

GARDEN

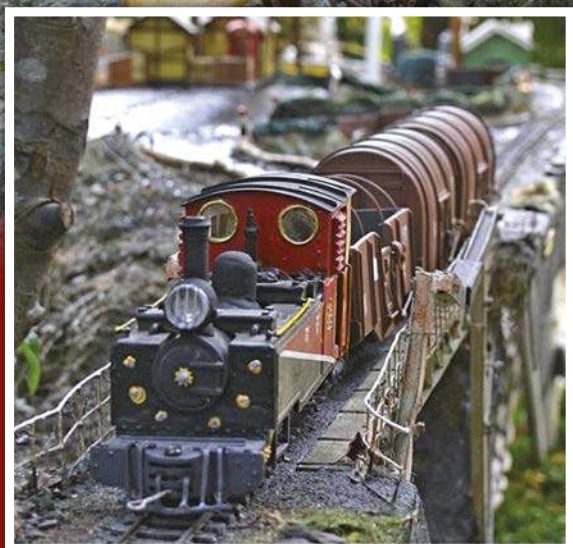
JANUARY 2019
ISSUE 293

Rail



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Publisher: Steve Cole

stevec@warnersgroup.co.uk

Editor: Phil Parker

phil.parker@warnersgroup.co.uk

T: 07879 664 383

Design: Neil Sayer

Advertising: Bev Machin

bevm@warnersgroup.co.uk T: 01778 392055

Allison Mould

allison.mould@warnersgroup.co.uk T: 01778 395002

Production: Pat Price

Email patp@warnersgroup.co.uk T: 01778 391115

Advertising Designer: Amie Carter

Email amiec@warnersgroup.co.uk

Marketing Manager: Carly Dudge

Email carlyd@warnersgroup.co.uk

Columnists: Mike Buttell, Ray Bye, Chris Dowlen,
Steve Howard, Alan Macfarlane, Greg Oehm, John Perkin,
Ralph Pitcher, Lew Robertson, John Rogers, Larry Sampson,
Dave Skertchly

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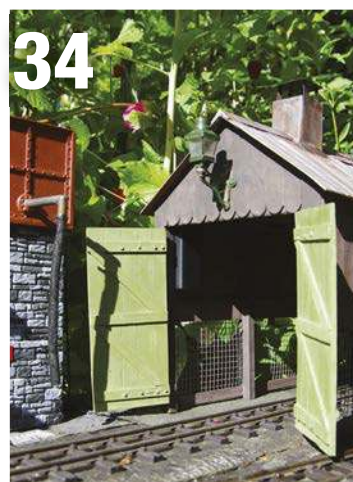
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Next Month: We visit Eric Londesbrough's Tees Valley Light Railway.



VIEW FROM THE END OF THE PLATFORM



On track with some railcars

This month, we have a bit of a railcar theme thanks to the arrival of several articles from builders of this very useful type of train.

As the cold weather reduces the enthusiasm for nipping out to the garden just to run a train, our lines can be very quiet at this time of year. However, just like the real thing, a single car train can be perfect for services in the off-peak season.

Dave Skertchly feels this way and builds his to try to save the Vale of Weedol Tramway from financial ruin as passenger journeys drop. From the middle of the 20th century, full size railways were trying the same thing, an example being the County Donegal railways who experimented with a wide variety of designs.

Sadly, few of these charismatic vehicles survive, but one pair that escaped can be found on the Isle of Man, and Manx resident Mike Buttell builds models of them on page 46. At present, the prototypes are sat in Douglas shed in pieces, their restoration having stalled. A combination of lack of funds and lack of suitable traffic means sadly they don't look like being completed any time soon. It seems that just as Dave finds, railcars aren't the perfect solution after all.

Both these builds are from scratch using lots of wood and ingenuity, something that applies to the two layouts within this issue.

Lew Robertson's "Recycled railway" returns to these pages, but has needed some work to bring it back into use, making it the "Re-recycled Railway". A smaller scale than our normal fare, it gives it's builder and his family a lot of pleasure, even if some of the methods



are a little unconventional.

For true odd-ball modelling though, how about The Biscuit Tin Railway? 10mm scale on 16.5mm track is a rare combination, but one that could appeal to many scratchbuilders. Let's face it, the mechanisms are readily available, if the kids have broken their train set at Christmas you have a start!

Garden Rail exists to support the modellers and one aspect that I find especially challenging is working with live steam locomotives. When I read that someone has moved a pressure gauge I don't really know what this means. Assuming I'm not alone, we will be running some articles demystifying the process, starting with John Rogers plumbing the cab of Hereward The Wake.

In a similar vein, Alan Macfarlane is looking at water. You thought it was all the same? Apparently not. What we

pour into a boilers can do more hard than good it seems.

Sticking with steam, next month, Tag Gorton is back with a new series for live steam beginners. With real locomotives being such great value nowadays, there are always people who need this help, and a few old-timers who can pick up some new tricks and tips.

Of course, it helps to have a fine set of Garden Rail back numbers on the shelves of your railway salon, but not all of us enjoy that luxury. The good news is that the digital world offers a solution that will save your bookshelves from strain.

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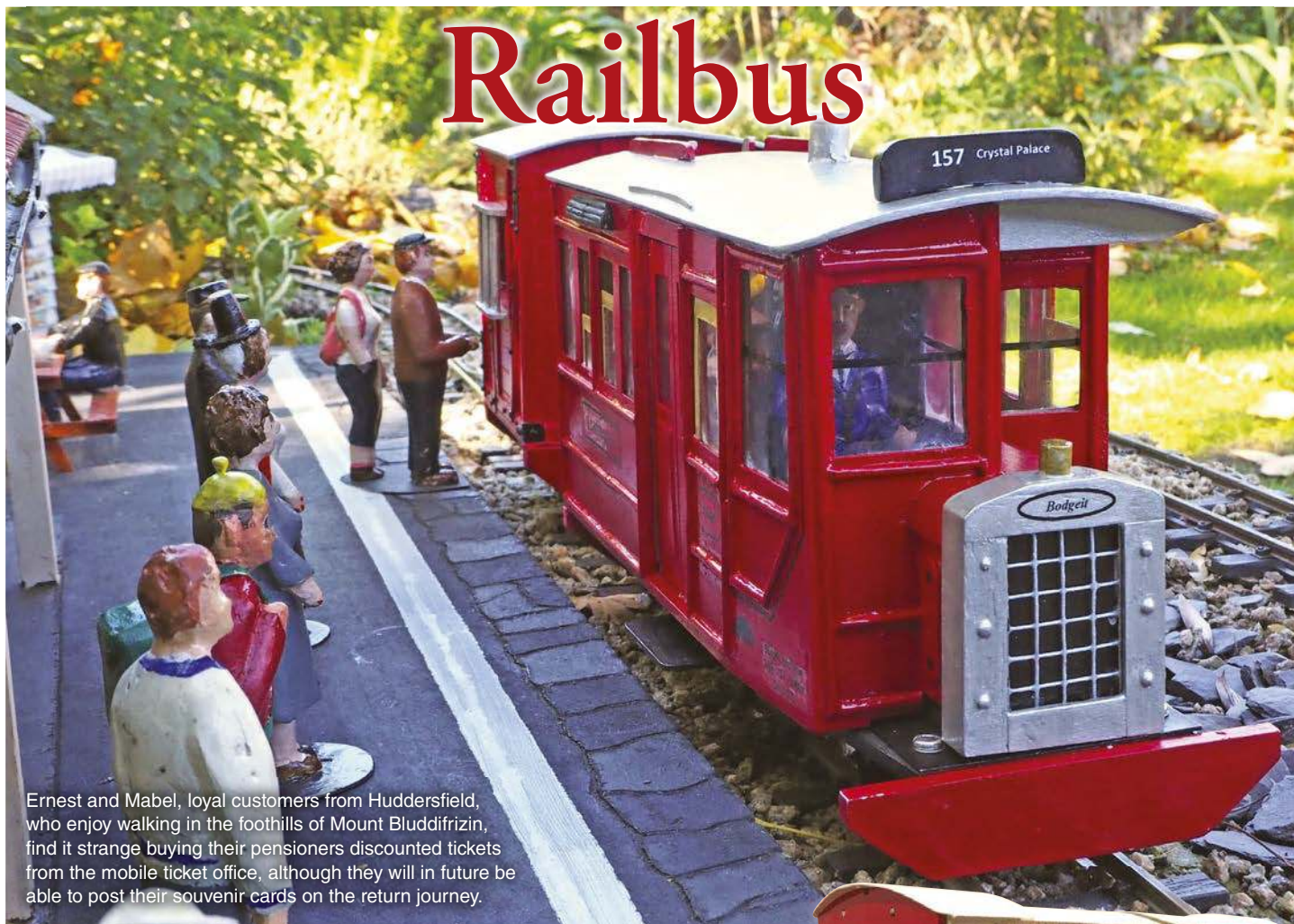
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Time travel in a 1929

