

# MODEL RAILWAY

## EXPRESS

eMAGAZINE



**Issue Ten:**  
**June / July 2018**

*For the enthusiast by the enthusiast*

**photo:** A steam passenger service  
on the 9mm modular layout Hamilton to Claudelands  
Photo: Neil Ward





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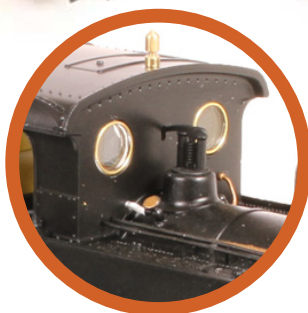
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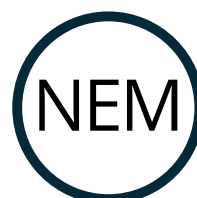
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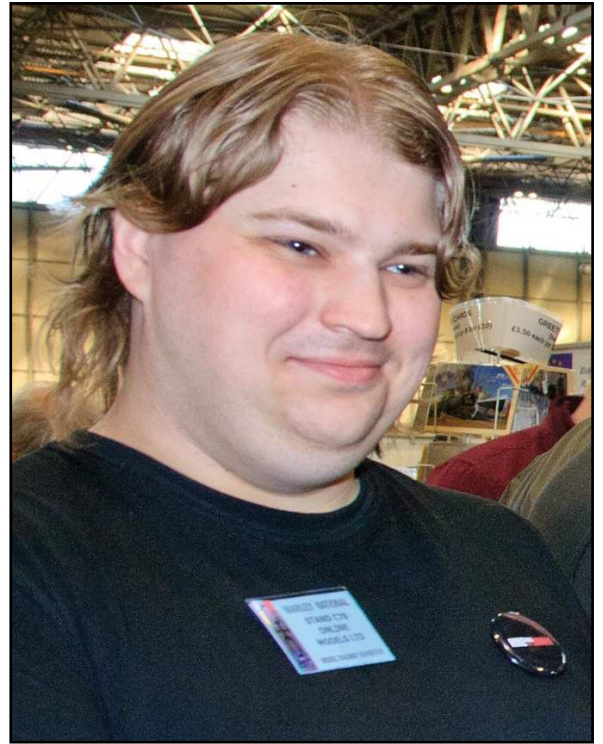
## Dear MRE Readers,

Welcome to this our tenth! edition of MRE Mag, I hope regular readers won't mind my taking the place of Simons normal welcolme but our tenth issue was such a special occasion i couldn't resist.

I want to take this opportunity to thank all of you (our readers) for your support. A special thanks should go out to all of our contributors. without your enthusiasm and support MRE Mag couldn't exist.

This 'New Format' MRE Mag has always been For Enthusiats By Enthusiats and that is how the magazine will continue into the future with your continuing support. So what have we got for you in this extra-special edition?

- two fantastic Micro Layouts! (2mm & 16mm) showing yet agin that you always have room for a layout.
- Two fantastic articles by Neil Ward in New Zealand showing us the possibilities of 9mm as a scale.
- The first in a series of articles about South African Railways and how to model them.
- an assortment of Press releases and Book reviews





- an update on the successor to the 'Tennessee Extraction Company' Angel Creek
- A very special behind the scenes look at the Friends Of The National Railway Museum's Display stand, which readers will remember won our first 'Best Association Stand' Trophy at Warley 2017
- And my special article on the future of the hobby

Thank you again for your support and I hope you enjoy issue ten. Please remember though that if you want to see something in the magazine let us know, only by your feedback can we continue to improve the magazine. Feel free to email me anytime with your feedback and views, or better still your Articles: [editor@mre-mag.com](mailto:editor@mre-mag.com)

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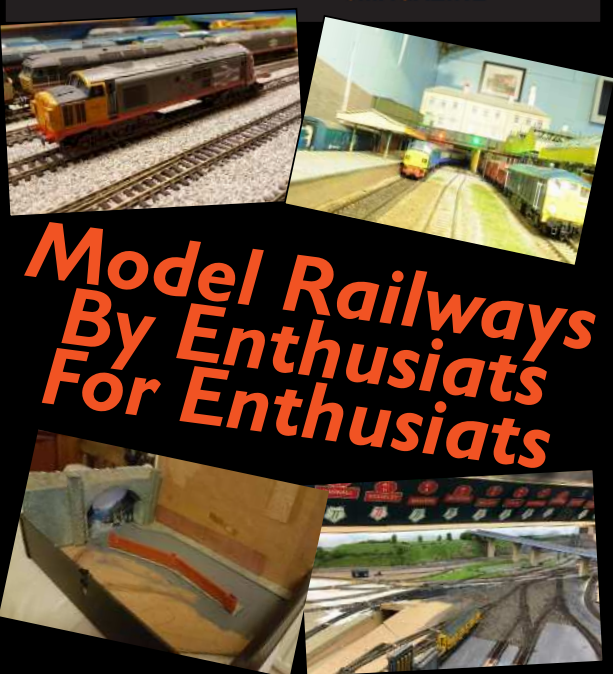
Enjoy your modelling.

Alexander Croft

Editor – MRE Mag

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

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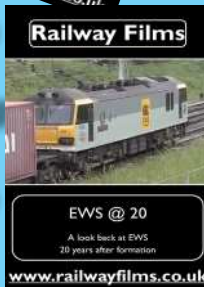
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# THE BIRTH OF ANGELL CREEK



In 2011 and the start of the slim Gauge Circle modular OTT (On30 Track & Trestle) group I built two 4ft x 2ft boards called “Tennessee Extraction Company” which could be used as part of the above group. Over the years OTT became so large that for ease of travel and manageability it split into two groups, “Midland Moonshiners” and “Southern Renegades” I am a member of the latter. Besides being part of the modular group with the simple addition of a fiddle yard on either end “Tennessee Extraction” could be a stand-alone exhibition layout. And over the next 6 years we took it to over forty shows, winning two “best in Shows” on the way.



We had great fun with it, but after all the banging and bumping in and out of the car and all the usual knocking about an exhibition layout gets dear old “Tennessee Extraction” started to show its age, add to this that with two 2 x 4 boards stacked on top of each other it became a bit heavy to lug about. So, I decided to call it a day and retire the old girl and build something a lot lighter and easier to carry.

At one of our BBANGERS meetings (Bath/Bristol Area Narrow GaugERS) one of the members brought his new embryonic layout built from 3mm ply with 10mm x 10mm square bracing, it was so light and easy to carry it put the idea into my mind that the new modules could be made the same way.



It just happened that a friend of mine had not long before given me a dozen 2ft x 4ft 3ply flooring boards (to level the floor before laying wood laminate) and I thought I could experiment with them as see if it would work on a larger scale. To cut a long and boring story short a visit to a friend's carport one cold November Saturday afternoon and a couple of



hours playing with his table saw and we had 10 3ft x 1.6ft boards, 10 3ft x 6inch, and 10 18inch x 6inch. An hour later and a bit of wood glue and a few small nails we had the first board constructed. A week later I had the first set of legs made and the second board built. Within a couple of weeks, I had all five boards built, all 3ft long by 18inch wide with their accompanying legs. The first two boards where to have a dock hung from the front, making them 2ft wide but to fit them in the car I needed them to be 18 inches, so the dock had to be hinges. I used a piano hinge, easy to say not so easy with only one pair of hands!! The other difficulty was cutting the Perspex front!!! Cutting Perspex -not fun!



By the end of December, I had all five of the boards finished and ready for track. On this layout I wanted to try something I had not done before. I had always used “wire in tube” points control, and I would again but this time I pre-wired the points to a DPDT switch with a hole drilled in it for the wire from the point, then when the point was thrown the polarity changed.



January and February saw me laying track and putting in the new point system described above. I used paxilin ties at the edge of each board these were pinned to the boards and the track soldered to them thus giving me a bit more strength. Once the track was done I did the electrical wiring, this was kept simple just a bus bar-which was self-adhesive copper tape then dropper wires from each piece of track. The only other wiring was to the DPDT switch controlling the polarity of the points. I built each board separately and then using DC tried it out, must admit I was very pleased they all as individuals worked (let's hope it's the same when joined together! I managed to get all this done by the time of the Yate, & Sodbury Vale Railway show which I had already signed up to. The idea was to use another member of the Southern Renegades Modules with just a couple of mine joined to them, so people could see how these things get started and what they look like finished. So, I took module one and the fiddle yard. It was excellent, worked well under DCC and we got a lot of good comments. We kept the same format a couple of weeks later for the Monmouth show. Again, all worked very well.

After these two-tentative outing it was nose to grind stone. I started with the small “joining” section which is only 2ft x 1ft and it the section that joins to any other Southern Renegades modules nothing complicated here it’s just a Depot and a row of shops behind which is hidden the single road fiddle yard. Although primarily the joining section when not forming that function an end board is put in place upon which is glued a mirror giving the allusion of distance. The Depot is also removable and can be exchanged for and industry (yet to be decided) at the fiddle yard end the reason being that when joined to other modules two Depots are very close by swapping them we are putting the best part of 16ft between the two.

I had the whole layout pictured in my mind’s eye and loads of sketches in a note book, some things would fit and be practical others would not. I always have a note book when planning a layout even if you are the worst artiste in the world any ideas sketched out will jog memories and be a huge help to correlating your ideas, nobody is going to see it but you, so the art ability does not matter.



The main feature on Module one would be the wagon tip this had already been built in skeleton form and had worked very well over the two shows. This is simply a servo mounted under the baseboard with a wire that pushes up and tips one of the Bachmann On30 four-wheel tipper trucks. I also needed to form a barrier for the trains to pass out of site into the short single road fiddle yard tucked in behind the row of shops. This I did with a covered loading bay on top of which was the air con and refrigeration tanks for the factory it is attached to.

The wagon tip as I said was in skeleton form this I beefed up a bit and filled in the slope leading up to it-this was done with a bit of stone paper and a lot of coffee stirrers . I also made sure the barge sat right and that its false bottom worked so that with a little push from an uncoupling pole all the stone would fall into the pot slung underneath the barge (you can just make out the Circular false bottom on the photo)



The other major build was the car float I was going to have just the float but did not have room for the tug alongside so I made a stern wheeler, its only big enough to carry one box car or a couple of the Chivers small flat cars, it's just enough to give the idea of the car floats and it's another shunting movement.



With most of the back of the module (the warehouses are just Das clay on cardboard painted and weathered the drain pipes are drinking straws, nothing complicated) done I could now concentrate on the dock. I re-used the “Coney fishing company from Tennessee Extraction company but added to it with a lower jetty ( more coffee stirrers). This needed to be darker in colour than the original as it would be submerged at high tide, this darker colour had to be continued all along the dock at the same height to give the illusion of a tide mark, this was achieved by airbrushing sepia ink, light at the top with two or three coats at the bottom to give the darker effect of the tide line.. Once I had done the stone work-Das clay cut into individual blocks and glued on, then painted over with a slurry of Das- (the slurry is made from all the odd bits of Das left over or off cuts put into an air tight container with PVA and a little water). The “Mud” is Monkey Dung (PVA, Sawdust, and emulsion paint mixed up to make a paste) over lumps of polystyrene covered in paper kitchen towel. As it dry’s cracks appear which can be left denoting a hot day or repainted. Another way to get rid of the cracks is to mix burnt umber or burnt Senna acrylic paint into the monkey dung as you make it.







The idea for the dock gates came about as I had to have a reason why the two water ways were at different heights and why the bridge was there. The gates are made from strip wood, and coffee stirrers, the bolts and plates are plastic card and the escaping water is PVA painted on a bit of clear plastic, when dry I peels it off and stick in into the gap between the gates, I then paint on more PVA allow to dry then paint a little white paint on to high light it and finally I add a little loose Christmas sparkle flaks so it catch's the light. The whole dock was then dry brushed and weathered.



Module two has the “Big” industry on it. The industry is meatpacking and all that goes with it e.g. stock pens, feed stores, etc. This is one of those industries that were the back bone of some American railroads especially in the big cities- although you very rarely see it modelled so I thought I would have a go. As I said Its surprising that they are not modelled more often as they give rise to the use of many different cars. There are the stock cars bringing in the animals, Reefers to take the frozen meat away, tank cars to dispose of the offal and blood. Oil deliveries to drive the machinery, on older factories gondolas to deliver coal for the steam plant. Then there is deliveries of hay and straw and bags of feed- remember that all livestock could only travel for 28 hours then they had then to be unloaded, fed. watered before being reloaded for the onward journey. So even if you don't have a meatpacking plant just stock pens there are plenty of car movements .





My Meatpackers is named after a good friend who is a superb cook and always going on about his “rib-eye” steak how he cooks it and what he serves with it, so in honour of him I have given him a whole Rib-eye factory!!





The Meatpackers is simply made with sandwich board covered in Metcalfe HO/OO scale block paper, the fire escape is scratch built from Evergreen plastic bits, the canopy is an old Arfix/Dapol HO/OO station canopy cut in half. The Carcasses are made with Das modelling clay, windows by Gandt line the lettering is from a craft shop-used for card making-The road way is unfinished just undercoated.





In front of the stock pens -again coffee stirrers- is the last bit of the dock including the boat builders. Nothing earth shattering the walls are again Das cut into strips allowed to dry then cut into individual bricks the buildings are coffee stirrers the corrugated roof is from an aluminium pie dish cut into strips and run through a corrugator (found in craft shops). The edge of the dock running along the track is again coffee stirrers-this in fact is removable because it covers the piano hinge that allows the dock to fold over onto the board for transportation.

That's the first bit done still two boards to go which with luck -if I don't change my mind! - will contain a grain elevator and a quarry/mine (the latter will happen because it is where the tipper trucks will load in order to tip into the barge on board one).



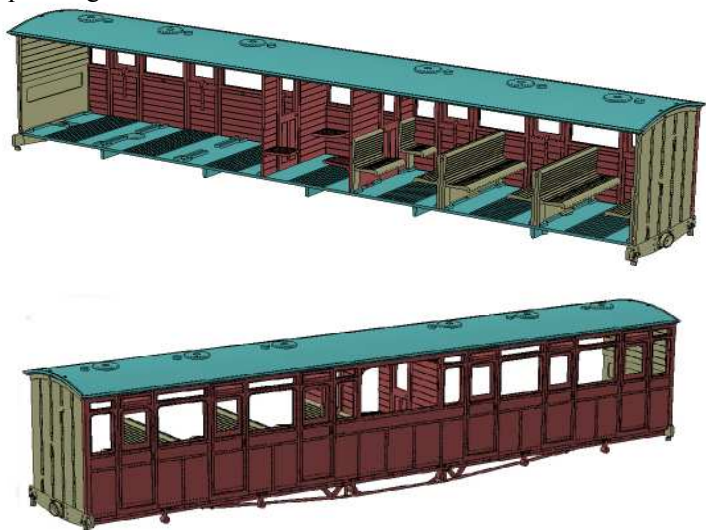




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# **NARROW GAUGE LOCOMOTIVES**

Author Anthony Coulls

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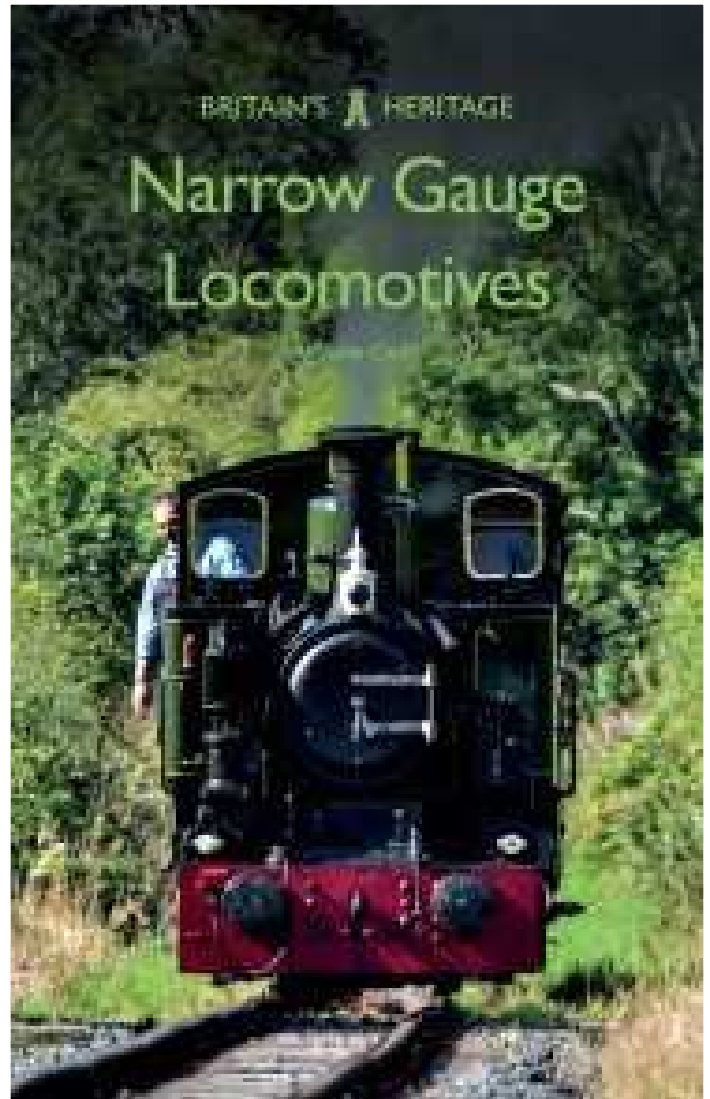
Size 234mm x 165mm

Binding Paperback

Illustrations 80

Published by Amberley  
Publishing

Book Review by Terry  
Rowe



This book is part of a Heritage Series and is an introduction to Narrow Gauges Locomotives of the UK both past and present. I would say it is a complete 'bluffers Guide' in Narrow Gauge Locomotives. The book is well illustrated and has facts and figures alongside the photographs. The high lights the use of narrow gauge and covers Steam, Diesel, Petrol, Electric and even Fireless.



