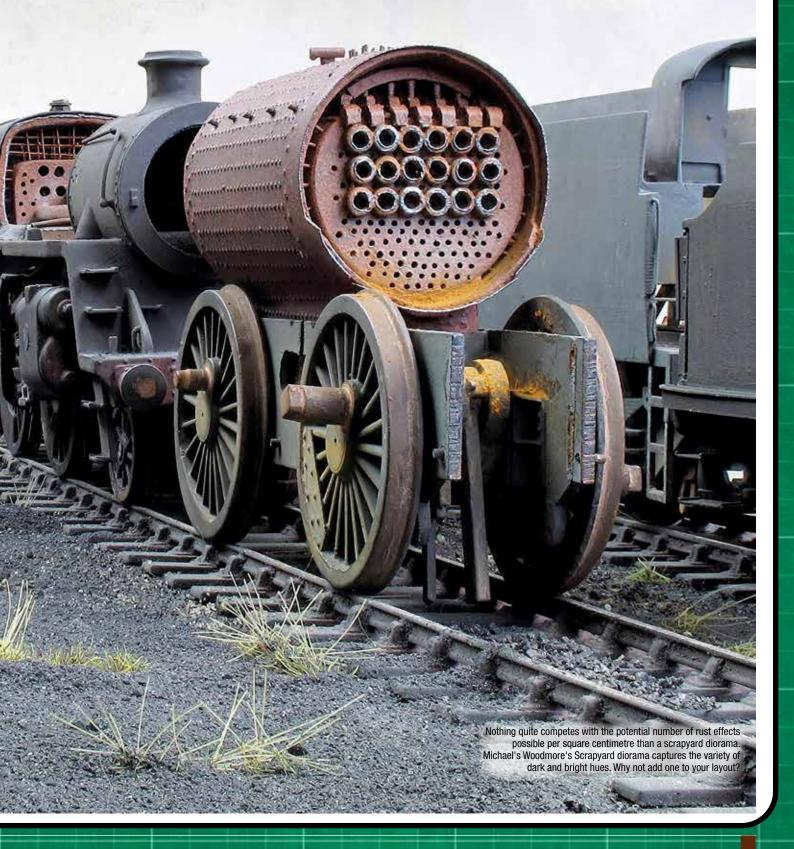


xidation is the enemy of many things, both living and non-living. In our world it's most noticeable in the form of rust. Locomotives and trains operate outdoors where conditions are perfect for the effects of rust to take hold. So, somewhere on

your layout, you will have the opportunity to model this common form feature on man-made items of steel using weathering techniques.

There are many ways to portray rust, so I'll show you several methods to add it to your arsenal. You'll get a more realistic finish if the

rust, just like the real thing, exists as a layer beneath any paintwork. So wherever possible, and certainly where a model has a significant level of rust, it is good to paint the model a rust colour first before adding your livery of choice above. Don't forget to always use matt paint when depicting rust - let's get started.



BRM GUIDE TO WEATHERING



Alternatively, if the model is plastic and you're using enamel paint, spray or paint a uniform base coat of a suitable rust colour.



finish is the obvious one to choose where rust is involved.

Choose three rust colours. Lifecolor has a set called 'Dust and Rust' or try Humbrol acrylic colours 63, 113 and 186. You can use enamel or acrylic, but ensure that all three colours are of the same paint type.



Decant a small amount of each colour into separate containers and dilute 50% with a suitable thinner.



Paint the surface with the relevant thinners and then quickly dab each of the three colours into the mix in a random fashion, letting them merge together.



The result is a mix of colours that looks quite realistic. I've used this technique on my scrapyard locomotives and on buildings for general weathering effects.



Using your three rust colours, start with the darkest and flick this at the surface using a toothbrush and a blunt tool such as a lolly stick.



Now move to the next darkest tone and flick this at the surface. You may like to practice on a piece of scrap paper beforehand so you can judge the amount of paint to use and the droplet sizes produced.

Finish with the lightest colour. I prefer to use acrylic paint for this technique because the paint dries fast and waiting between colour changes isn't a requirement.





Let's use this low-mac wagon with a wooden deck for demonstration purposes to add rust effects. It has a black undercoat and the weathering powders used are Iron Oxide, Rust and Sand from the Humbrol range. Ensure that you only apply weathering powders to a matt surface, otherwise adhesion is likely to be poor.



Apply weathering powders with a brush with bristles that have some resistance in them - a hog's hair brush works well. If you don't have one, cut down the bristles of another brush. Use cheap or old brushes for this because it will ruin brushes.



Now switch to the rust powder and work this into places not covered by the Iron Oxide.



Let's forget that the wagon should be planked and test our effects. Apply the iron oxide colour first, working it across the wagon in a random fashion with the brush.



Now add the sand colour powder concentrating on areas that haven't been covered. Blend it all in with a large soft brush. Experiment with the other colours in the range and you'll find that some interesting effects can be achieved as you can see below.



Dust off any excess with a large soft brush over a small sheet of paper and use this to return the spare powder to the jar.

CONCLUSION

Rust isn't difficult to portray and the most important thing is not to employ just one colour. Use a range and blend them in to get subtle changes in tone. You don't need to buy expensive equipment and the effects can be achieved quickly and without too much effort.



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These sessions range from 1 to 3 hours and are charged at a rate of £46 per hour (including VAT). Additional hours can be arranged at a fee of £56 per hour. Tea and Coffee will be available during your visit.

Shop Opening Times:

Monday - Thursday 10am to 5pm

Friday 12pm to 5pm

Saturday 10am to 4pm



Phone Opening Times:

Monday - Friday 10.30am to 12.00pm and 2.00pm to 4.30pm