Railbus



Ernest and Mabel, loyal customers from Huddersfield, who enjoy walking in the foothills of Mount Bluddifrizin, find it strange buying their pensioners discounted tickets from the mobile ticket office, although they will in future be able to post their souvenir cards on the return journey.

Dave Skertchly travels back in time to 1929, the year of the Wall Street Crash, to see if a railbus could have saved the Vale of Weedol Tramway.

From time to time photographs of cute, quirky little railbus models turn up in this magazine and I was inspired to make one.

I searched for a suitable design to scratch build but could find none. In desperation I made the observation on Facebook that there seemed to be no rail busses on the British 2ft narrow gauge which, I added, it seemed strange given those lines parlous finances in the great slump of the 1930s. I was recommended to read "The Light Railway Railcar in Western Europe" by W.J.K Davies. This excellent book is ruinously expensive, but Pauline, who obviously loves me more than I deserve, presented me with a copy along with my favourite Easter egg. The die was cast.

The book was fascinating but in a

short final chapter the author comments that he has not included engineering details because they are boring, not so! There was only one way left to find out why there were no 2ft gauge rail busses on the British narrow gauge and that was to go back in time and make one, a kind of experimental archaeology. The technique, I decided, would be valid since our garden railways are actually real railways running in a real world environment.

I imagined myself in 1929 at a crisis board meeting of the Vale of Weedol Tramway. Gladwys Topnote, the Chairman, berated the rather shame faced Directors across a dingy smoke filled board room. "Isn't it funny how a simple little Choir Mistress like me can



Quirky railbus projects, are a feature of Garden Rail projects and Dave was inspired by this example restored by Carl Malone, regrettably we do not know the original builder.

come up with a solution to our financial problems, while all that you engineers can do is sit and grumble? All you have to do is fix an engine and driver to the front of a railway carriage using bits off an old lorry..." Arthur Run, the Chief Engineer of Bodgeit and Run Locomotive Works, felt the hardened sole of Sir Wilberforce Bodgeit's patent leather shoe impact with his shin and by the time his eyes had stopped watering the contract was signed for the Bodgeit

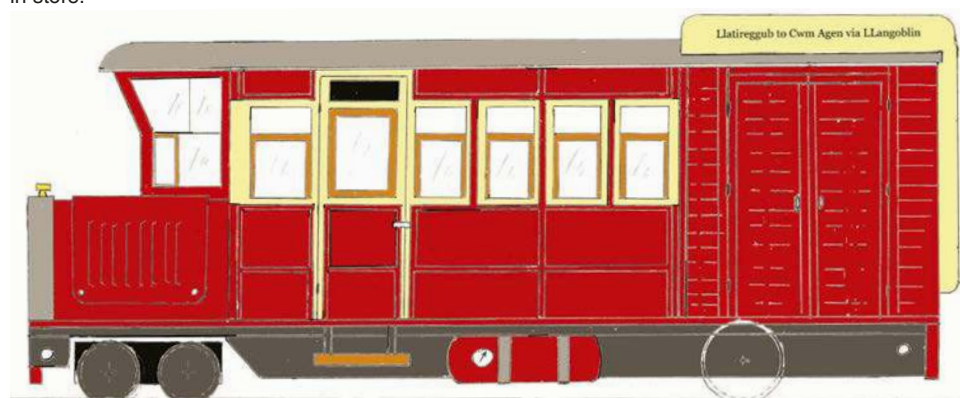
and Run Type 157 Railbus, Gladwys was delighted.

Problems started even while drawing the initial sketches. The engine and radiator had to be at the front since in those days engines were cooled by the hot water from the engine syphoning through the radiator. The driver had to be next to the engine since the controls were operated by muscle power, hydraulic and pneumatic actuators were new and expensive. Worse still the heavy engine had to be supported directly with wheels underneath it, so the resulting high engine position and the lorry style direct drive to the rear wheels resulted in the propeller shaft impinging on the passenger compartment. It was all a bit cramped.

The chassis was hacked from scrap angle iron and as soon as I had bolted it all together I took it out onto the tracks for a test. Another disaster ensued, the length of the fixed wheel base caused the wheels to climb up onto the track and the chassis to derail. Since petrol electric powered bogies of that size were expensive leading edge technology in 1929, the only option was to shorten

The idea which no doubt occurred to cash strapped railway Directors all over Europe was to build a railbus with an engine and driver bolted onto the front of a railway carriage.

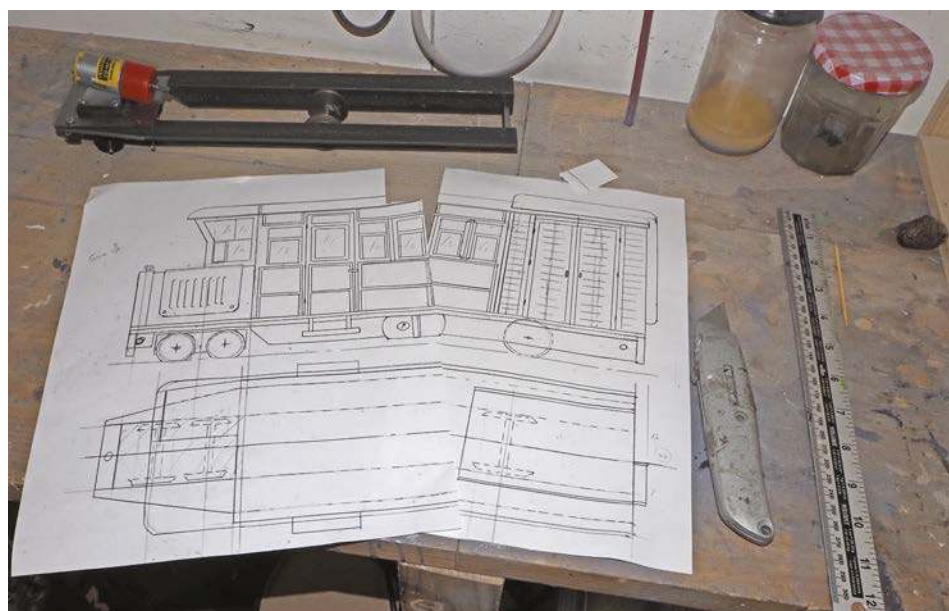
The Bodgeit and Run Locomotive Works Type 157 railbus proposal to the Vale of Weedol Tramway in 1929 was typically optimistic, but oh what disasters were in store!