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# THE NORTH BRITISH LOCOMOTIVE COMPANY

Author Colin Alexander,  
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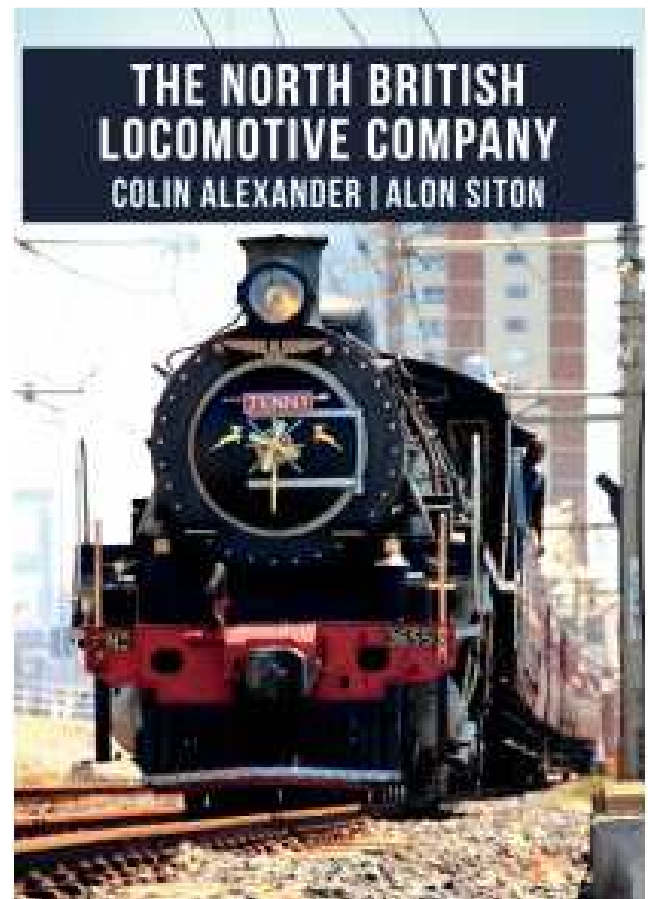
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## Book Review by Terry Rowe

This is a must for anyone who is interested in British Locomotives that where built and ran outside of the UK. The book does cover the locomotives built for the UK as well. It is well illustrated with 180 photographs along with facts and figures of the locomotives built.

Quoting from the Amberley Publishing website:

*The North British Locomotive Company came into existence in 1903 as an amalgamation of three established Glasgow locomotive manufacturers: Dübs & Co., Sharp Stewart and Neilson Reid. Each of these companies enjoyed an excellent reputation for its products both at home and abroad.*

*The amalgamation that formed NBL created the largest locomotive builder in the British Empire, building on the worldwide renown of its predecessors and exporting its products all over the world to places as diverse as Palestine, New Zealand, South Africa and Canada. Its locomotive output was as varied as its clients, with steam locomotives of every gauge, and ranging from tiny tank engines to massive Beyer-Garratts.*





## **Friends of the National Railway Museum About The Stand / Display**

The Friends of the National Railway Museum, FNRM, is the charitable association which exists to encourage, foster, assist and promote the activities of the Museum, providing volunteers and much-needed money for the acquisition of historically-important items and the restoration, preservation and exhibition of the National Collection. The finance comes from donations by the membership of the Friends and from the public, sales activities associated with main-line charter operations, most-recently involving Flying Scotsman, and at events throughout the country, most notably model railway exhibitions.



Those of you who visited the 2017 Warley Model Railway Exhibition, will have noticed our stand which we use as a key part of our promotion, information-giving and sales activities at such events. We were honoured to be presented with the Model Railway Express eMagazine Award for the best stand provided by an association at that Show (see Below)



## The Model and Puzzle

A centre-piece of the stand, and one which attracts both members of the public and the model railway fraternity, is our small operating OO model of Stephenson's Rocket.

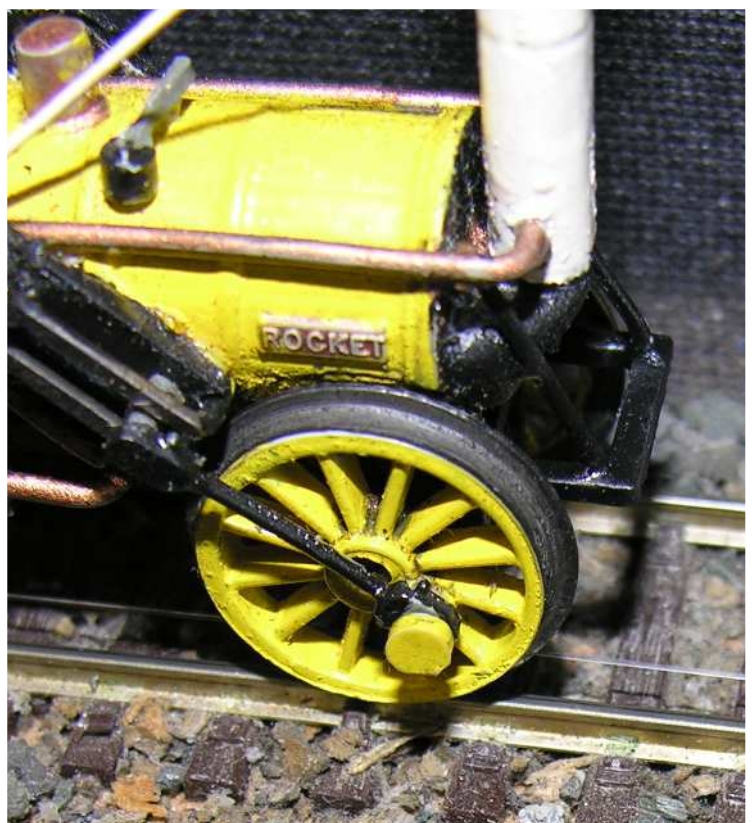


The children love it, especially those who watch the latest TV version of "Thomas the Tank Engine", where it goes by the name of "Stephen". Their eyes light up, and we often see a child pull their parents back to watch it move. The slightly older children are attracted by the free handout with details of the locomotive and its history which they can use in school projects. Hopefully, after our subsequent chat about the history of Rocket, and provision of literature to them and their parents, we encourage a visit to the NRM's sites at York or Shildon. While the chat might not result in any sales, these exchanges are essential to achieve our, and the NRM's, educational objectives, maintain interest in railways, and ensure there is a flow of new-blood into the industry and our hobby.



The less-young members of the audience are attracted to the display for another reason. Most railway modellers of a certain age will remember the Hornby OO model of Rocket and, at first glance, this is what many think they are watching. However, closer inspection shows that the model doesn't suffer from the oversized boiler and firebox of that model and, from behind the stand, we then start to see the eyebrows wrinkle. On being told it is actually a Dapol (ex-Kitmaster/Airfix) plastic kit, then the questions begin to fly. The obvious one is "where's the motor"? Guesses follow – In the boiler? In the tender? In the coach? The answer is no, in each case. We've even joked that we follow Harry Potter and employ magic to shrink the model and driver! So what's the answer?

The solution is not in the model but the track. Close inspection of the front rail will, if you are tall enough and blessed with 20/20 eyesight, show a thin, transparent cable just behind the railhead. You've found it!





## How It Works

The layout consists of two lengths of Peco track fixed onto 6mm thick MDF. The top length is mounted on top of a box which houses the motor and control gear, together with storage cupboards for the models. The lower length forms the extended bottom of the box. A rigid cover for the box is attached to this lower length using a long “piano” hinge, and it has a similar

hinge at its front which connects to a front flap. There are integral folding feet on the bottom of the box and the rigid cover, which interlock to form a rigid display. The result is a combined unit which



has the two-track display at its top, and a shelf and display ledges which are used to show off our wares. It can be unfolded and folded in a matter of seconds.





All that needs doing to get it running is to put the models on the track and connect the battery. The electronics then controls the two trains so they shuttle backwards and forwards for a full day travelling around 1 km, and usually without any manual intervention, unless some “little-fingers” get too enthusiastic.

## **The Drive System**

The motor and gearbox are at the right-hand side of the box. The output from the gearbox drives a large pulley, around which is the length of 5 lb fishing line. This comes out of the front of the box, round a small pulley mounted at the right-hand end of the bottom track, along the track to another pulley at the left-hand end, and disappears back into the box.







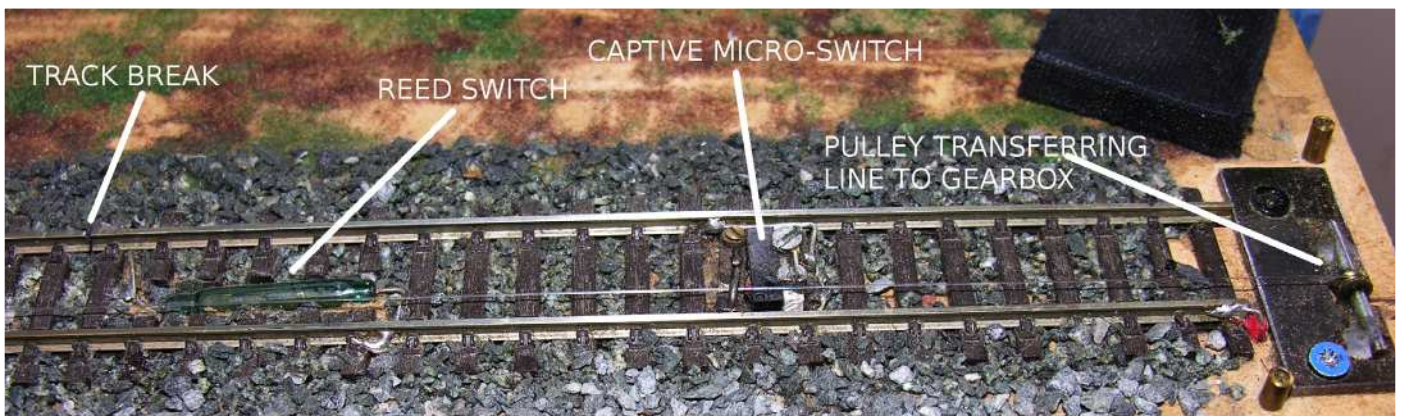
The fishing line then goes through a tensioner, before re-appearing, via a pulley, along the top track, only to disappear back at the right-hand end and the motor/gearbox, thus making a continuous loop. There are two miniature doughnut-shaped ring magnets fixed to the fishing line. It is these which attach to the models.



The electronics is mounted on a printed circuit board behind the gearbox/motor, which means that the whole drive system can be easily removed if it needs



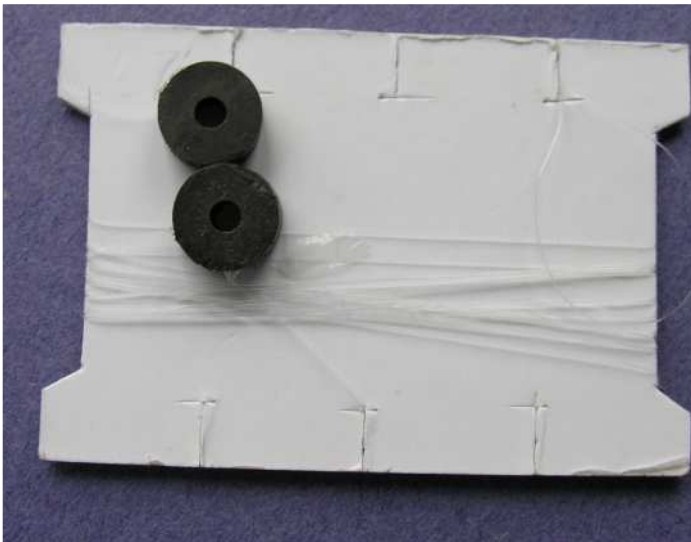
repair - which is extremely rare (fingers-crossed!). The electronics uses detectors built into the upper and lower tracks which are triggered when the models reach the right-hand ends of the tracks. There are three detectors, just to make absolutely sure that nothing can go wrong.



The first is a track circuit. A small cut in the rear rail isolates the extreme right-hand part of the track, which is shorted by the wheels of the model. If this fails, the next detector is a reed switch mounted between the tracks, which is triggered by the ring magnets. If all else fails, the fishing line passes through a lever which is connected to a micro-switch, which both physically (and abruptly) stops the train and operates the electronics.

The train can never, therefore, drop off the end of the track – much to the disappointment of some of our younger viewers.

You may have gathered that the weakness in this system is the fishing line. If that breaks, which occasionally it does, then the show stops. There are spares in the storage cupboards. These are pre-assembled using a jig to make sure that the ring magnets are positioned at the right places along the loop of fishing line.



The battery packs include a 12V sealed lead-acid battery of 7 Ampere-hour capacity. This will keep the model going for a full exhibition day. The pack also includes a 1

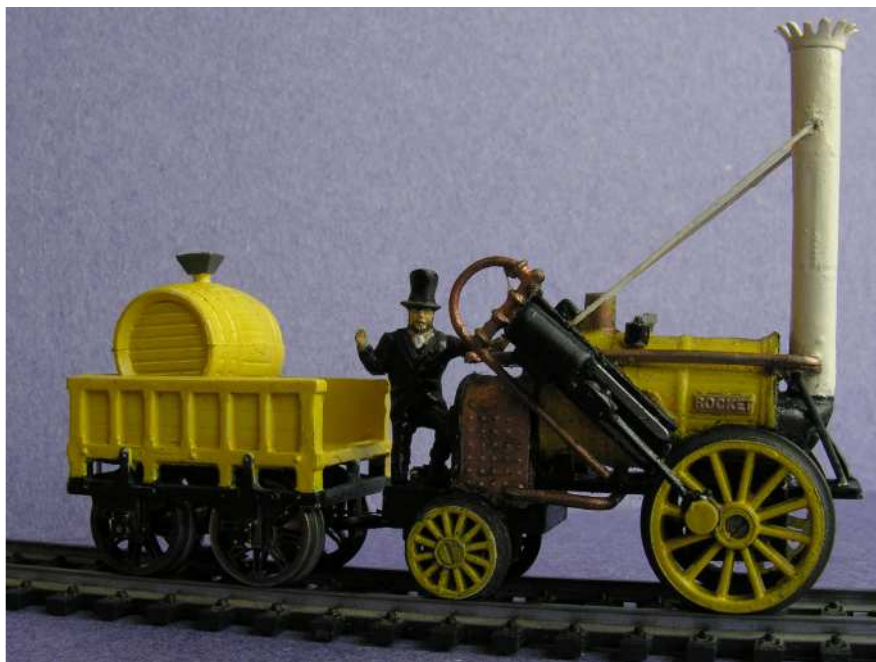
Amp mains transformer and charging controller, allowing the battery to be boost charged over-night or trickle charged over a longer period between shows. Not surprisingly, we have a number of these battery packs to ensure we are always ready.



## The Models

We have four working, and one static, model locomotives available at present. These are:

### **Rocket as operated at the Rainhill trials in 1829**



This is basically a Dapol plastic kit with a few modifications. For robustness, the thin plastic diagonal supports for the chimney have been replaced with a

single piece of thin brass wire which passes through the chimney and is epoxy-glued to the inside of the cylinder blocks. The other changes to the model are to make it run smoothly. The driving and trailing wheel plastic axles have been replaced by steel axles, to which the wheels are attached by 12BA screws. The axles run in brass bearings which have been embedded in the plastic-model wheel fittings. Other than that, the model, including the tender, was completed as per the kit instructions – and, yes, it does mean that the plastic tender wheels are running in plastic bearings, and have done so for many years!



## Rocket as operated on Lord Carlisle's Railway.



In 1999, Michael Bailey and John Glithero undertook an extensive survey of the original Rocket, when it was temporarily moved to the NRM at York from its normal home at the Science Museum. The results were published in the book “The Engineering and History of Rocket”. This information was used to modify a Dapol kit to show the engine as it appeared in the late 1830s when operating on the railways servicing the coal mines at Midgeholme, about 15 miles east of Carlisle. The modifications are extensive and include a new smoke-box, chimney and buffer beam, lowered cylinders and a new tender. The latter is a bit of a guess, as there are no details available of what the original looked like, but it is based on drawings of ones fitted to locomotives of those times.

## Rocket, original as preserved.



This static model is a drastically cut-down Dapol kit. It shows what remains of the locomotive after its working life on Lord Carlisle's Railway. All the non-ferrous metal has been removed, including the firebox, but the modifications made to its cylinders and front end are still extant. It looks so different to what everyone thinks of as Rocket, that it is not surprising that most visitors to the Science Museum do not realise its significance.

## Coppernob.



This model was made to accompany the publication of a book for children “Time for Coppernob”, and shows the locomotive as it was when working on the Furness Railway. It is a historically significant exhibit since it is the oldest inside-cylinder locomotive in the National Collection,.The model is scratch built from brass and copper, based on the original on display at the NRM. The most complex part of its construction was the fabrication of the driving wheels, which were made from brass wire spokes and brass hubs and rims with the aid of a lathe.



## City of Truro,



made from a Dapol plastic kit. It has been modified to work on the layout by having steel driving wheel axles and brass bearings fitted, and the front bogie fitted with commercial metal wheels, but with their axles shorted so as to operate the track circuit detector. The main change to allow it to run, was to fit a simple gear wheel chain between the two driving wheels. This means that the connecting rods have no stress applied to them.

## The Rolling Stock

There are only two:



A First-Class coach of the Liverpool and Manchester Railway. This is by no means an exact model of the real thing. It is a modified “Thomas the Tank Engine” plastic model which has had all its brake gear removed and undergone a drastic repaint. It does, however, look the part.

A Chaldron Wagon. Usually used behind the “Lord Carlisle Rocket”, this shows the type of wagon which would have been used to take coal from the mine to the port at Carlisle. It is scratch built and loosely based on historical drawings and photographs of surviving examples.

## **The Result**

Judging by the number of comments we receive from visitors to our stand, the models and display are key attractions on our stand. They certainly differentiate the FNRM stand from others at the shows. They are always running, bright-coloured, and unusual. As educational tools they help us explain – very appropriately in this Year of Engineering - how Britain led the world in railways and the rapid changes which took place in the two decades following the Rainhill Trials. The only problem I now have is the next big anniversary coming up in 7 years time. Anyone up for building a working OO model of Locomotion?