The chassis rails were hacked from some scrap angle iron in the yard outside Lost'n Bodge Works.



The first disaster, the chassis would not run round the tight curves, but was improved although not ideal after cutting down by almost half its length.



Using pre-computer aided design techniques the blue prints were cut up to create the design for a shortened chassis.

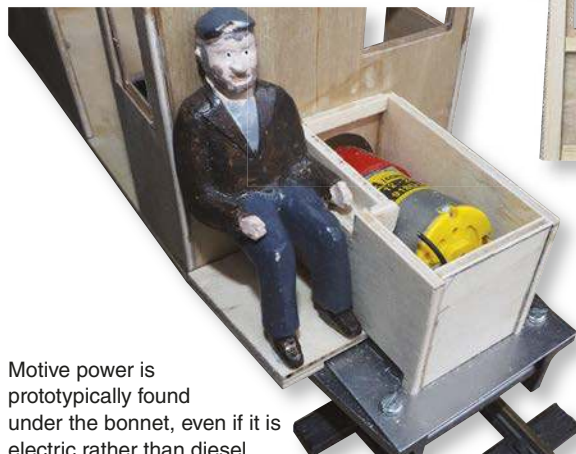
the chassis. I noticed that most model railbusses use power bogies which create a charming and practical model, with my prototypical fixed wheel base however the whole body would have to be shortened to fit the loading gauge and prevent the rear overhang from

hitting the bridge parapets and cuttings.

The drawings were cut up with a knife and stuck together again with a Prit Stick this being before the age of CAD. At this point Lenny Davis the apprentice suggested that we should use the chassis offcuts to make a caravan style luggage van. The tow bar however would need to be long to accommodate the overhang on the towing rail bus with a fixed hook, standard couplings would not be practicable. Interestingly the Irish narrow gauge cut off the front rather than the rear of their Railbusses creating a train which was rather like an articulated lorry.



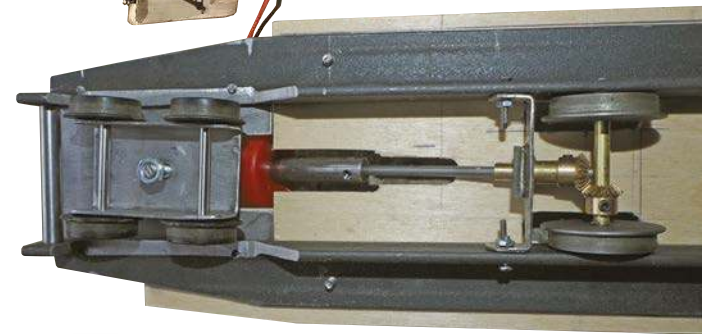
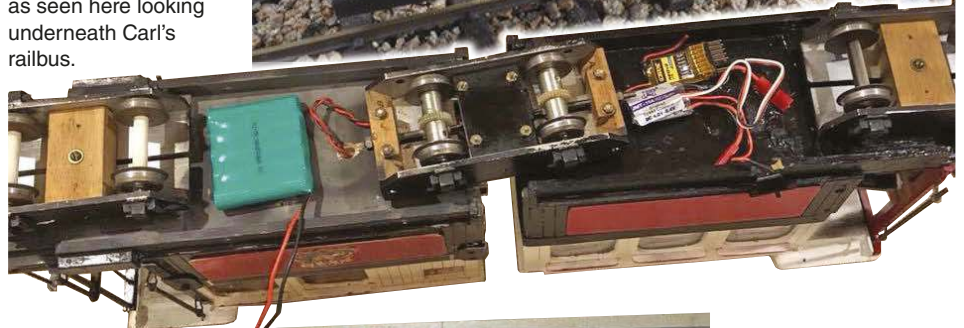
It seemed wise to check the clearances since the railbus has a huge overhang and a cardboard mock-up saved wasting expensive wood.



Motive power is prototypically found under the bonnet, even if it is electric rather than diesel.

The population of Llatireggub are amazed by the contraption seen on test.

The more usual solution for modellers is to use power bogies as seen here looking underneath Carl's railbus.



The fixed drive impinging on the carriage floor area. A lorry axle would have been too big so a new one was fabricated.



The parts cut out for the passenger compartment. The sides are from a sandwich of 1/64"ply and coffee stirrers into which the windows can be slid after painting is complete.



The drivers cab was going to be cramped and hot. It was mocked-up with card from a cereal packet.



The railbus body before painting with detail made from Dave's usual split cocktail sticks.

I had to consider the doors. They would have to be on both sides since train passengers can embark or alight from either side unlike passengers on an Omnibus.

The cab for the driver was made up from a cardboard template. It would be hot and cramped but the driver would have to put up with it, jobs were hard to find in 1929.

I fitted some seats made from scrap ply and coffee stirrers and to my horror, with 2 doors and a bench seat over the drive shaft it could accommodate only 7 passengers, not enough for the school run, Gladwys would not be pleased.

In comparison, a narrow gauge coach, in my case based on Glyn Valley Tramway designs, is 5'6" wide (1.7M), a metre gauge coach is about 8'10" (2.7M) one and half times bigger. Even the iconic AEC Regent London Bus was 7ft 6" (2.3M) wide, easily enough space for another column of seats.

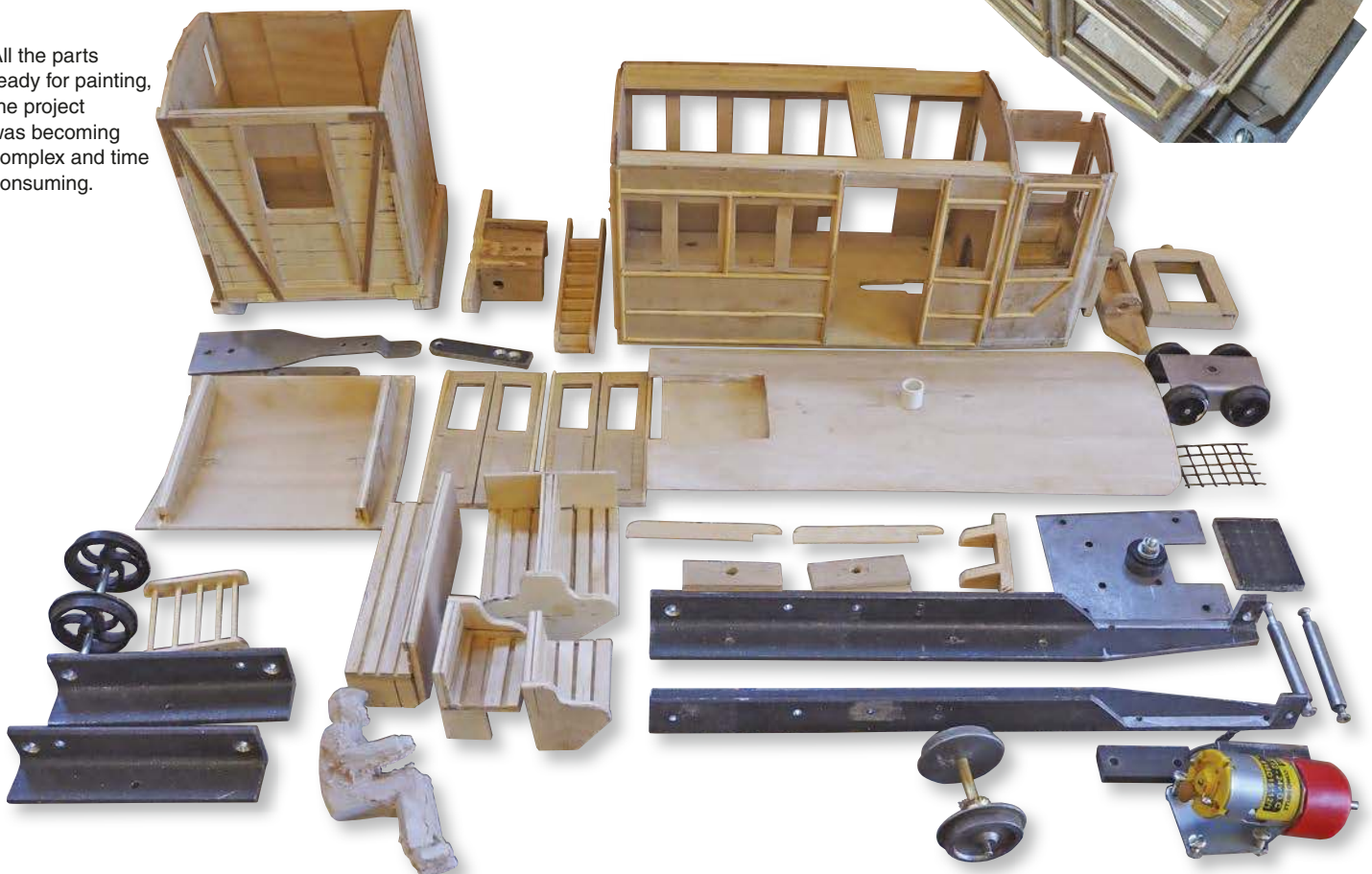
The whole project was by now getting complex since it transpires that a railbus is in fact a locomotive, carriage, luggage van and even ticket office all rolled into one vehicle, almost everything required to run a railway except for the tracks. It

made me realise just what an ambitious concept it was and certainly not the cheap quick fix envisaged by Galdwys Topnote. As bankruptcy loomed Sir Wilberforce may well have come to regret ignoring his Chief Engineer.

I temporarily fitted the radio control into the luggage van and started testing. Despite shortening the chassis it would just about bump through the newly installed short points but fortunately not derail. The motor loaded up on the

Another disaster, Dave could fit only 7 seats. Not enough for the school run.

All the parts ready for painting, the project was becoming complex and time consuming.



The chassis is neat but impractical. An articulated tow hook will be future improvement.

tighter curves as friction from the fixed wheelbase built up, track wear can be anticipated. It runs well on the outer circuit which is what it was designed to do so I am actually very pleased with my new model.

So as I sit on my rustic park bench outside the Sheep Shearers Arms, I sip at my fine pint of Auld Phagbutt and can rest assured that I now know why my favourite railways could not be rescued from bankruptcy by a simply converted lorry. The 2ft narrow gauge is just too narrow and the curves just too tight.

I can reflect that only a few years later the hydraulic and pneumatic controls, power transistors and thyristors, all suited to power body configurations, had become commonplace and affordable, but it was all too late. The railbus however was not dead end technology, it was a stepping stone

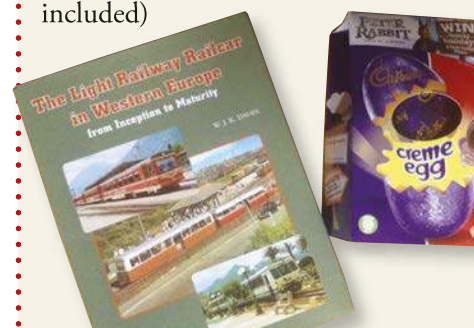
towards the now universal railway solution. Sadly it was our iconic steam locomotives which were actually dead end technology. The railbus, it seems, lives on, but alas not in my heart in the way that steam engines do. ■

While not the saviour of the railway Dave hoped his railcar would be, it's freelance design still looks attractive and running it in the winter will add a dash of colour.



A future modification will be an articulated tow hook which will however need to take the towing loads in braking without jack-knifing, another challenge.

The definitive book on narrow gauge railcars is *The Light Railway Railcar in Western Europe* by W.J.K Davies
ISBN: 978-1871980523
Publisher: Plateway Press - www.plateway.co.uk/overseas-railways.htm
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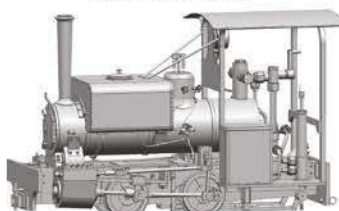
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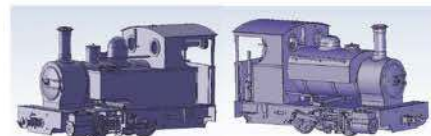
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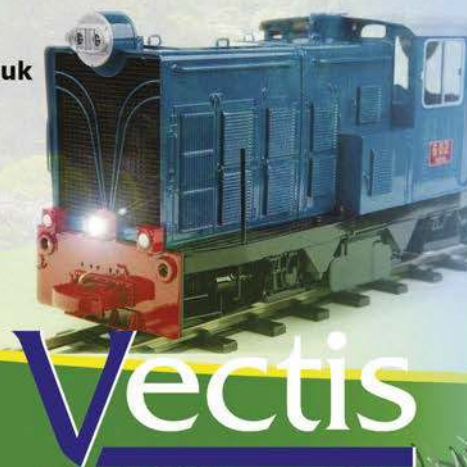
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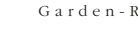
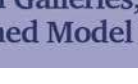
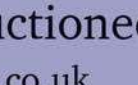
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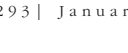
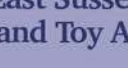
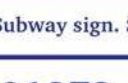
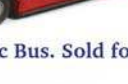
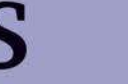
Loco's in Stock



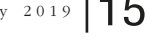
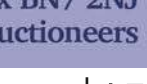
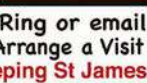
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The Biscuit Tin Railway

Larry Sampson describes his friend Rod Smith's unusual outdoor railway

Rod Smith started his modelling career at an early age, modelling boats, gipsy caravans, buses in many different scales but his passion has always been railways and, in particular, narrow gauge railways.

He has always made his models from

scratch using anything which came to hand. This has included Kelloggs Corn Flakes Packets, chocolate boxes, pill containers as well as plastic and perspex sheet. This has given the railway its own charm and led to the name 'Biscuit Tin Railway' suggested by the Rochford

Garden Rail Group of which he is a founder member. It is also reflected in the Railway's emblem which includes a Phoenix - a bird risen from the ashes.

Rod's interest in railways started with OO and OO9 models but these were quickly discarded as they gave erratic



An overall view of the line in Rod's garden.

Kalka Shimla Railbus built on a Hornby chassis.

running at the time. Eventually, he decided to use OO track with models built to a scale of 10mm/ft. This represented real life 18 inch gauge lines. It could be considered to be Gauge 1 narrow gauge.