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## **INDUSTRIAL LOCOMOTIVES & RAILWAYS OF THE NORTH WEST OF ENGLAND**

Author Gordon Edger

RRP: £19.99

ISBN

Size 168mm x 246mm

Binding Paperback

Illustrations 150

Published by Amberley Publishing

<https://www.amberley-books.com/industrial-locomotives-railways-of-the-north-west-of-england.html>

Review by Terry Rowe

This sixth in series of books looking at the industrial railways of England, Wales and Scotland specifically covers Lancashire, Greater Manchester, Merseyside and Cheshire. This region widely associated with the rapid growth of industry during the Industrial Revolution. The book covers Coal mining, Peat workings, chemicals works, oil refineries, salt mining, paper, steel, cement and glass manufacture The Manchester Ship Canal railways at Trafford Park and Ellesmere Port are featured, but there were also other ports and docks around Liverpool and at Preston, all having extensive railways and fascinating locomotive fleets. These are covered, along with the colliery railways and many of the numerous power stations which were once strategically located around the region.

Gordon has used previously unpublished colour photography, offering a fascinating view of industrial locomotives and railways in the area, essentially covering the last six decades.

I found this book informative and interesting, as it covered not only standard gauge but the 'two- gauge' peat railways and the railway used for the restoration of the Rochdale Canal.





## **The Old Station Inn & carriage restaurant, Hallatrow, Somerset**

Well, what a find. On a weekend away to Bristol I was set on some detailed research of the hostelry on Bristol Temple Meads station. But a foray into the countryside of the adjacent county of Somerset took us to the Old Station Inn at Hallatrow.

The pub was originally the hotel for the now long closed station at Hallatrow on the Bristol & North Somerset Railway. Opened in 1873 the station served the village of High Littleton and was closed to passengers in 1959 although freight services remained until 1964.





The railway was built to connect Bristol with the Somerset coalfield and operated by the GWR but experienced a dire history with financial difficulties, the slip-

page of a colliery waste heap and the overall decline of the coalfield leading to eventual closure. A claim to fame is that the Camerton Branch of the railway is where the Tittfield Thunderbolt was filmed in 1953.



But the pub is a veritable gem and is almost a museum of memorabilia of all sorts. As well as railway signs, signals, clocks and lamps there are model aircraft suspended from the ceiling, old radios, a collection of singles, a cello and even half a Morris Oxford coming out of the wall. Outside there is an art installation of Stephenson's Rocket crafted using recycled materials.





Serving local Butcombe ales as well as guest beers and with locally sourced food (including some very local; grown in the pub's own polytunnel) this Aladin's cave of treasures is very much well worth a visit if you're in the area.





But if you're going to eat, try the Pullman carriage restaurant (which is accessed through the bar). Lovingly restored to its former glory the owners have taken their inspiration for the restoration

from the Royal Scotsman's dining car. What an unexpected gem in the middle of the countryside.

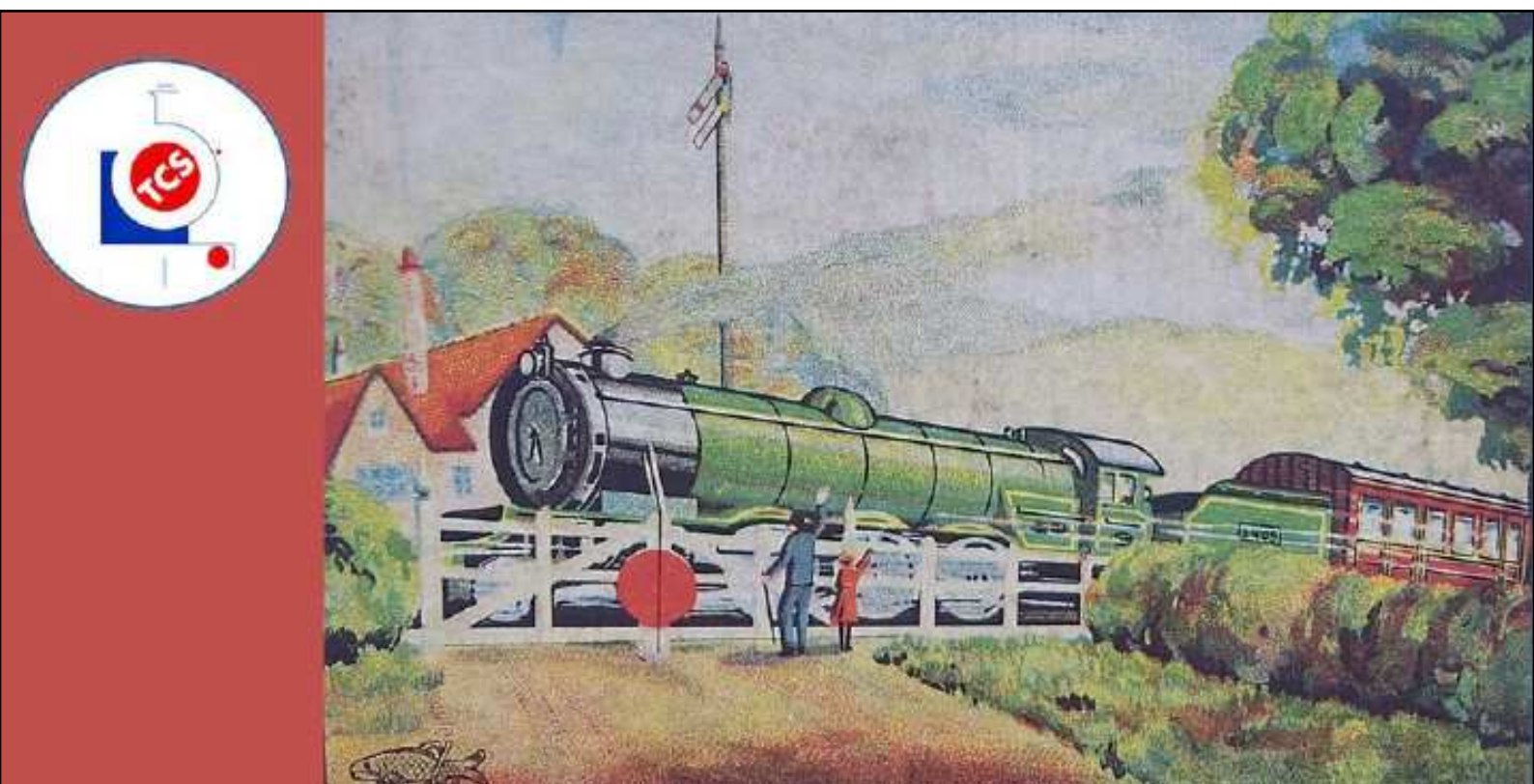






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# THE GREAT NORTHERN



**RICHARD YAREMKO**

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by Richard Yaremko

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White River Productions is pleased to announce the release of ***The Great Northern*** (ISBN 978-1-932804-27-7). This new hardcover publication is an all-color pictorial of James J. Hill's Great Northern Railway. Formed from a pair of bankrupt startup Minnesota railroads in 1878, Hill and his partners went on to acquire and build, with private money, what would become a railroad empire. First as the St. Paul, Minneapolis & Manitoba then, after reorganization, renamed the Great Northern Railway in 1890. Hill's investors would never have to contend with another financial failure. Hill's railroad construction enterprise expanded beyond Minnesota to connect the Duluth-Superior Lakehead to the west coast at Everett, Washington, followed by a north-south link connecting Vancouver, British Columbia, with Seattle, Portland, and California. His business plan of using branch lines and feeder systems routing traffic to his Great Northern Railway from the Great Lakes, Canada, Europe, and Asia would serve his transportation enterprise well. During economic downturns, the Hill interests acquired the Northern Pacific Railway and the Chicago, Burlington & Quincy. In March 1970, all these corporate entities, along with the Spokane, Portland & Seattle Railway, were finally merged into the Burlington Northern Railroad.



During the steam era, Great Northern operated big articulateds that moved iron ore from the Mesabi Iron Range to the Twin Ports and their famous Class O-8 Mikados could be found hustling fast freights across the Dakotas and Montana. The Great Northern also operated a 72-mile-long electrified district through the Cascade Mountains in Washington. With the arrival of the diesel era, the Great Northern owned and experimented with locomotives from nearly every builder. Taking the lead in the race for horsepower in the 1960s, GN ushered in the era of the SD45 with the purchase of number 400. Later named “Hustle Muscle,” the historic locomotive was the first of its kind off the EMD assembly line. “Rocky,” GN’s trademarked mountain goat, was used to identify the Great Northern with Glacier National Park, Montana’s vacation paradise. A pair of famous streamlined passenger trains named the *Empire Builder* and *Western Star* served Hill’s grandiose hotels located in the park. All of this and more is presented here in 256 pages, illustrated by the work of many of the best color railroad photographers of the steam-to-diesel transition era.

Author Richard Yaremko was born in 1949, and raised and educated in Edmonton, Alberta, Canada. Having a father who loved watching and riding trains started Richard's lifelong journey studying, modeling, photographing, and writing about railroads and their equipment as a hobby. Growing up only two city blocks west of Canadian Pacific's South Edmonton Yard made it the focal point for train watching, a starting point for travel, and eventually a base for work. While steam is a faint memory, first- and second-generation diesels and Budd's RDC cars made a lasting impression – they were the objective for early photo expeditions.

Memorable first journeys included short-haul trips on the *Chinook* and *Stampeder* to visit his uncle, a Canadian Pacific roadmaster on the Lacombe Subdivision. Longer trips to Toronto on CP's Dominion and then CN's Super Continental during his teen years instilled a love for rail travel that continues to this day.

Richard's writing credits include authoring 12 books covering Canadian National and Canadian Pacific freight equipment, co-authoring ***Montana Rail Link Locomotives and Rolling Stock*** with Robert C. Del Grosso, and over 300 published photos, including two ***Trains*** magazine center spreads and a ***CTC Board*** cover.

**The Great Northern** retails for \$79.95 (plus shipping and handling) and is available through your local dealer, online at

<http://shop.whiteriverproductions.com>, or by calling toll-free (US) 877-787-2467. Outside the US 1-660-695-4433.

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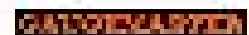
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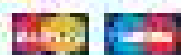
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## Merry-go-round trains - an NCB MICRO in 2mm N gauge

By James Cullen



Over the past twenty plus years I've always had an active involvement in model railways. Be it; attending shows, working on club layouts, doing demonstrations, working in the industry as a manufacturer and retailer or just sitting at home building a layout for fun. I've seen many changes to the hobby, but one thing remains the same: People are fascinated by micro layouts.



I first became aware of the concept of small space layouts when I stumbled across the website 'micro layout gallery' by the late Carl Arendt. This started my addiction and have now built at least fifteen 'micro' layouts in various scales and formats.

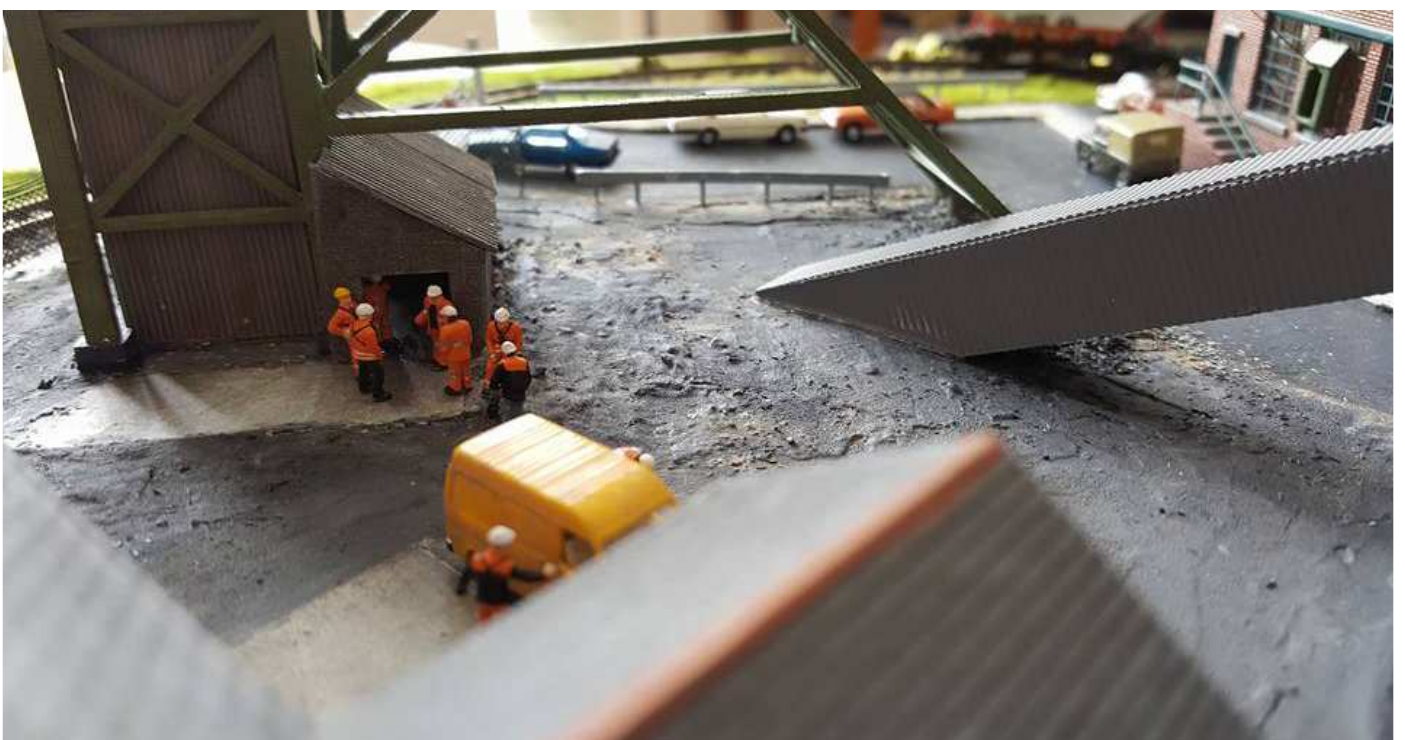
my latest offering came about after a few years of promising myself a layout based on the Denby branch running from Derby to Denby in Derbyshire. The line is now closed and lifted but did survive up to the late 1990's.





After a bit of planning and looking through many books and online videos I had the information I needed and realised that It wasn't going to look or operate how I wanted so a plan B was required. Time passed by, other layouts were planned & built then at Christmas 2017 my in-laws presented me with a few packs of Kato unitrack and some wagons.

Ideas began forming and my thoughts of coal traffic working on a small line returned. A visit to the spares box revealed an old Faller kit that needed opening and building. With a little work, it could be made to pass for a UK loading screen. I knew I'd not be depicting the Denby branch but I could do a colliery in its final years in the midlands circa 1996. I already had the stock so why not?



A quick internet search provided me with a 3D printed head stock kit (that would require some modification) and a call to Online Models Ltd, secured the base board (using the new laser cutting and design service) i'd need.

The spares box again was called upon to provide small scenic items and mount board for photo frames would make up ground levels & buildings. Well, that was the plan.

The layout build officially began at Lincoln model railway exhibition 2018 on the DEMU society stand. Also after a luck find on a stand selling used items I now had Bachmann building to modify rather than having to scratch build what I needed. This would save a lot of time and at the price I paid, they were practically free.



Returning home I proceeded to commandeer the living room coffee table and the Kitchen counter (not at the same time) and work started on track wiring. Not wanting to use the Kato track connectors I soldered wires to the underside of the rails and added a simple Jack plug connector. Power for the layout is provided by an old Motorola mobile phone charger. This provided both slow, consistent running and makes it much quicker and easier to set up at shows. This done I commenced on the ground levels and basic scenery. Everything was coated with commercial ready mixed filler coated with several layers of acrylic paint.

The rest is pretty standard. Buildings were detailed and positioned based on prototype photos found online. Scenic items were scratch built (again from online images) and when i was happy with how it looked static grass was applied where required.

Finally, fencing, figures and vehicles were added.

Its worth noting here that many great layouts often make the same mistake. Time travelling cars! (ive often seen a mk5 transit van driving about in 1980 despite not being built for another twenty years).



I've made sure to stick to the operating period of 1988 - 1998. The locomotives and wagons used all carry liveries used during this period (Railfreight Coal, Transrail & Mainline) but most importantly (to me) the vehicles all date from the late 1960s through to 1987. Added to this, all the figures are individually painted based on photos of miners from the period so historical inaccuracies are (hopefully) avoided.

So, after only two weeks of work the layout made its debut on the exhibition circuit at Nottingham exhibition 2018. Since then it has attended a number of other shows and will be available to view over the next few years on the DEMU society stand at shows across the country.



# **Review: Smart Models Magnetic Right Angle Clamps (2 Pairs Small, Medium and Large)**



By Terry Rowe

<http://www.smartmodels.co.uk/magnetic-clamps.html>

These are Right Angle Magnetic Clamps for keeping parts at 90 degrees while glueing. They are available in small, medium and large sizes. You get 2 Pairs each set.

Small £7.99 + P&P,

Medium £8.99 + P&P

Large £9.99 + P&P



These give you that extra set of hands when trying to get the card models together while gluing, a must I would say if one is a card kit builder. Smart Models have produced the clamps in 3 sizes for different sized projects. I fully recommend these items and I found them most useful and effective.

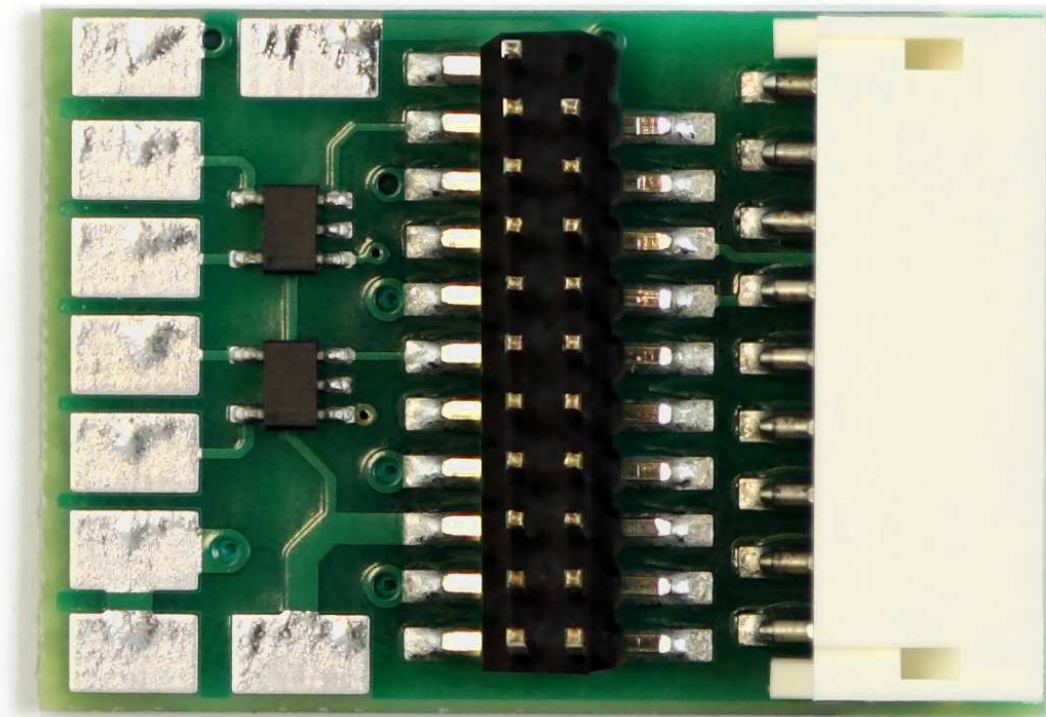


<p>O gauge resin and white metal kits</p>  <p>O gauge low-relief building facades. Picture shows SMRS38 2-storey north-light facades with added details.</p>	<p><b>Skytrex Model Railways</b></p> <p>Unit 1 Charnwood Business Park North Road Loughborough Leicestershire LE11 1LE</p> <p><a href="http://www.ogauge.co.uk">www.ogauge.co.uk</a> <a href="http://www.skytrexmodelrailways.com">www.skytrexmodelrailways.com</a></p> <p>Free subscription to newsletters! Details on websites</p>	<p>OO gauge resin and white metal kits</p>  <p>OO gauge modular building systems. Picture shows 4/041 north-light warehouse kit</p>
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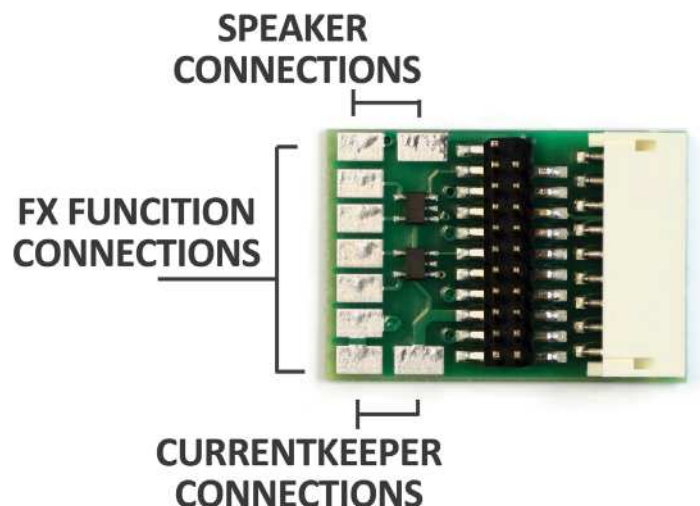
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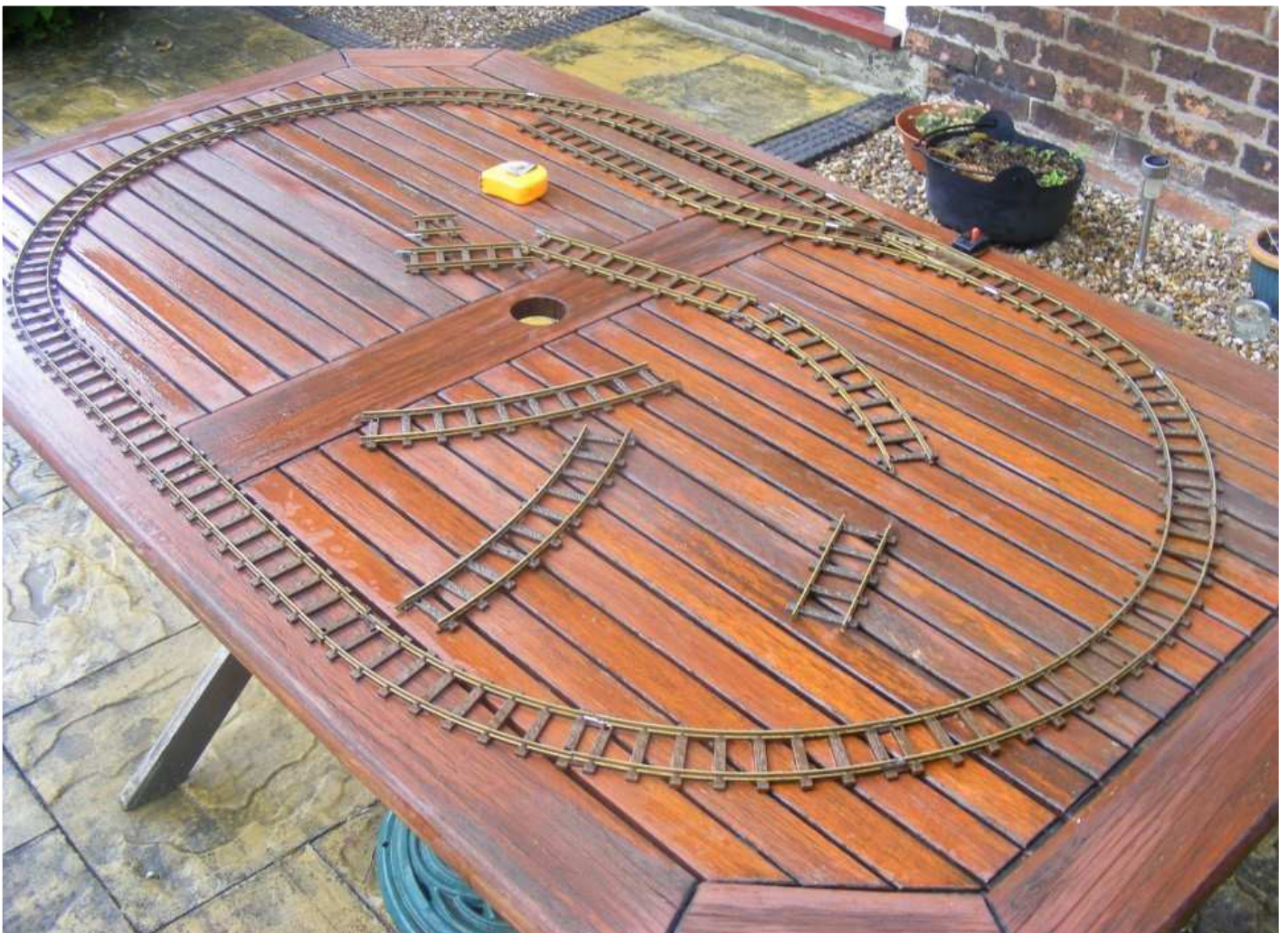
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## Micro Layouts in 16mm – How it All Started

It's all John Rogers's fault..... He once brought a small layout to the 16MM AGM at Stoneleigh some years ago. It was based on Faller E Train track – set track with 14" radius curves which meant a small layout could be easily achieved. I certainly wouldn't have wanted to try and bend (and retain) a curve that small in Peco SM32! As I'd not now got a garden railway (another story) I decided to see what I could build.

The first stage was to get some track and experiment with possible layouts on the patio table.





This was an early effort: it was easy enough to decide how big the layout was going to be, but more problematical deciding how the sidings could be laid out. I did some testing with some of my existing locos and stock.....



..... Which immediately flagged up a potential problem: small, light, battery powered locos had great difficulty negotiating the tight curves, so I had to rebuild my existing locos with 2 axle drive – easily achieved with Motionco sprockets and chains. (<http://www.motionco.co.uk/chain-sprockets-c-21.html>) Even longer wheelbase wagons (like the IP Engineering Log Wagon shown here) were capable of getting round the curves satisfactorily.

One major problem with model railways of all scales is keeping them clean, and as mine was going to have to live in my garage, protection from dust, dirt and damage was very important. I thus decided on a “Layout In A Box” with lift-up flaps for operator and viewing access, so I sat down with a sheet of paper and devised a cutting list.

A couple of days later I went to the timber suppliers in Derby with the cutting list for the ply. The operative who served me did not inspire confidence: “Is 28” the same as 2’ 8”?” Eventually I got what I wanted, but a bit more in the way of narrow strips of left-over ply than I would have liked. Problem Number One came when I loaded up the car: the 4’ 6” long pieces only JUST went in the car (in fact, I drove home with the Big Red “YOUR TAILGATE IS OPEN” warning on) but a quick track session revealed that the baseboard would cope with the track layout at 4’ 3” long, so that was the final size!

Once I’d been to B&Q for some planed timber, the baseboard was constructed in time honoured fashion with a 2” by 1” frame, with the ply fixed to the top with brads from a staple gun, the whole glued with PVA. The “box” was then constructed onto the baseboard – the whole was distinctly wobbly as it was put together with the same brads – adding woodscrews “firmed up” the structure somewhat.





The “kit” before assembly.....





..... and precariously nailed together. There was one minor problem – the back of the car it was going to be carried in (a Mercedes A Class) had a pronounced slope in the tailgate, which meant one end having to have a slope, and only three opening flaps, instead of 4. The inner layer of the top was fixed in place, followed by the layout lighting. One good thing about the modern trend for LED spotlights in kitchens is that kits of bits to install your own are readily available from your local DIY shed. I bought a set (designed to go under wall-mounted kitchen units), cut holes in the top layer and installed the lamps and their wiring. The installed load is a MASSIVE 3 watts!



It's all dead easy – the wires, connector block and tiny transformer (bottom left hand corner of the picture) were installed, the whole tested, and the top layer, tapered end and outer layer of the top installed. There's no heat from the lamps and no need for access to the wiring, so that was all done and out of the way: as they say “fit & forget”.

The final job was to finish the detailing - the corner covers (normally used on PA speakers) and what I term “the Bodge Strips”. This phrase came into being when I was fitting out a narrow boat, where it is quite normal to use a piece of quadrant in a corner, to conceal the fact that you didn't cut the two pieces of wood **exactly** to size. In this case, they are actually “Bodge Angles” as they cover up all the visible joints.



(yes – I DID cut the flaps away to clear the carrying handle.....)

The outside then all got a coat of dark green garden furniture stain, before I started on the inside.

Painting the inside of the walls and top with sky blue emulsion was “interesting” as I had to contort myself in all sorts of interesting positions: staining the baseboard with wood stain was MUCH easier, following which I used Peco track pins for the first time to do what they were originally designed for – fixing the track down! Test running showed up the need for some trimming of carrying handles to stop them fouling “large size” buffer beams, following which work was started on the scenic work.

HERE ENDETH THE FIRST LESSON







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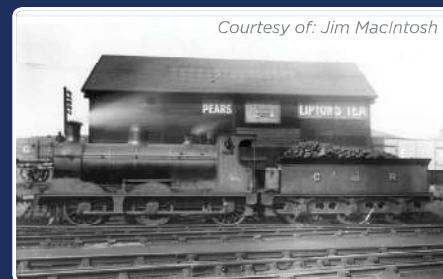
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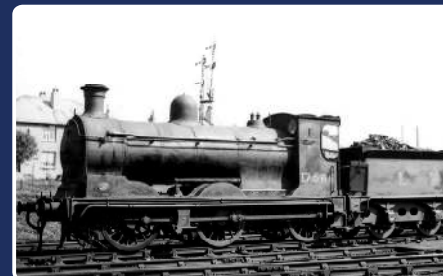
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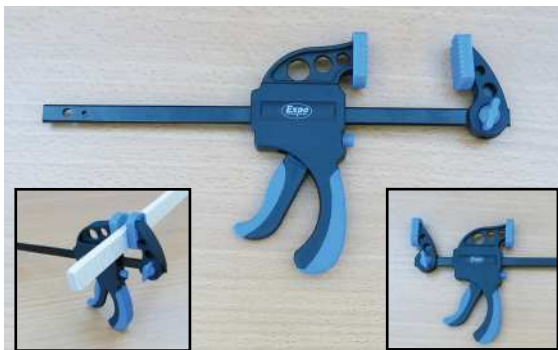


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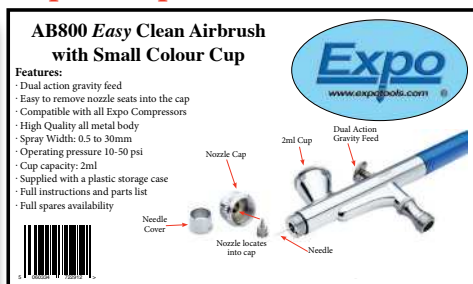
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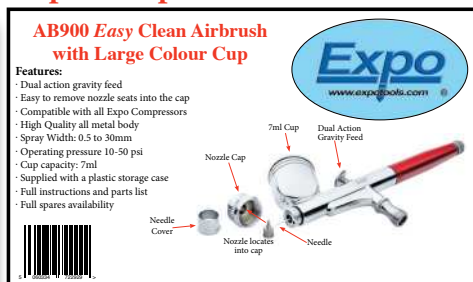


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## **My South African Model Railway - Part I**

Back in 1981, during a visit to Johannesburg from the mine I then worked on in Namaqualand, Cape Province, I purchased a copy of Jorgensen and Lewis's "Great Steam Trek". I was greatly taken by photographs of the Bitterfontein and Overberg (Protem and Bredasdorp) branches, but with a busy job and the nearest railway line (Loop 10 on the Sishen to Saldanha OREX) one hundred and fifty kilometres away down a gravel road, railways did not feature too highly.

Time off work was spent climbing desert mountains or going to the beach at Port Nolloth. A return to the UK, in 1986, made those branch lines an even remoter proposition so the Steam Trek remained on the book shelf. I did however build, what eventually turned out to be, a very extensive N Gauge model railway “located somewhere in the west or north of England”.

Things started to change, however, when early in 2002 a friend sent me a “flyer” for a two-week rail tour covering the lines from Cape Town to Worcester and Ashton, Prince Alfred Hamlet, Porterville, Malmesbury and on to Berg River and then Graffwater and finally Caledon and Protea. An interesting line up of motive power was promised including Class 26 “Red Devil”, two 19Ds (originally one was to be a 19C but she failed to appear), a 15F, a 16D and GO and GF Garratts. The price appeared most reasonable so I was given the green light to go! The trip, organised by Ian Pretorius and Beryl Gibson of Northumbria Travel, produced all that was promised and we also saw interesting modern rail activity including heavy coal, grain and cement traffic behind Class 35 diesels and a Class 9E powered OREX train southbound near Lambertsbaai. Highlights have to be firing Dollies Nos 3321 and 3323 at Porterville and the run from Howhoek to Protea and back behind GO No 2575.





## GO 2575 shunts loaded B2 wagons at Protem. 04-Jun-02

I was also greatly taken by the delightful station buildings at De Hoek, Bitterfontein Branch, and a request for an unofficial photo stop on the way south was granted by Ian at almost no notice!

With a busy job, a young family and an N Gauge railway nothing much happened for a couple of years. One other sticking point was that all the HO models of South African rolling stock (Lima, Fraschetti and DJH) I could find ran on 16.5 mm (standard gauge) track which was, to me, all wrong! And then I found Frank Collingwood's website. In it he explained how to re-gauge HO models to run on 12mm (3ft 5ins – so one inch too narrow) gauge track.



The bug bit and I decided that I would start a second model railway, the N Gauge was nearing completion, but this one would be built on moveable base boards, rather than being fixed to the walls. “Protem” (Latin for “for the time being”) seemed to be an appropriate name and the track plan, including a triangle, along with grain silos seemed to offer scope for modelling. However, the station building, a basic tin shed, had to make way for those from De Hoek. Later I realised that I had no photos of the De Hoek platform toilet, so had to make a major diversion on a subsequent trip to the Western Cape to photograph and measure that structure. I also incorporated a model of the Pratt truss girder bridge at Kykodie which I built from Plastruct sections.



Skellghyll (British N Gauge) above,  
Protem (SAR HO 12mm) below

Protem certainly lived up to its name! With domestic “upheavals” the layout lived in three different houses, was configured in three different ways and finally, in the winter of 2017, was sacrificed on the altar of 1/4” to the foot narrow gauge. Although if truth be told one of the base boards, some track and a box of rolling stock lives on in our loft! I should add that little would have been achieved without the encouragement and support of Les Pivnic, who kindly invited me to view his magnificent layout; Timfontein, Mark Robinson of CREA (Cape Rail Enthusiast Association), Lionel Penning (editor of the RMIG Journal) and Matt Coleman, who had been down the 16.5 to 12.0 mm “road” before me. Also worth a mention are Andrew Mullins, the proprietor of Branchlines (who had provided me with all the bits I needed to re-gauge and re-motorise the GCA) and Craig Duckham, CMD Models, who provided a range of rolling stock kits.

The intention is first to describe the layout and its buildings. Later I will look at the construction and re-gauging of the Garratt. I will then follow on with the diesels and, finally, review the rolling stock.