Thus the BTR was born 37 years ago and some of the original engines and stock still run. The original BTR was an indoor layout but survived 2 incarnations as such before Rod moved to his present address and relocated the railway outside. He had always wanted to do this and the new garden allowed him the necessary space.

The railway itself is laid on a mixture of decking boards and marine ply panels covered in roofing felt mounted on fencing posts approximately 1 metre above the ground. This climbs to the Hill station roughly 1.5 metres off the ground rising at a gradient of 1 in 20.

The track joints are all soldered and control is 12v DC. However control is provided by a 2 Channel Futaba Transmitter connected to a receiver and 2 Servos connected to a Gaugemaster Controller situated in the workshop. The first paddle on the transmitter controls direction and the second increases speed in one direction. When let go the speed remains constant until the paddle is depressed when speed starts to decrease. In other words, it appears to have a brake function. Very

Lynton and Barnstable themed train.



Conway Castle made from an inside framed mechanism.

unusual but totally mechanical and not digital. It also has the advantage of allowing control from any position around the railway.

When the BTR was first conceived it was based upon a Welsh N.G. line but this has been transformed over the years until, in its latest incarnation, it became a rural mineral line in Devon. Further developments are taking place

Corris Railway Coach made from card.

to transform it into a line based upon the Indian Hill Railways.

Over time stock from South America, Romania, Malaya and St Kitts have all been added to the roster.

The track plan shows how the railway threads its way through the workshop and up to the Hill station at Shimla. Trains can be run from Shimla through Bielby Bridge, Siliguri Junction and terminate at Kurseong. Alternatively mainline trains take the line from Siliguri Junction to Bielby Bridge possibly including Kurseong and proceed up the mainline (being held in the workshop).

In the garden opposite the BTR is the refreshment room used by visitors to the railway and considered by the Rochford Railway Group to be their clubhouse.

As a scratchbuilder, Rod takes great pride in his stock. All locomotives use chassis from the likes of Hornby, Triang, Bachmann, Rivarossi, Marklin and an unknown manufacturer from Slovenia. The wheel arrangements have been modified according to need – for instance an American 2-6-0 Logging loco was converted into a 2-6-4 tank locomotive from the L & B. Yes, I know that the L & B did not have any 2 -6 -0



locos but the model captures the essence of this railway.

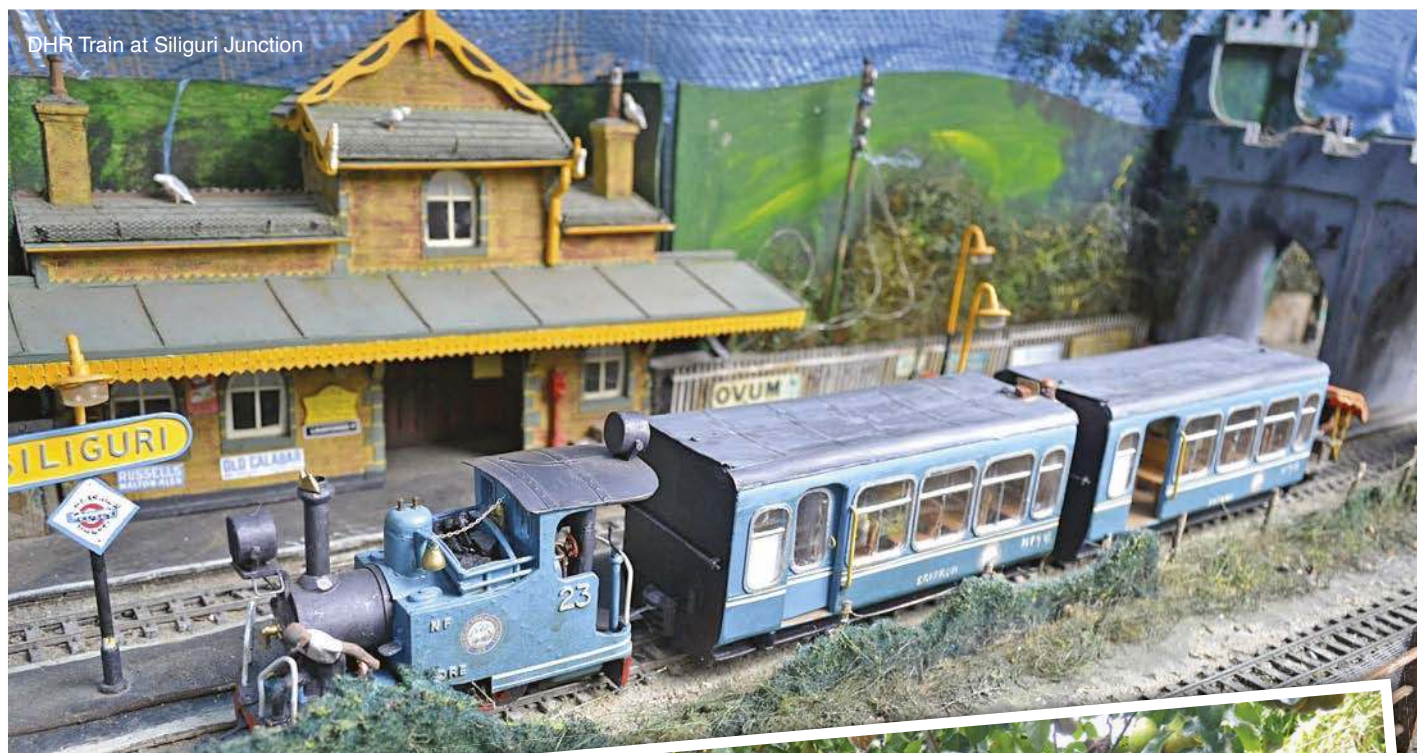
Rod has managed to do the same with some L & B coaches. Every locomotive is fully detailed using anything to hand such as pill capsules used for loco lamps. Currently bodies are made from sheet plastic either by using heat to mould shapes or by laminating and then carving the desired shape. Body sides are laminated and glazing inserted as an inner lamination. Despite the

proliferation of materials used, no effort is spared to include backhead details on steam engines etc.

The original locos are now 37 years old, still running well, and are based upon Welsh quarry Locomotives. The first is called Marchlyn and the second is named after Rod's Mother – Eva Ellen. Subsequently models were made of other Welsh quarry locomotives including Upnor Castle and the Baldwin.

German articulated Railbus.



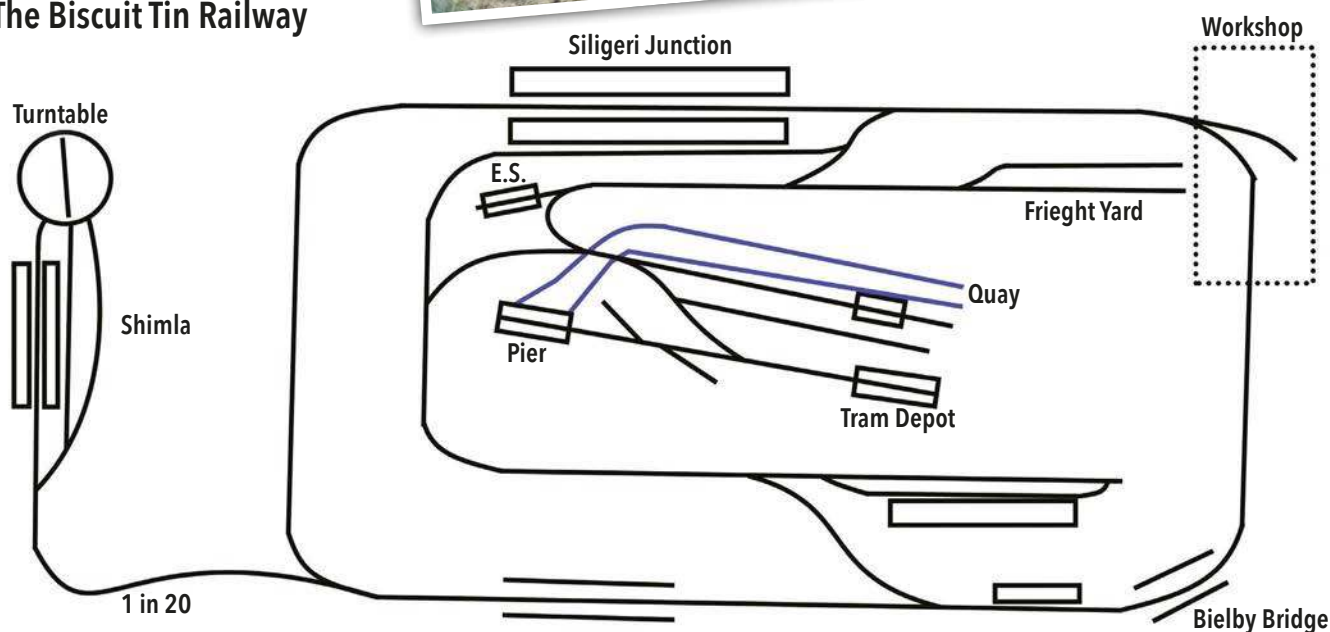


As Rod's interests widened, he has added models from Leighton Buzzard sand quarry, the Essex brickfields, and now a range of models based upon the Indian Hill Railways. As has been suggested, he has a wide ranging interest and he has included a number of railcars and trams. Notably he has modelled 2 of the articulated railcars which work the Kalka Shimla line and an articulated steam railcar from Germany with outside cylinders. Additionally Rod

The line takes several trees in its stride.



The Biscuit Tin Railway





Marchlyn and Eve Ella – both aged 37 years.

based upon motor mechanics and needed considerable re-working. As time went by, these became rarer and he now makes his own figures by laminating sheet plastic, cutting out a shape and then carving the 3D shape allowing him to provide figures for all scenarios.

The scenery, buildings, bridges are all made by Rod but it would take too long to describe them all in this article (*Editor: There are some interesting*

techniques used, so I'll be trying to persuade Larry to write a few examples up). This little railway has become a source of inspiration to many and a source of entertainment for even more. Rod has dedicated a lifetime to creating a little bit of magic in the Biscuit Tin Railway and he has a rare talent for capturing the atmosphere. We, in the Rochford Garden Rail Group have all benefited from Rod's talent on our own Railways and it is a pleasure to share the 'magic'.

Although the scale/gauge combination of 10mm/ft on 16.5mm track is not a popular one, it is ideal for anyone interested in narrow gauge modelling and intent on scratchbuilding everything. It is therefore not an easy option but the result can have an inherent charm all of its own. ■

Editors note: The BTR appears in a number of videos on YouTube – I'll like a few of them from the January Garden Rail topic on RMweb.co.uk

DHR NDM6 and freight train – all scratchbuilt



All photographs - Orbital Photography

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Robertson's "Re-Recycled" Railway 2018

Eighteen years ago, we first visited Lew Robertson's garden line and return for its restoration as well as looking to the future with perhaps an increase in scale.

23 years ago, I used some discarded bits and pieces to build my "Recycled" railway which appeared in the March 2000 issue of **Garden Rail**. This years hot, sunny summer helped me to crop the overgrown, clear the broken and renovate the 25 foot by 30 foot OO gauge layout resident in my small garden.

Stone (concrete) buildings were cleaned up and by re-cycling household items some extra features were created.

The Kenco "beer" vats shine nicely and the accompanying offices are a dead motorbike battery with windows made from coloured tape. The "Fishport" building was a model bus box taped over. All of these new and older buildings have poppy red roofs. This adds cheer to the dull days!

All the Peco Code 100 nickel-silver track has survived amazingly well, but the 4" by 2" original under wood has not. Perhaps it became "Joe's Cafe" for

A Hornby "Terrier" crosses a bridge with a colourful train of tankers.

woodlice and other insects and they were all hearty eaters.

The garden circuit is now a simple, but large, run for my model collection which includes a few strange creations such as a BR Class 5 Garratt and a Lima loco mechanism under a Hornby coach body with a pair of autocoches attached.

The castle and cannon were a toy for my granddaughter who, at 23 years old now, has no need for them but still likes the railway. Far better to use them as features on the railway than consign them to land-fill.

The whole thing is a giant "train set" perhaps, but it's fun! Surely what garden railways are all about.

The boat near the beach nuts is a re-cycled Easter egg box, built to a page sized plan in *Model Boats* magazine.

Four Hornby OO Class 08 shunters cope with uneven track very well because of the flywheels fitted inside them and with red tankers, deliver oil to the chippie at Trawlerton (My father was a ships' captain from Aberdeen) to cook the latest catch.

A crude re-used platform, soon to have a plastic canopy added, with its two car orange diesel unit reminds me of a long drive to Newcastle's Metrocentre some time ago whilst the SR Hornby Pacific is itself 20 years old and runs reliably.



A unique and entirely fictional BR Class 5 Garratt.

Hogwarts Castle hauls a train of re-painted Tri-ang clerestory coaches with a slightly incongruous BR blue van tagged on the back. The track in front will need a bit more work though as the hot weather hasn't been kind to it, such as the problems of running small scales outdoors.





Right: A Bachmann On30 Porter hauls a train made up of HO scale wagons. Despite these being half the scale of the locomotive, they don't look too strange together.



Left top to bottom 1: The best reason to take OO outdoors is the chance to run realistic length trains. The Hornby Merchant Navy with eight on would be too long for most people to run indoors.



2: Kenco coffee tubs are pressed into use as silos. OK, the cardboard won't survive very long outside, but they are cheap and easy to replace. The office is an old motorcycle battery.



3: The ever-reliable Hornby 08 takes its train past an oil depot that makes use of old car oil filters for the storage tanks.



4: Glossy red roofs might not be very realistic, but they cheer up the scene on dull, wet days and so I like them.



5: Another of my odd creations, a Hornby coach fitted with an old Lima mechanism and hauling a couple of auto trailers. It's reminiscent of a steam railcar I like to think.



6: Concrete buildings survive both the weather and my neglect!

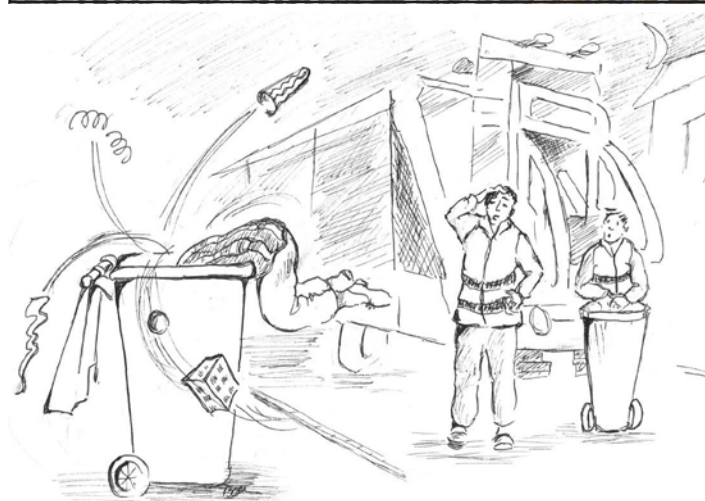
7: The platform is horribly crude, but I plan to add a plastic canopy to keep the passengers waiting for the Hornby Pacer unit dry. Mind you, the train doesn't seem too busy.