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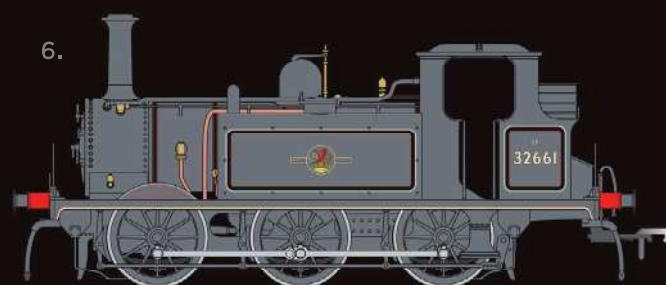
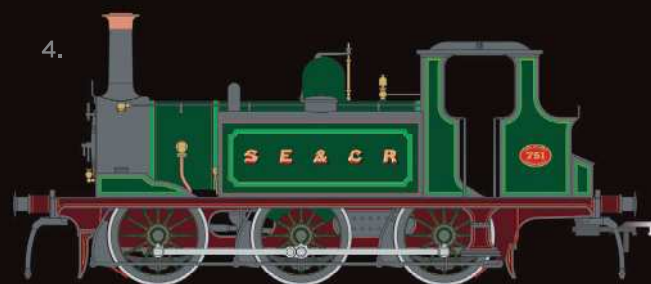
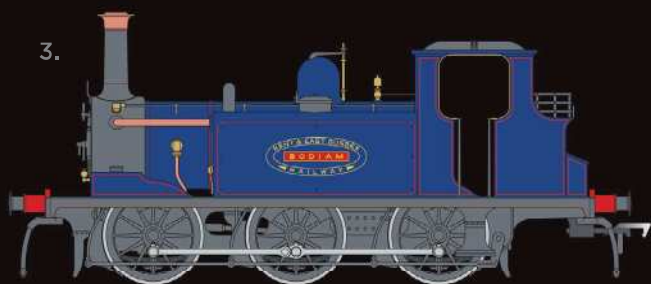
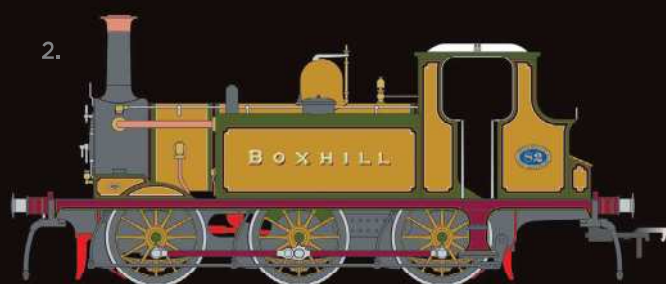
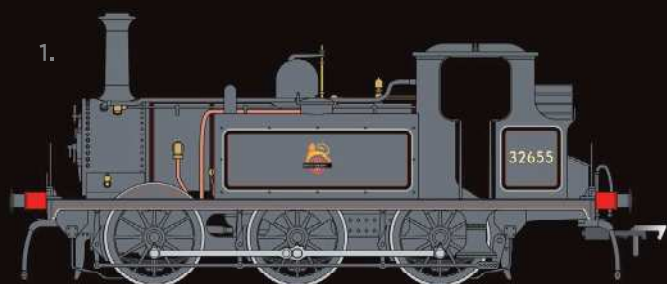
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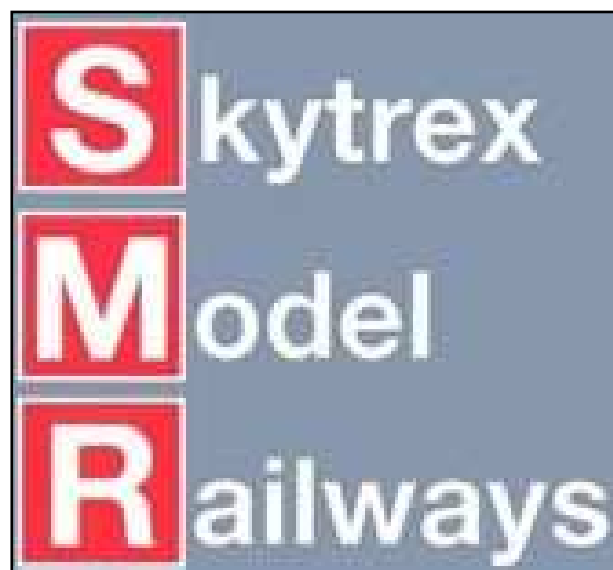
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## **9mm/P34 Layout:**

By Neil Ward

In 2013 Gregor McNeil and I started to have the need to run our growing collection of 9mm/ P34 locomotives and rolling stock. To those off shore 9mm/ P34 is essentially NZR model railways on O scale track 32mm. The slightly larger scale means the track with actually works out to 3ft 6in as per the NZR system.

After some discussion we decided on a conceptual layout based on a small section of track in our home town/ city Hamilton NZ.

There was going to be one particular feature on the layout the bridge spanning the Waikato River. There were 2 options to choose from.

1. The original Rail and Pedestrian Bridge which crossed the river then went across the main street of Hamilton Victoria Street. Built on 1884`.

2. The second option was the new rail bridge built from 1962 opened in 1964 which required a realignment of the track and a tunnel or covered trench under the main street of Hamilton.



(photo 1: Hamilton Railway Bridge pre 1958. From the eastern side looking toward Hamilton City.)



(photo 2: Hamilton Railway Bridge post 1964. Similar angle with a modern train on the new bridge the structure behind is the bridge I have modelled which is now a road bridge.)

It was settled that we would pick the period pre 1958 which allowed a reasonable range of locomotives steam and diesel as this was also the transition period where dieselisation was starting to begin on the New Zealand Government Railways as it was known at the time.

I sat down and worked out to comfortably fit a reasonable amount of the Hamilton and Claudelands railway stations and yard detail onto a modular display layout that the module would need to be 800mm wide. The modules are each 2300mm long, you ask why 2300mm long. This is an agreed standard length module we use for our display layouts at the Hamilton model railway club. This allows us to fit the module length ways across the truck we use to transport the club layouts to the various shows we attend in the Waikato.

The 1st stage comprised of 4 x modules made the above described sizes. Which would include the Hamilton Station mainline, a crossing loop and several other features of the Hamilton Station, The main street level crossing, and a curved section leading up to the bridge. The 1st batch of Track Peco flat bottom O scale track was purchased along with 5 right and 5 left hand Peco flat bottom medium radius points.



We choose to use Peco track as it was in my view going to be a major undertaking to hand lay and then maintain reliable running on a portable layout with hand laid and hand-made points wasn't something either of us wanted to entertain. Each join between the modules track has been cut, after the track is soldered to PC board nailed directly into the base boards with 2mm dowels in the in one end of each module for alignment.



(photo 3:  
Hamilton  
Modules.)



(photo 4: Ready for Track laying.)





(photo 5: Pc Board for  
Track alignment at the module join.)

The second stage was the purchase of timber to 4 more modules to the same dimensions to represent the Claudelands railway station and yard. At this point there was 3 more modellers Trevor James, Selwyn Martin and Warwick Simpson joined the group and we purchased 96meters of track and 10 sets of left and 10 x sets of peco flat bottom points to further expand the layout. There was some pressure now to have at least a point to point version operational for the New Zealand Model railway Convention to be Held in the Te Rapa race course over Easter 2014. We dully showed up with bare painted boards with two station yard and not much else.





(photo 6: Hamilton Railway yard 1st outing Easter convention April 2014.)

In the mean time I had been designing in solid works a Bridge to span the Waikato river section of the layout. This was to be as described earlier in the pre 1958 configuration. I tapped into my now late Fathers memory of working trains as he had been a driver on the old NZR from 1953 until his retirement in 1990 and living in Hamilton from 1944 until his death in 2016. He had a wealth of knowledge and photographs for me to trawl through for any detail I could find.

Designing the bridge had several issues to overcome the height from the rail head to the usual river level was 25mtrs. The length of the bridge is 900ft or 274mtrs in length. Each span would need to be 900mm long. This would have meant the actual bridge would need to span 2 of the 2300mm modules and I thought through the limitation of the module construction and the idea of having to remove the centre span for transport and storage wasn't appealing. I decided to go for a compressed option and each span would be 600mm long to allow the bridge to fit into 1 module. The next set of problems was how to manufacture the bridge I explored using laser cut steel for the main sections of each span. Then using brass section and cast pieces to assemble the bridge. I then opted for full rapid prototype sections of the spans and with other means of tying the model altogether. I set about designing the bridge and obtained quotes as well as designing a module around the bridge model based on the usual 800mm width and 2300mm length.

(photo 7: Solidworks Rendering of module design.)





(photo 8: Hamilton Bridge 3d printed.)



(photo 9: Hamilton Bridge ready to fit to module.)



The module was constructed one very cold Saturday morning in May 2014 and then stored in the Hamilton model railway club rooms and over a period of time the bridge was assemble and fitted. In early 2015 the bridge module and I adjoining river road module were taken home to my garage to continue scenery construction.



(photo 10: Hamilton Bridge and module.)



(photo 11: Hamilton Bridge Construction.)



(photo 12: Hamilton Bridge and module.)





(photo 13: Hamilton Bridge and embankment frame.)

The Scenery is constructed on a carved polystyrene base the covered with paper towels soaked in a gib stopping plaster mix with sawdust and brown die.



(photo 14: Hamilton Bridge and back Drop.)





(photo 15: Embankment carved polystyrene.)



(photo 16: Embankment after plastering.)





(photo 17: 1st layer of scenery applied.)



(photo 18: Bridge plastering.)





(photo 19:  
bridge 1st layer  
of scenery.)

The next showing for the layout was to be labour weekend which is a 3 day bank holiday in the middle of October 2015 at the Hamilton gardens pavilion. This showing of the layout we required 27mts in strait line of space for the layout. This was the 1st outing of the Hamilton bridge module with scenery on either side of the bridge largely completed.





(photo 20: Hamilton Bridge and module October 2015. Ka941 on Rotorua Express.)

The scenery is teased out carpet underlay that I died olive green and smeared copious amounts of PVA glue on the plaster surfaces where I wanted the under foliage and when I had applied the first layer of teased out carpet underlay I used various textures and colours of woodland scenic foam sprinkled over the carpet underlay base the sprayed PVA that I had water down to around a 60% water 40% PVA glue mix with a tablespoon of dishwashing liquid. Trees are produced by various means.

The bulk of the trees in the river bank are heather harvested from the road side close to home, The trees that are more visible are made from heather that has been chewed by cattle and become more tree like in there structure similar to a bonsai tree. The tree like structures were trimmed where necessary and sprayed with ADO's contact adhesive and sprinkled with various type of woodland scenic foam. I have also started spraying the coated trees with a clear spray paint from a can to help hold the tree foliage in place as the constant shaking during transport has shaken the foliage of some of the earlier trees put into place. The flax bushed and cabbage trees more native to New Zealand are a printed latter on a light green paper for the flaxes and a light yellow paper for the cabbage trees. The paper is cut out and rolled to for the leaves then the leaves are pilled don into various position to form the finished tree heads or flax bushes.

The buildings visible in image 21 have 3d printed front-ages and the main structures is foam card either painted or brick paper applied, the windows in both building are 3d printed. The small crossing keepers hut is a 1 piece 3d print. The yard crane is also 3d printed. Most of these item could become an article on their own.



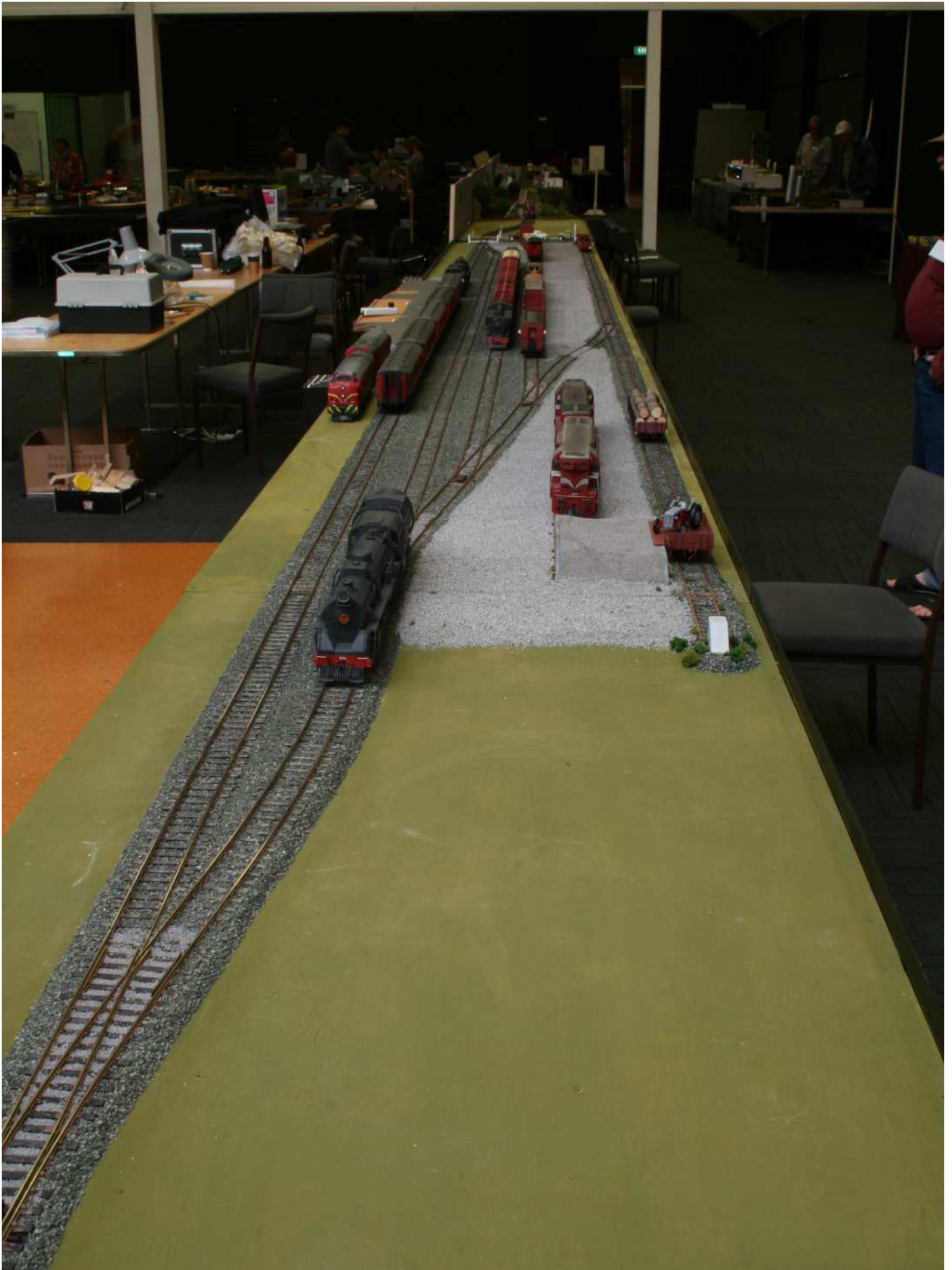


(photo 21: Hamilton Victoria Street October 2015.)



(photo 22: Hamilton River Road embankment module October 2015.)





(photo 23: Claudelands yard looking  
towards Hamilton October 2015.)

We quickly found out the limitations of running trains point to point on a large layout. I started dreaming up in my head how to design modules to make the layout a continuous loop.

The next stage was the construction of the end modules. This required 4 module on each end mitred the long point or side is 2300mm and the short point or side is 1800mm. This allowed us a radius of around 2600mm to work with a little tighter than we would have liked but workable. Timber was purchased and assembled into modules with the aim of having a complete circuit for the Hamilton Model railway Club Show in Te Awamutu in May 2016. We managed to achieve this with bare boards other than track and ballast applied but made it, to the show none the less.



(photo 24: End modules track laying.)





(photo 25: End modules 1st outing Te Awamutu May 2016.)



(photo 26: Hamilton Bridge and module October 2015 Da1415 on goods train.)



The next year didn't see a lot of construction carried out due to other commitments the next show was to be the Hamilton model Railway Club show in Morrinsville in April 2017.



(photo 27:Assemble Layout Morrinsville April 2017.The layout in this image is 22.7mtrs long x 6.1mtrs wide.)

One of the other things to note is all the locomotives are Brass and white metal kits sets or Scratch built from various New Zealand modellers and manufactures. The goods and passenger rolling stock are 3d printed from my own design work and printed at Shapeways or local printers in New Zealand.

Of note image 20 Ka94I as built by the late John Gardener of Christchurch and I painted, weathered and add other detail was wanting. Ka94I is fitted with loco sound decoder V4. Image is built by Paul Berntsen of Napier. Loco is also fitted with Loc sound V4 decoder.



(photo 28:Ab733 on Hamilton Bridge note the back drop is a photo looking south down the river from



the middle of the actual bridge over the Waikato River some of the modern buildings on the river banks were photo shopped out of the image. The image was printed on a self-adhesive label 2300mm long x 1500mm wide. The locomotive is brass and originally built by the late John Gardener. I re-built, painted and weathered in 2005 when I 1st purchased the loco, the loco is fitted with a loc sound 3.5 decoder.)



(photo 29: 3d printed NZR 2nd class 50ft Rotorua passenger car. The car is made up of a 1 piece body. The chassis / floor with all the brake detail and under floor detail is printed in as 2nd part. The bogies are printed with 4 x axle boxes and axle box keepers. The axle boxes are fitted with 2 x 2.5 x 2mm roller bearings. The interior is finished off with 3d printed seats and fitted with people moulded in china.)





(photo 30: 3d printed NZR URC Cement wagon the pods and all the pipping are printed in one piece attached to a cradle /carrier to hold rigid, the chassis and all it related pipework are also printed in 1 piece bogies are printed with 4 x axle boxes and axle box keepers. The axle boxes are fitted with 2 x 2.5 x 2mm roller bearings.)







(photo 31: The long term plan is to fully scenic the remaining modules of the layout adding more buildings and scenery. This image is a small area I have been working on in more recent times.)