I occasionally revert to an American On30 (7mm scale on 16.5mm gauge track) narrow-gauge 0-4-0 and a HO double-stack size box van for variety.

Sadly, I may have to return to O gauge as my eyesight ages. With this in mind, a short section of American "perspective" modelling is being tried a 7mm scale Dapol 08 in front of the OO embankment behind. ■

Down on the beach, we find a boat made from a re-cycled Easter egg box based on a plan from a model boating magazine.



I thought we'd get here before him this week.

Hereward the Wake – The Bodging



We often read about replumbing steam locos, but what does this actually involve? John Rogers takes the mystery out of pipework.

The photographs accompanying my last article in **Garden Rail** 291 took us up to 2015 where Number 32 was a running loco and had been named Hereward the Wake. The gas firing arrangements were still a bit crude and ugly at that point. This article shows the steps I took slightly further towards realism. Not too far – please don't try to count the rivets...

First, a note about units. The Model Engineering fraternity, including vendors and manufacturers, still uses imperial units, and I shall do so in this article, to avoid confusion. Those of the metric persuasion are advised to have a calculator handy.

By 2015 I had a working loco, but with an oversized gas tank in a prominent position and extremely obtrusive pipework and valve. The problem was to get a smaller tank and to mount it in a less prominent position. Furthermore,

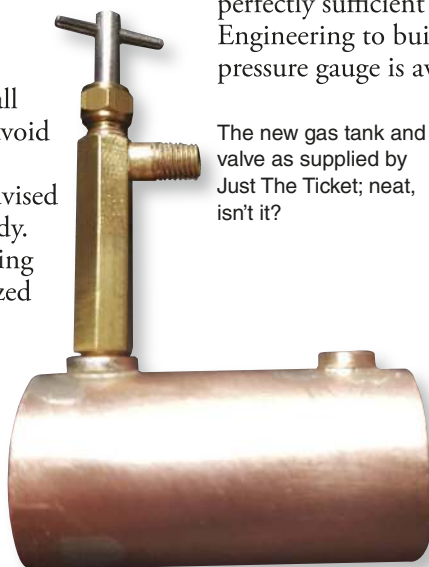
the pressure gauge as supplied was 1" diameter. This would be conspicuous on a loco with a full cab; on an open cab loco like 32, it stood out like a sore thumb and, trust me, I know enough about those...

I freely admit that I don't have the facilities or the skill to build my own gas tank. However, the David Watkins drawings, freely available on the 16mm Association web site, were perfectly sufficient for Just The Ticket Engineering to build me one. Also, a ½" pressure gauge is available from Polly

A freshly plumbed number 32 ready to work the slate empties.

Engineering, and neither of these are ludicrously expensive.

The gas tank fitted neatly under the cab floor and gave me room for the driver and associated gubbins. Not too much room; a quarry Hunslet is most definitely not the Flying Scotsman. I built a new cab floor with holes for the gas control column and filler valve, which involved some very simple metalwork; as with the loco body, thin



The new gas tank and valve as supplied by Just The Ticket; neat, isn't it?



“shim” brass is every bit as easy to work as cardboard. The observant reader will have noticed that I now had my extra bits, but they were not piped in. No, not in the manner of the ceremonial haggis - I mean connected to the appropriate parts of the locomotive.

Bodging pipework is nowhere near as difficult as it may at first appear. Firstly, I should point out that my safety valve is adjusted to blow at 30 pounds per square inch; this allows me to soft soldering throughout. I wouldn't like to do this on a loco running at 50 psi or more.

The two connections I need to make were from gas tank to gas burner, and from boiler via steam turret to pressure gauge using copper pipe.

CONNECTING THE GAS TANK

The best way to cut copper pipe, in my experience, is to use a Dremel or equivalent slitting disc. This gives a precise cut that is easy to clean up. OK, you can use a razor saw or even a hacksaw, but I don't think they give as clean a cut.

Bending copper pipe is best done using pipe benders. These are coils of spring steel that fit over the pipe and prevent it from kinking. Even so, I had to think about the path the pipes would take. Sometimes, it's worth going the long way round to avoid curves that are too tight. You'll notice that the pipe from the gas tank to the burner forms a U shape, despite the distance between them being less than an inch. This is quite deliberate; not only does it avoid sharp bends, it cuts down heat transfer from burner to gas tank and avoid problems due to expansion of the pipe.

If a pipe has been bent too many times, it gets brittle and difficult to bend. This is called “work-hardening” and is due to crystals forming in the metal; as a former X-ray crystallographer, I could bang on about this, but I won't. The remedy is simple. Heat the pipe in a gas flame and dunk it in cold water. The kitchen stove and sink are ideal for this, preferably while the Authorities are away. You may want to know that process is called “annealing”, so you won't be confused by Real Engineers.

The pipe attached to the gas burner was fairly battered by all the attempts

to link it to a sensible gas tank, and was 3/16" outside diameter, unlike the fitting on the gas valve, which was designed to take 1/8". This was convenient, though, because 1/8" pipe slides snugly inside 3/16". I cut the pipe down to a couple of inches and bent a length of 1/8" pipe to fit inside it and to reach the gas outlet from the valve.

I use solder paste for most of my soldering these days. Just smear it on the surfaces to be soldered, hold them together and apply a small gas torch until the solder melts; a couple of seconds should do for a small job. In this case, I smeared it on the outside of the 1/8" pipe and slid it into the 3/16". I find a little bit of “flux” over the paste helps it flow in when heat is applied. “Flux?” This is a paste or liquid which breaks down into a mild acid when heated and cleans the surfaces to be joined. I don't claim that the result is elegant, but it works perfectly. Incidentally, the gas torch I use is from the Aldi WorkZone range. It doubles as a soldering iron, and I love it to bits.

A word about steam and gas fittings here. They come in a number of sizes, both of “union” (the bit that screws together) and pipe. Whenever I can, I use 1/8 pipe and 3/16" x 40 tpi ME unions, which, happily, is what is fitted on the gas outlet. “Uh?”, I hear you say. 3/16" is the diameter of the union, the male bit that projects outwards. “tpi”

The new gas tank in place and plumbed in

is “threads per inch” and “ME” indicates that it is a Model Engineering thread. You can now happily forget this, except to ensure that the union you need matches the one with which you wish to unite. The lazy way to do this is to get a selection, and see which one fits and, yes, this is how I do it.