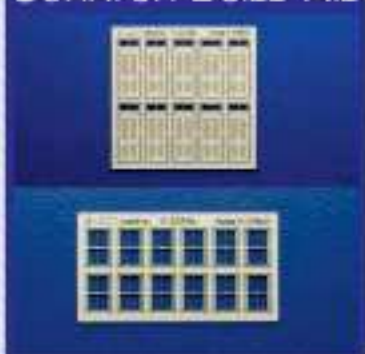
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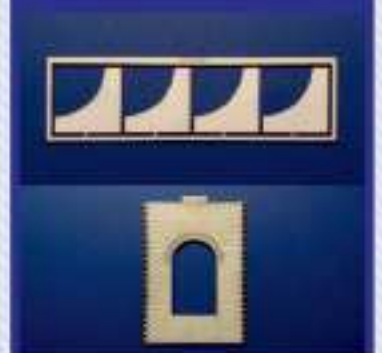
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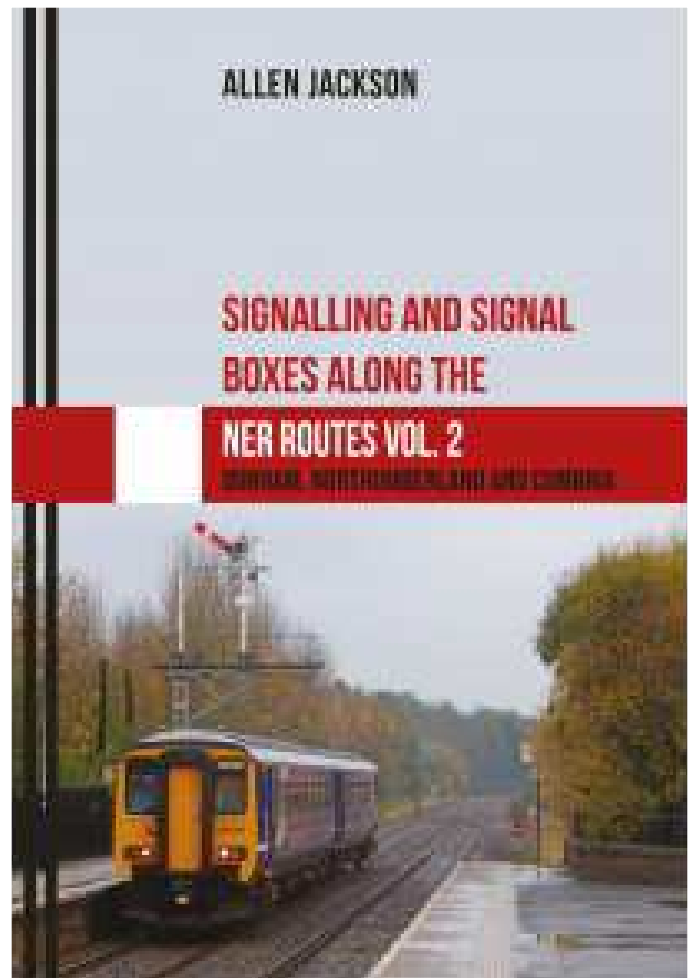
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Book Review by Terry Rowe

This is another in the series by Allen Jackson once again using an array of photographs to illustrate the story of signalling in the principal constituents of the LNER – continuing here with the second volume, which tells the story of the North Eastern Railway in Durham, Northumberland and Cumbria.





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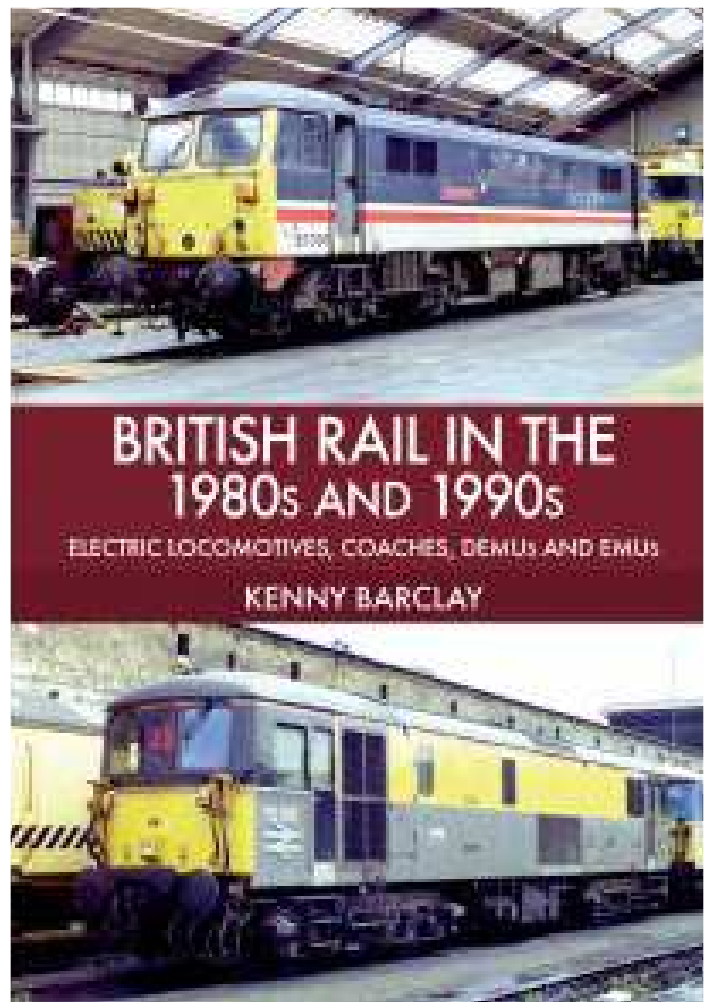
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Book Review by James Cullen

There is a huge selection of railway books available for the enthusiast to buy however it is rare to find a gem like this one.

Written as a companion to an earlier release - British Rail in the 1980s & 1990s: Diesel locomotives and DMUs. This is a compendium that is well worth buying.



Not only is it written by a former railway employee, Because of the authors ability to access areas that many of us cannot there are some wonderful behind the scenes photographs to coincide with the detailed and informative text.

Arranged By locomotive class & then number in class (73001, 73002 etc) it is relatively quick and easy to look up a particular loco or unit.

Each image comes with an informative text box with details of current status, livery changes (keep any eye out for some unique liveries that were short lived) and a history of the subject.

The photos of coaching stock are of particular interest to me as they are something that is often overlooked.

The sections on DEMUs and EMUs will certainly appeal to those who worked and lived around them. The vast array of liveries and classes is sure to stir up memories of commutes to work, shopping trips and days away back when there was a real variety of units on the network.

Its easy to forget how much more than BR Blue there was in the 80s & 90s but this book is guaranteed to remind you.





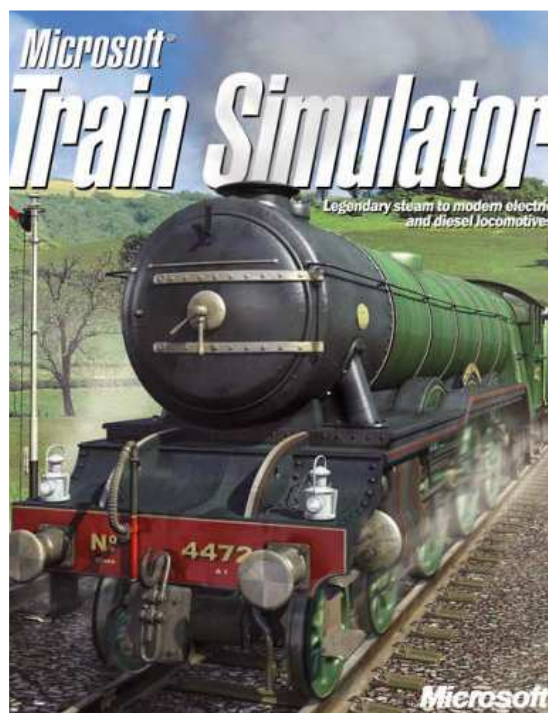
# What Future for The Model Railway Hobby?

By Alexander Croft

I have seen many posts online in recent months talking about the future of our hobby with increasing concern about the lack of young modellers entering the hobby, many comments were also observed about kids playing video games rather than getting involved with a 'real' hobby.

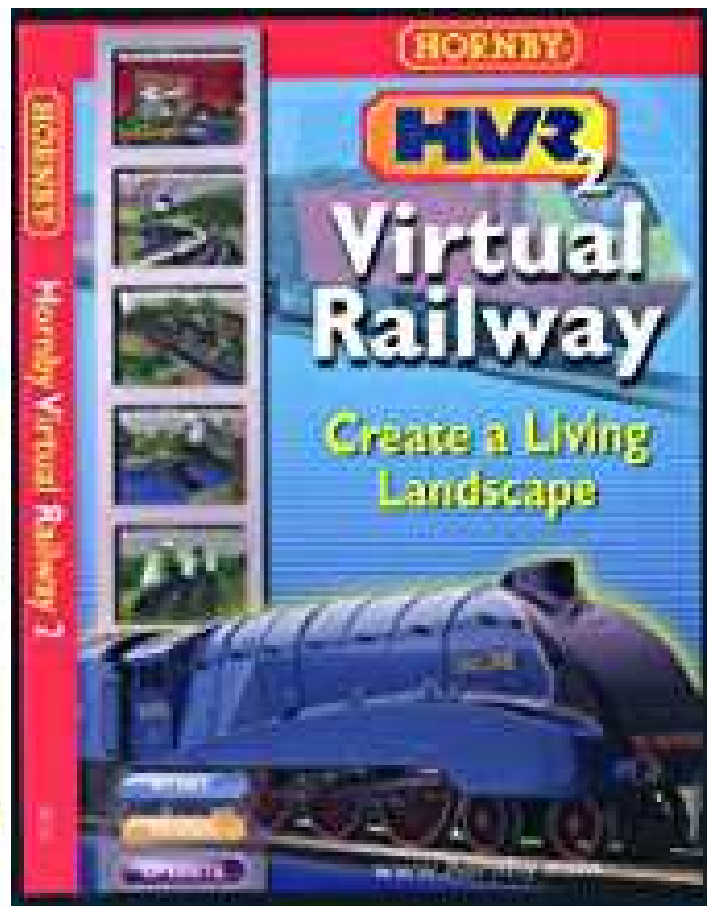
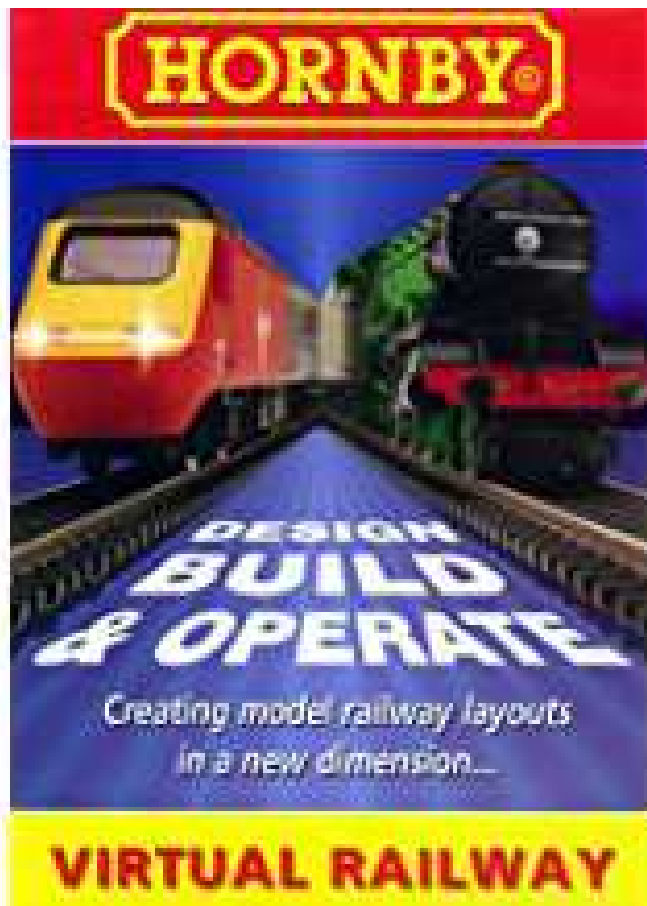
Are we right to feel it's all over because the 'kids' are playing video games rather than getting involved with model railways?

Answering this question is not as simple as it first appears, the addition of DCC computer control means in many cases we are now very close to 'video gaming' ourselves. It is important to note that the computer games industry has not left the model railway market unserved, the range of rail simulator games that have made it to market is impressive and I rarely visit a show now where at least one of these 'games' is on sale.



I will readily confess that even I have experimented with such games (although not more recently), I first experienced a rail simulator in the form of microsoft's Train Simulator. The novelty of driving the flying Scotsman in simulated rain didn't last long in my case, the graphics and processor capabilities were just too low to impress. That said such early examples were bound to face challenges that improved technology would easily be able to resolve.

Hornby have themselves entered this digital computerised model railway world, First with the Hornby virtual railway and then with Hornby virtual railway 2. In my humble opinion these programs were excellent for planning a model railway, but they rapidly became restrictive with limited rolling stock and track options. In short Hornby had the right idea but with a complete lack of options from other manufacturers and a relatively long and costly development process this bold bridge between camps simply failed to impress sufficiently. It is worth noting however, that others have since taken up this mantle and a variety of new track / layout planning programs have become available online.



Moving on slightly, I will not deny that it seems like our hobby is an ageing one. Rarely have I attended an exhibition and seen more than one layout with an interested child / teenager as an operator, but why is this?

I don't believe this is from a lack of interested parties, in my opinion it is the legislative barriers which hold back the youth from our hobby.

I am aware of several larger model railway clubs which have taken the time to complete the associated paperwork and monitoring concerns to allow younger members, The Model Railway Club being one of the more prominent examples.



I am reminded at this point of an opinion expressed in an interview about the future by a former head of Hornby, that the future of model railways was holographic train sets. I feel at this point that I should say, while I accept and agree that the hobby needs develop and make use of modern technologies. The day we abandon owning a physical model railway to me will represent the death of our hobby, as inevitably at that point we will have been absorbed by the computer hobby.

So, can we save our hobby?

The short answer I think is no-one really knows the future, you only need to look at the recent troubles at Hornby to see that.

So, how can we build a future for our hobby?

That is perhaps the more important question to ask and I hope some of what I say helps to provide the hope for our future.

The first tangible glimmer of hope that I can see is the re-appearance of model railways on national television. For the most part the railway TV shows we have seen have been somewhat of a failure, either too vague and full of errors or just too educational (taking away some of the charm).

The channel 4 programme 'The Biggest Little Railway In The World' opened my eyes to what a show about model railways and miniature engineering could do for the future of our hobby, the show (although much complained about in certain online forums) attracted the attention of a whole new generation which might not otherwise of found the hobby.

I was lucky enough to witness the public reaction to the show, firstly at the London Festival of Railway Modelling Alexandra Palace. At this show children pointed and shouted out load 'That's Silver Lady' (the loco was a special guest on the MRC stand), talking with the parents at the show proved that they would not have attended the show without the TV series.





The second exhibition to prove the positive effect of such TV exposure was the national Garden Railway show at Peterborough (the last time silver lady was in steam), the buzz generated by this loco and the very special steaming of the star locomotive ‘Silver Lady’ was very good to see and with only one single negative voice in a day filled with hundreds of positive

comments. The most memorable of these comments being ‘That TV show is the reason I’m here today’, but there were so many positive comments it would take weeks to note them all down.

As an important side note, ‘The Biggest Little Railway In The World’ is up for a TV choice award and if you want to vote for the programme you can do so here: <https://awards.tvchoicemagazine.co.uk/vote-here> , with luck we will see the show win and encourage further TV programming of this kind (which can only strengthen awareness of our hobby).



Following on from 'The Biggest Little Railway In The World', channel 5 appear to be preparing a model railway building challenge for TV and this can only serve to further the interests of our hobbies future.

So, after careful consideration is the future of our hobby secure?

As can be seen above there is no quick answer, but given the facts so far, I would have to say that there is a future for our hobby. The arrival of new technologies and innovations (and smaller homes) means that the continuing format of the hobby is far from certain and 'up for grabs', but as someone once said "the future is what we make it" so let's make it a good one. Happy Modelling!



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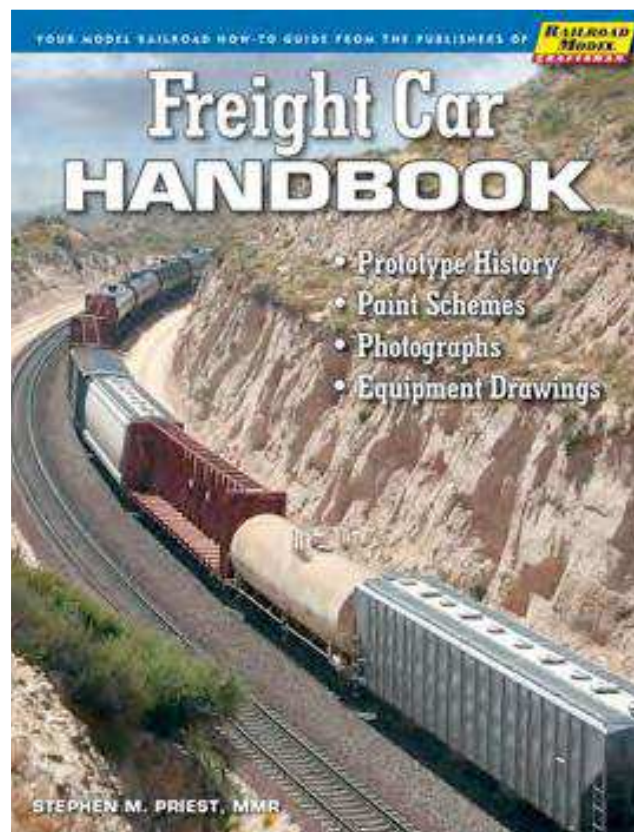
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# **Why Plastic and why In 9mill!**

By Neil Ward

Over the past 16 years working in product development roles I have been involved in projects where prototypes have been produced by numerous methods such as CNC, milled and turned or Rapid Prototyping.

My 1<sup>st</sup> encounter with rapid prototypes was in 1998. The RMIT (Royal Melbourne Institute of Technology) produced all the components for a Drench gun project I was working on. Although the surface finish was relatively poor I quickly saw the possibilities that could be adapted to producing model railway components from 3D designed prototypes.

Even at that stage of my modelling I had become tired of buying kits that needed to have a considerable amount of time spent filing and sanding to even up sides that did not fit together squarely and in general needed a lot of work to assemble. At that stage RP technology did not have the finish that was worthy of turning into patterns for model making.

In 2001 I started working with PDT (Plastic Design Technologies) on several projects and at this point the finish and accuracy had arrived at point where I felt I could start to produce some model railway parts.

The 1<sup>st</sup> components were axle boxes and louvres for the Ec locomotive that Pat Eade produced via the Trackside range plus all the detail parts for the UBC4 wagon. Over the past 8 years I have been dabbling in 3/16 one piece body wagons and passenger cars and using existing commercial chassis and bogies from various suppliers.

My interest in 3/16 has diminished since I saw the Auckland 9mill layout at the 2004 Tauranga Convention. I started to purchase wagon kits and passenger car kits from 9mill Scale Products. I produced some 9mill L4 and L4a parts via rapid prototypes and then converted to pewter running on commercial chassis. It is proposed to rework these two wagons to be added to the range shortly as well.

See image 1.



Image 1 L4A Wagon



Nelson Kennedy had closed up shop and his 9mill Scale Products parts were no longer available, so I decided to do my own bodies of wagons I wanted. I had a small stock of KTI300 (BP27010) and KTI000 (BP26940) chassis which I used for the 1<sup>st</sup> two 9mill bodies (an Nc and Mc) I had 3D modelled about 4 years ago.

I had all ready started to produce parts for myself as I was planning to build my own 9mill layout. The intention was never to market parts as I just wanted to create rolling stock for the layout as quick as possible. Last year I was approached by Darryl Smith to look at producing a Guards van kit in 9mill. Darryl had been involved in pioneering NZR locomotive kits many years ago but was not fully aware how advanced I was in the 9mill wagon development.

After some discussion the 1<sup>st</sup> chosen project was the 30ft steel guards van. The original idea was to make a one piece body and a separate floor / chassis with full interior. The concept would have been a mixture of Urethane, pewter and brass. This would have required a RP prototype, then a silicon tool with an expected life of approximately 25 van bodies per mould. This may have been considerably less due to the undercut on the roof.

The other parts such as brake cylinders, tool boxes, air cylinders and interior fittings would be RPD and turned into pewter parts. Bogies were to be RPD and turned into brass. All pretty traditional. After drafting all the body parts and attachments, quotes were obtained to turn parts into rapid prototypes and interim quotes for Silicon moulds and urethane part prices. It was at this point it was determined the van cost would be excessive and would be unpopular based on the price. In addition, there would still be the old issue of extensive hand finishing an assembly of parts.

Following a conversation with Greg Keay (Glenorchy Models) I looked at the Shapeways website and studied the material options. I found that all the components could be produced from sintered nylon - a material Shapeways refer to as “White Strong flexible”. After uploading all the files I ordered what was required to complete the 1<sup>st</sup> 30ft van. While waiting for the van I prepared the Ub. This followed the same process only this time the model had the brake cylinder and air cylinder attached when uploaded. I received the box of 30ft van components in about 15 days after upload and order placement and then set about assembling the parts. See image 2.

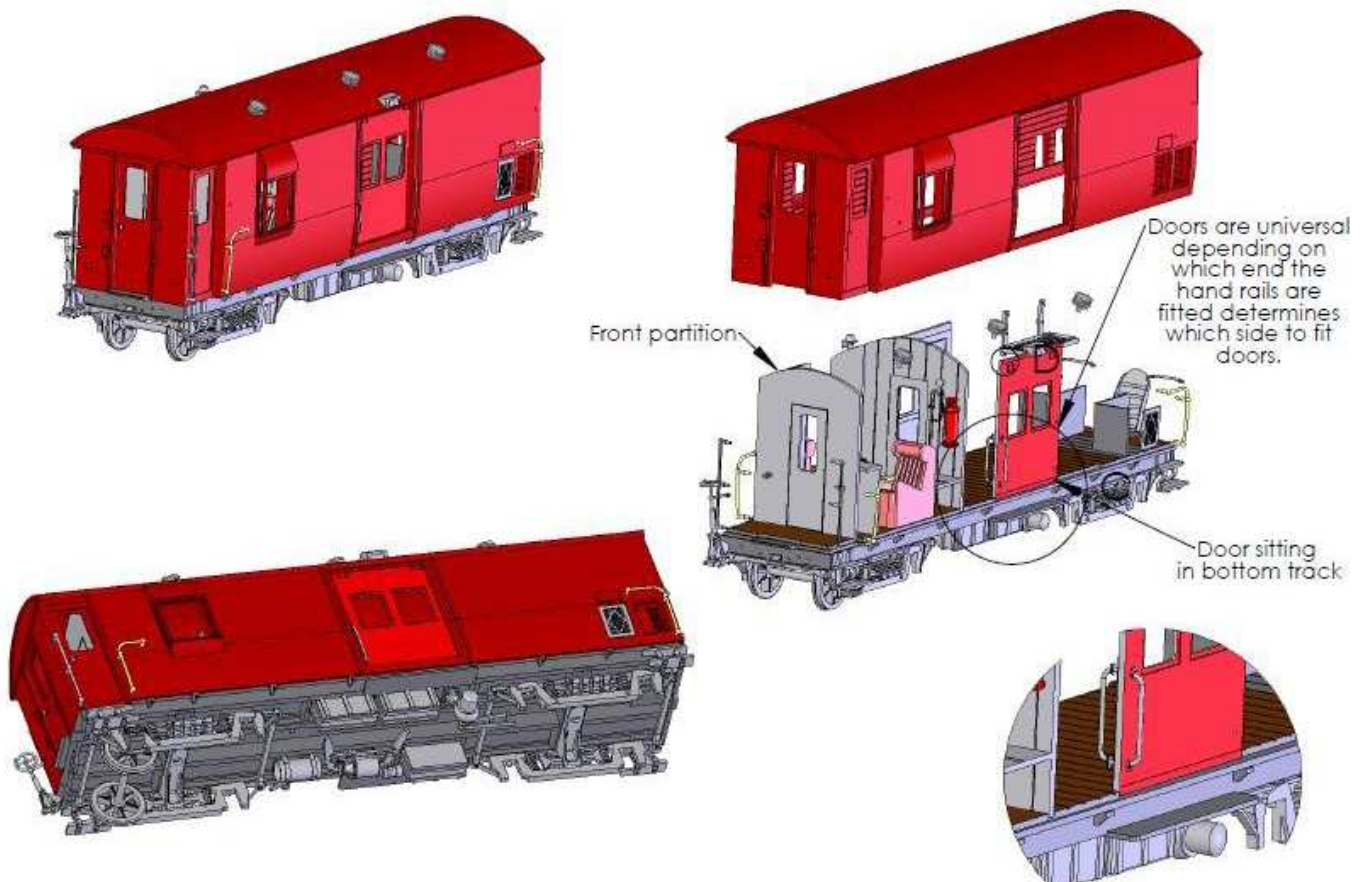


Image2: Screen captures of 30ft Steel van.

After completing the assembly and fitting air piping and brake rigging cut from styrene I decided I was getting to the point where I couldn't be bothered doing any more assembly that I had too. As at this stage I had received and assembled the 1<sup>st</sup> Ub model and completed the underneath detail in the same way. I experimented even further and created the Ur wagon with staunchions, chain tensioners and chain pockets along with brake cylinder, air cylinders, brake linkages and air pipes attached in the computer file. This model showed up about 15 days later fully intact so the next step was to set about modifying the 30ft van to the same level of pre-assembly.



In the mean time chassis for the Mc and Nc completed previously were required. In 2005 I had started to 3D model a 13ft underframe following the old method for making all the parts separate with the intention of spin casting in pewter. So over the course of a wet weekend in July, I assembled all the previous files to produce a 1-piece, 13ft chassis with everything on it ready for prototyping. Intending to make the chassis separate to the body I then thought I would give a crack at assembling the whole wagon with chassis attached. See image 2 for the chassis and image 3 for the assembled Mc wagon.

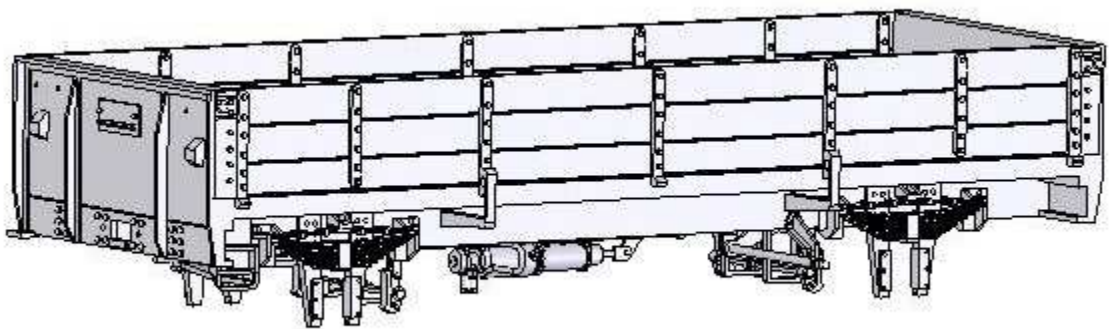


Image 3 screen capture of Mc wagon.

This method is not for everyone. There will still be those of you who prefer to build a model from flat sheets of brass or spend years producing a kit that is expensive and time consuming to assemble.

As I mentioned earlier these wagons are for those who wish to build in 9mill scale quickly and don't possess the skill to be part of the elite modellers who ascribe to the theory *'if it's not metal it's no good'*.

I do not agree with the recent comment in the Journal that parts should be produced by printing at a higher resolution and then cast. For a start it assumes that there is still a viable commercial framework to produce and market kits, something that the current arrangements in 9 mill do not do in a timely manner. In fact three major manufacturers who supported the scale have retired from it in the past couple of years.

The commercial framework suggested by Darryl will allow me to continue to develop the range, with a focus on more modern examples of locos and rolling stock. At present the aging population of current 9mill modellers points to the possibility of the scale dying completely if more younger members are not attracted to it. Darryl's belief is the computer based technology in RP modelling is more relevant in the skillset of younger modellers as opposed to the original methods employed to make models and that are no longer taught in the education system.

The other point is that private money and time has been invested to develop these models. There is ongoing work being done on surface finishes and painting techniques for the larger surfaces to get an optimum result. Until such time as the development is at a level with which we are satisfied, no models will be released for sale. There is some history in the scale of money being taken and things not being produced in a timely fashion. The current proposal is that modellers will order and pay direct from a website, and receive their model direct from the RP manufacturer 2-3 weeks later.

It is intended to offer three versions; RTR—final assembly, painting and decalling in NZ by several well known modellers; a complete raw kit that can be finished by the purchaser; and a body-only kit to which the modeller can fit the chassis/bogies and detail parts of their choice.

The 3D model needs to be a complete solid with no errors. The only process where there is some control over the resolution is Stereolithography (SLA). At present most models are in 0.15mm layers. The machine can go down to 0.05mm but the parts become 3 times as expensive and in most cases the 0.15mm layer are more than suitable for componentry. When creating simple or compound curves there is still a requirement to sand the finished surfaces.



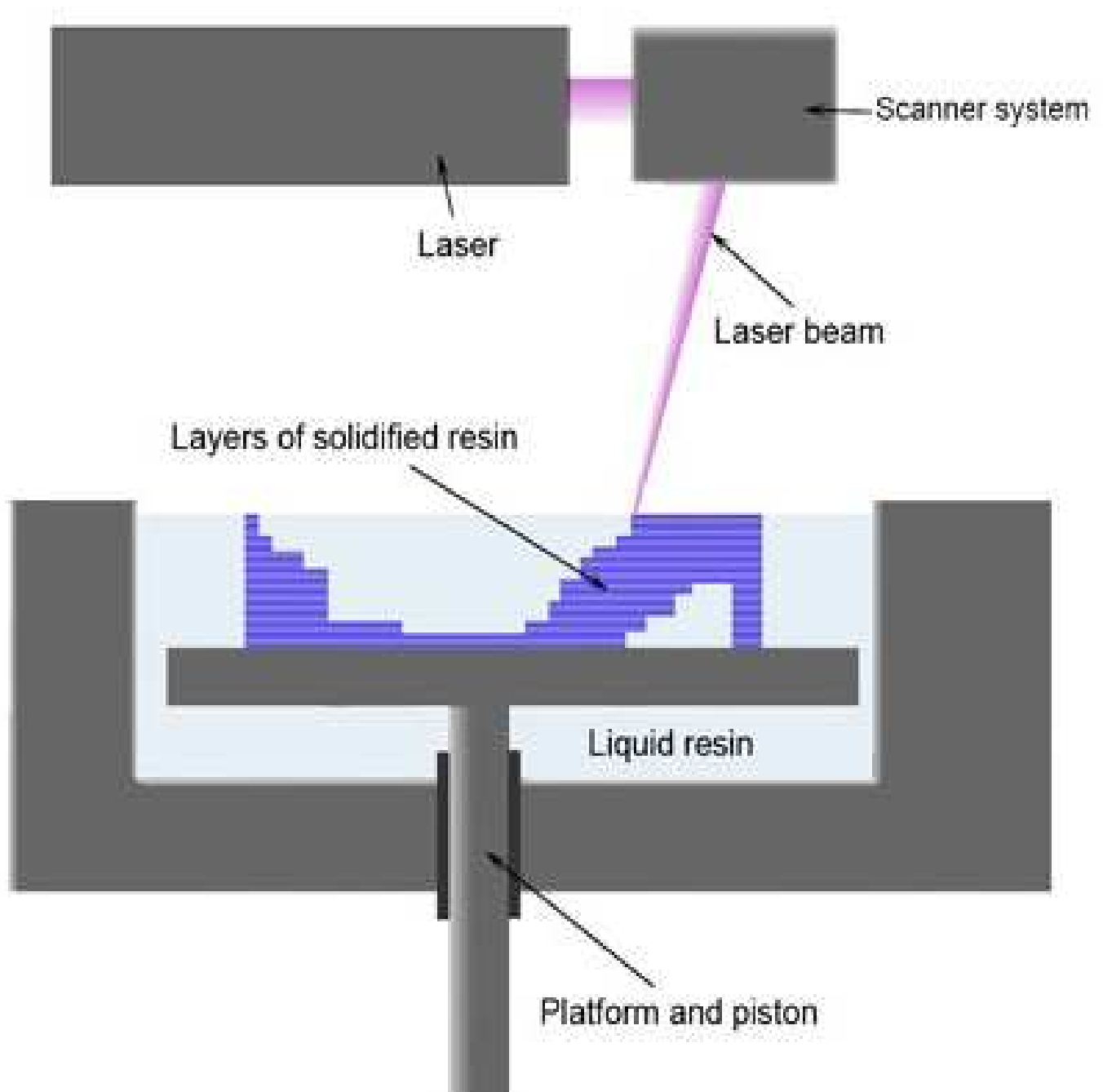
There are 3 types of processes I have used and are explained below. From my perspective, the least favourable is FDM.

**Stereolithography (SLA)** is an additive manufacturing process which employs a vat of liquid ultraviolet curable photopolymer resin and an ultraviolet laser to build parts layer by layer one at a time. For each layer, the laser beam traces a cross-section of the part pattern on the surface of the liquid resin. Exposure to the ultraviolet laser light cures and solidifies the pattern traced on the resin and joins it to the layer below.

After the pattern has been traced, the SLA's elevator platform descends by a distance equal to the thickness of a single layer, typically 0.05 mm to 0.15 mm (0.002" to 0.006"). Then, a resin-filled blade sweeps across the cross section of the part, re-coating it with fresh material. On this new liquid surface, the subsequent layer pattern is traced, joining the previous layer. A complete 3D part is formed by this process. After being built, parts are immersed in a chemical bath to be cleaned of excess resin and are subsequently cured in an ultraviolet oven.

SLA requires the use of supporting structures which serve to attach the part to the elevator platform, prevent deflection due to gravity and hold the cross sections in place so that they resist lateral pressure from the re-coater blade.

Supports are generated automatically during the preparation of 3D Computer Aided Design (CAD) models for use on the stereolithography machine, although they may be manipulated manually. Supports must be removed from the finished product manually, unlike in other, less costly, rapid prototyping technologies.



**Selective laser sintering (SLS)** is an additive manufacturing technique that uses a high power laser (for example, a carbon dioxide laser) to fuse small particles of plastic, metal ceramics or glass powders into a mass that has a desired three-dimensional shape. The laser selectively fuses powdered material by scanning cross-sections generated from a 3D digital description of the part (for example from a CAD file or scan data) on the surface of a powder bed. After each cross-section is scanned, the powder bed is lowered by one layer thickness, a new layer of material is applied on top, and the process is repeated until the part is completed. Because density of the finished part depends on peak laser power, rather than laser duration, a SLS machine typically uses a pulsed laser. The SLS machine preheats the bulk powder material in the powder bed somewhat below its melting point, to make it easier for the laser to raise the temperature of the selected regions to the melting point.

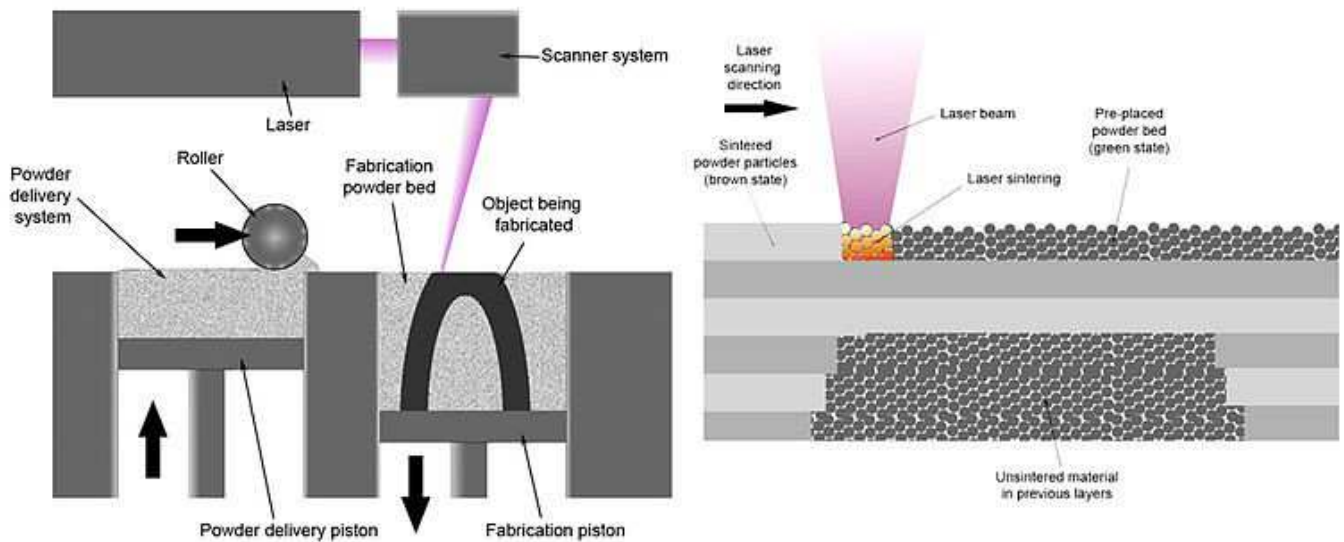
Some SLS machines use single-component powder, such as direct metal laser sintering. However, most SLS machines use two-component powders, typically either coated powder or a powder mixture. In single-component powders, the laser melts only the outer surface of the particles (surface melting) fusing the solid non-melted cores to each other and to the previous layer.



Compared with other methods of additive manufacturing, SLS can produce parts from a relatively wide range of commercially available powder materials. These include polymers such as nylon (neat, glass-filled, or with other fillers) or polystyrene, metals including steel, titanium, alloy mixtures, and composites and green sand. The physical process can be full melting, partial melting, or liquid-phase sintering. Depending on the material, up to 100% density can be achieved with material properties comparable to those from conventional manufacturing methods. In many cases large numbers of parts can be packed within the powder bed, allowing very high productivity.

SLS is performed by machines called SLS systems. SLS technology is in wide use around the world due to its ability to easily make very complex geometries directly from digital CAD data. While it began as a way to build prototype parts early in the design cycle, it is increasingly being used in limited-run to produce end-use parts. One less expected and rapidly growing application of SLS is its use in art.

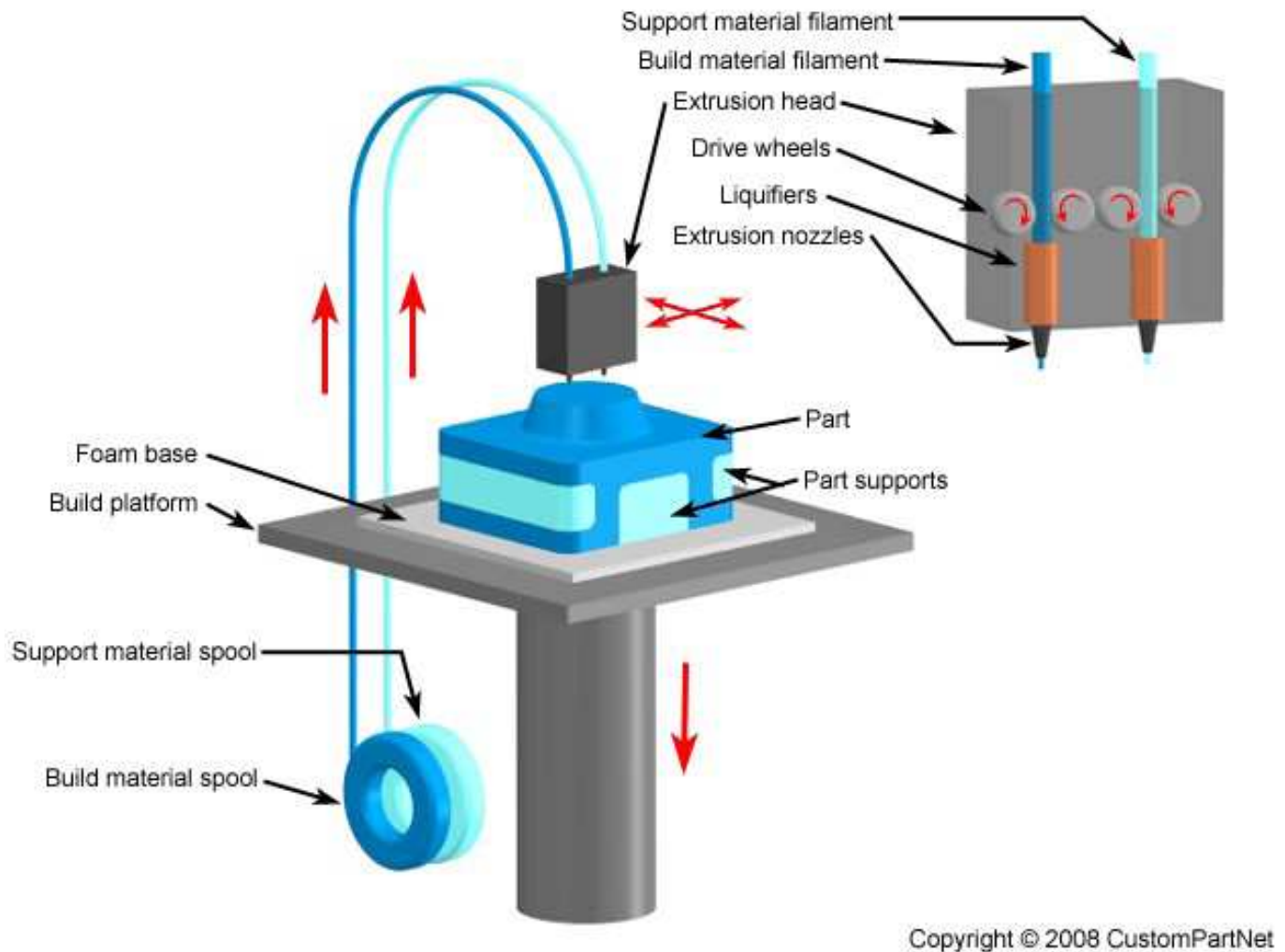
SLS was developed in the mid-1980s.



**Fused Deposition Modeling (FDM)** is an additive manufacturing technology commonly used for modelling, prototyping, and production applications.

FDM works on an “additive” principle by laying down material in layers. A plastic filament or metal wire is unwound from a coil and supplies material to an extrusion nozzle which can turn the flow on and off. The nozzle is heated to melt the material and can be moved in both horizontal and vertical directions by a numerically controlled mechanism, directly controlled by a computer aided manufacturing. (CAM) software package. The model or part is produced by extruding small beads of thermoplastic material to form layers as the material hardens immediately after extrusion from the nozzle. Stepper motors or servos are typically employed to move the extrusion head.

The technology was developed in the late 1980s and was commercialized in 1990.



The completed wagons to date form part of the ongoing application and development of the methods in 9mill – in much the same way as 1/64 did some 40 years ago in the development of pewters. One of the issues is the lack of mass in the RP'd wagons – the material is very light. It is also flexible in long narrow sections such as the U series of flat wagons and methods to add weight and stiffen the models are being tested. And as a final note we will not be offering this in any other scale – that market is already well served by other manufacturers and the commercial returns would not warrant the investment in money or time to amend the CAD files to suit.



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# Want to be a contributor?

Please send articles to [Editor@MRE-Mag.com](mailto:Editor@MRE-Mag.com)

All articles should be your own work and any accompanying photos or images must be your own or you must have the permission of the owner to send them to us to use in the magazine (this must accompany your material). Names and addresses must also be supplied.

Please send articles in Word format clearly indicating where you would like photos to appear in the text (if relevant, otherwise you'll get the editor's selection and layout!). Don't forget to clearly number or title the photos/images to accompany your written instructions as to placement.

We welcome articles on any and all of the following:

- Modelling: your layout(s) & projects you've done,
- Days out: preserved railways, railway themed pubs,
- Tips: anything to share with fellow modellers?
- A day in the life of: do you have a railway related second hobby, if so tell us about a typical day,
- Trivia: know anything unusual or funny to share?
- Pretty much anything that might be of interest to fellow modellers





# Readers Request(s): 47601



*Photo: 47601 from the John Law Collection  
Taken near Swallownest on the former Midland 'Old Road'  
with Brookhouse colliery in the background*

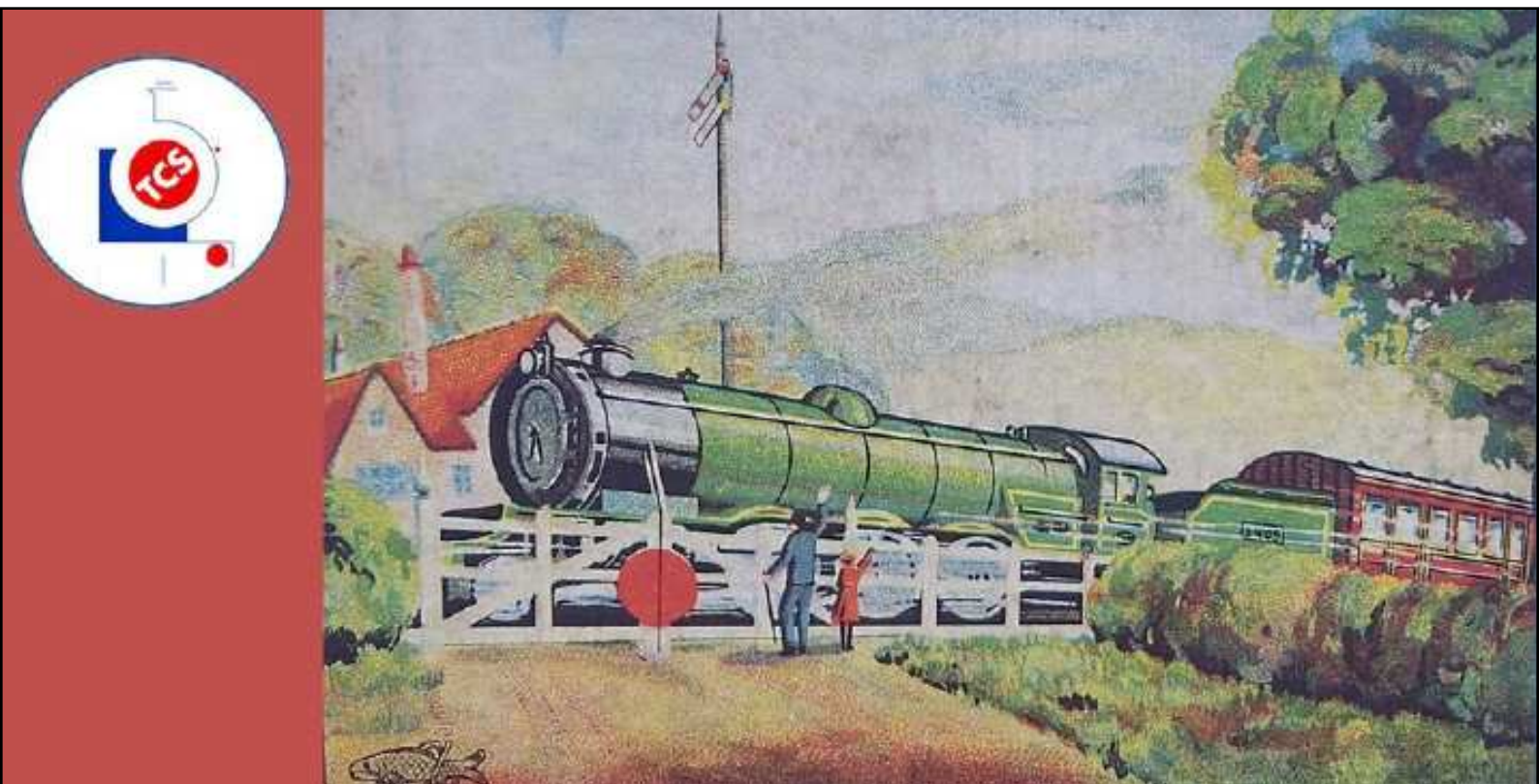
Information is required to complete an accurate model of 47601. This locomotive had an interesting history; originally 47046, the locomotive was re-engined and had its entire roof replaced to accommodate what would become the new engine for the class 56 being given the new number 47601 at the same time. The locomotive then went on to be re-engined and modified a second time with what would become the new standard engine for the class 58, again it was re-numbered after this work to 47901.



We know that as 47046 the locomotive was fitted with the standard class 47 roof; however, we are also aware that the roof was completely modified when the locomotive became 47601. We require clear photos of the roof arrangement for this locomotive as 47601, any photos of 47601's roof partial or otherwise would be greatly appreciated to help complete the model accurately.

Photos or information regarding 47601 can be sent to: [editor@mre-mag.com](mailto:editor@mre-mag.com) (please title your emails readers request 47601) or alternately you can contact us via our Facebook page.

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## **And Finally...**

Some inspiration of what can be achieved with a model, we promise these are photos of models. These photos curtesy of Robbie McGavin.



47996 Garratt on shed



92185 Class 9F



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	Link	Price	Date announced	CAD done	In Tooling	Seen 1st EP	Decorated samples	In production	On Board Ship	Released
Baldwin Class 10-12-D 4-6-0	<a href="http://hattons.co.uk/baldwin460">hattons.co.uk/baldwin460</a>	from £127.46	Jul 2014							
BR Mk1 Carlat	<a href="http://hattons.co.uk/BRCarlat">hattons.co.uk/BRCarlat</a>	from £31.41	Jan 2017							
Class H1 & H2 Atlantic 4-4-2	<a href="http://hattons.co.uk/h2atlantic">hattons.co.uk/h2atlantic</a>	from £161.46	Mar 2013							
Class 90	<a href="http://hattons.co.uk/c90">hattons.co.uk/c90</a>	from £152.96	Jul 2014							
Class 117 DMU	<a href="http://hattons.co.uk/c117">hattons.co.uk/c117</a>	£254.96	Sep 2015							

	Link	Price	Date announced	CAD done	In Tooling	Seen 1st EP	Decorated samples	In production	On Board Ship	Released
LSWR Class B4 0-4-0T	<a href="http://hattons.co.uk/b4">hattons.co.uk/b4</a>	from £93.50	Apr 2014							
Class 142	<a href="http://hattons.co.uk/c142">hattons.co.uk/c142</a>	from £115.18	Jan 2011							
Class 59	<a href="http://hattons.co.uk/dapol59">hattons.co.uk/dapol59</a>	from £124.43	Oct 2015							
GWR 'Large Prairie' 2-6-2T	<a href="http://hattons.co.uk/dapolprairie">hattons.co.uk/dapolprairie</a>	from £115.56	Dec 2017							

	Link	Price	Date announced	CAD done	In Tooling	Seen 1st EP	Decorated samples	In production	On Board Ship	Released
SECR P Class 0-6-0T	<a href="http://hattons.co.uk/pclass">hattons.co.uk/pclass</a>	£99	Sep 2017							
Andrew Barclay 14" & 16" 0-4-0ST	<a href="http://hattons.co.uk/barclay">hattons.co.uk/barclay</a>	£99	Sep 2017							
Beilhack ZZA Snowplough	<a href="http://hattons.co.uk/beilhack">hattons.co.uk/beilhack</a>	£43	Oct 2016							
O Gauge Class A3/A4	<a href="http://hattons.co.uk/recordbreakers">hattons.co.uk/recordbreakers</a>	£750	Aug 2016							
Rail Head Treatment Train (RHTT)	<a href="http://hattons.co.uk/RHTT">hattons.co.uk/RHTT</a>	from £118	Nov 2017							
FEA Intermodal Wagons	<a href="http://hattons.co.uk/FEA">hattons.co.uk/FEA</a>	from £32	Nov 2017							
Class 66	<a href="http://hattons.co.uk/66">hattons.co.uk/66</a>	from £150	May 2018							

	Link	Price	Date announced	CAD done	In Tooling	Seen 1st EP	Decorated samples	In production	On Board Ship	Released
Class 47xx 'Night Owl' 2-8-0	<a href="http://hattons.co.uk/47xx">hattons.co.uk/47xx</a>	£154	Nov 2014							
Class 07 Shunter	<a href="http://hattons.co.uk/cl07">hattons.co.uk/cl07</a>	from £111	Jan 2016							
O Gauge Class 37/4	<a href="http://hattons.co.uk/hel374">hattons.co.uk/hel374</a>	£560	Nov 2017							
O Gauge Class 50 (Refurbished)	<a href="http://hattons.co.uk/hel50">hattons.co.uk/hel50</a>	£560	Apr 2017							

	Link	Price	Date announced	CAD done	In Tooling	Seen 1st EP	Decorated samples	In production	On Board Ship	Released
Hltachi IEP Class 800	<a href="http://hattons.co.uk/IEP800">hattons.co.uk/IEP800</a>	from £239	Nov 2016							
Class 87	<a href="http://hattons.co.uk/hornby87">hattons.co.uk/hornby87</a>	from £144	Nov 2016							
SR 'Lord Nelson' 4-6-0	<a href="http://hattons.co.uk/lordnelson">hattons.co.uk/lordnelson</a>	from £136	Jan 2018							
NBR Class J36 0-6-0	<a href="http://hattons.co.uk/J36">hattons.co.uk/J36</a>	from £112	Jan 2018							

	Link	Price	Date announced	CAD done	In Tooling	Seen 1st EP	Decorated samples	In production	On Board Ship	Released
GER/LNER Class N7 0-6-2T	<a href="http://hattons.co.uk/oxN7">hattons.co.uk/oxN7</a>	from £87	Jan 2017							
BL 18" Howitzer Railgun	<a href="http://hattons.co.uk/railgun">hattons.co.uk/railgun</a>	from £42.50	Jan 2018							
5 Plank Open Wagon	<a href="http://hattons.co.uk/ox5p">hattons.co.uk/ox5p</a>	£10	Jan 2016							



Shows the stage the project is at based on the information available to us. CAD: Computer Aided Design. 1st EP: First Engineering Prototype. TBC: Price is yet To Be Confirmed (EST): Price is estimated.

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