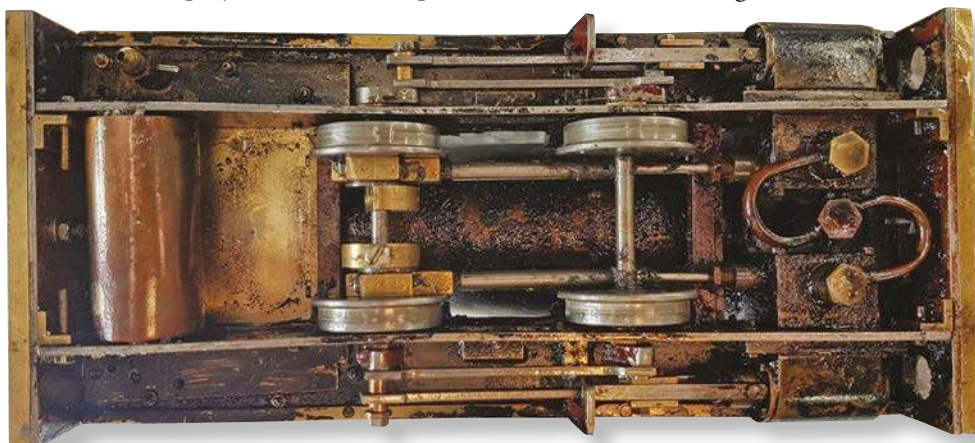
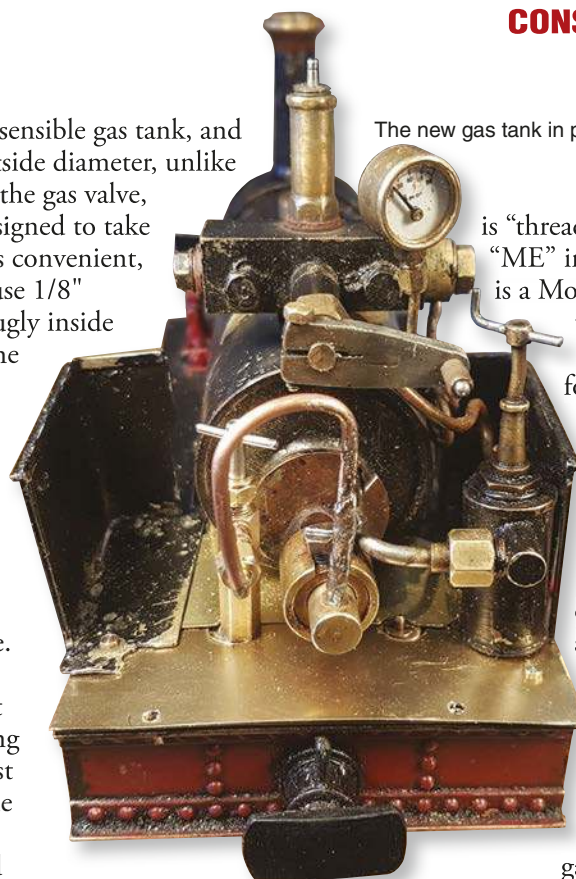
The pipe is attached to the male union on the gas valve by sliding

a female union on to the pipe (check that the threaded bit is facing towards the end you're joining). Then I smear solder paste on the outside of the pipe, slide a “nipple” (or “cone”) of the correct diameter (in this case 1/8") over the end of the pipe. I now check that solder paste hasn't got inside the pipe or nipple. If it has, it can be teased out with wire; it will not be so easy later on.

I like to turn the workpiece so that the pipe is facing upwards before heating up the nipple with a gas torch. Done right, the nipple settles neatly on to the pipe in a couple of seconds and Bob is my mother's brother.

Once it's cooled, and I like to wait for this to happen naturally, I slide the female union over the nipple and screw it over the male union, then tighten with a BA spanner. If all goes well, I have a gas or steam tight joint.

So, what can go wrong? I have been known to forget to slide the



Underneath view showing new gas tank between frames. It's a good enough fit to need no further reinforcement

female union on to the pipe, put it on the wrong way round or, even more irritating, have it drop off without my noticing while I'm digging out a nipple from my Things cabinet. Simply curse a bit, unsolder the nipple and try again. If I've been a bit over-generous with the solder, it can block the female union from slipping over the nipple. This can be sorted by melting the solder again with the gas torch and cleaning off the excess solder. Perhaps surprisingly, I find a coffee-stirrer broken diagonally is ideal for this. Once it's caught fire and been blown out, the carbonised tip is perfect for the job.

The difficulty is if one gets solder inside the pipe or nipple that you are soldering. No gas/steam will get through and it can take a while to diagnose the fault. Check twice before applying the heat.

How do I test the joint? With steam, I gently raise pressure and look for steam coming out. If you're not sure, a teaspoon held near the joint will show condensation if live steam is escaping. If you have a compressor, such as one designed for an airbrush, you can pump air into the boiler and test for escaping air by brushing on to the joint water laced with dishwashing liquid.

With gas, I put a very little gas in the tank, and I emphasise very little, open the valve, and listen and smell for leaks. If I hear and smell none, I vent the

tank, again add a very little gas, open the valve a smidgen, and test for leaks with the aforesaid washing-up solution. Or at least I should; I usually do it with a flame, but this is a practice that I do not recommend.

FITTING THE NEW PRESSURE GAUGE

In the real world, the pressure gauge is one of the salient features of an open cab quarry Hunslet. Unlike with most locos, it is visible from the front as well as side and rear. The 1" diameter gauge was rapidly replaced with a ½" version, but even this didn't satisfy me.

A little explanation is in order. The Wild Rose III chassis, on which 32 is built, has a steam turret with a number of 3/16" x 40 tpi (remember?) bushes. A "bush" is the socket that a union screws into, by the way. As supplied, the gauge fitted into a bush on the steam turret via a curly length of 1/16" pipe (think a pig's tail) and a "banjo bolt". A "banjo bolt"? This is a method of fitting into a bush by a hollow bolt through a collar with an exit pipe that locates with a hole cut across the bolt. Steam travels up the centre of the bolt, through the hole and into the pipe. The pip and collar allegedly resemble a banjo. Confusion isn't lessened by the fact that most people have never seen a banjo, let alone handled one, but it

was very popular in Edwardian days. Hence "banjo piers" and even an area of Bristol called "Banjo Island".

Now, this was fairly effective, although it tended to leak a bit because the surface of the turret wasn't perfectly flat. I didn't like the look of it, anyway, so I decided to be brave and fit it on one of the bushes facing the driver. I unscrewed the banjo bolt and replaced it with a plug removed from the bush to the driver's left. I screwed a male 3/16 x 40 union into the vacant bush and connected the curly pipe into it as before, but using the opposite process, this time soldering the 1/16" pipe from the gauge inside a length of 3/32" pipe, which I attached to the union in the same way as I did the gas pipe to its tank, this time using a 3/32" nipple and 3/16" x 40 ME female union.

If this sounds complicated, it really isn't. It was just a question of looking in the Things tray and seeing what will fit. A useful idea is to get hold of a few double unions (for connecting pipes to pipes) in various sizes. They will have all the bits you need. I hope my illustration will help rather than adding further confusion.

FINAL TARTING-UP

It does seem a dreadful shame to paint the pipes, after so much work has gone into them, but the beast really does look better for it. I use Rogers Improved Engine Black, aka satin matt black car spray. The trick is to spray into a lid and pick it up with a small brush.

Heat shrink cable tube makes for nice handholds on regulator and gas valve, being both heatproof and visible, and there's always room for a bit of bling on any engine! ■

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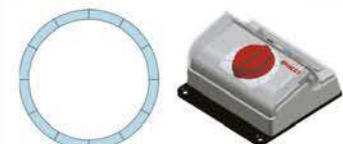
Close-up of port stern – cab much clearer now, the pipework is still a bit baroque, but plumbed into the steam turret

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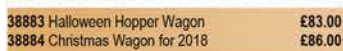
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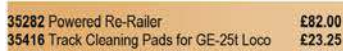


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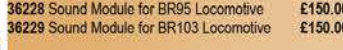
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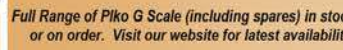
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G42 Garratt - 2018 release!

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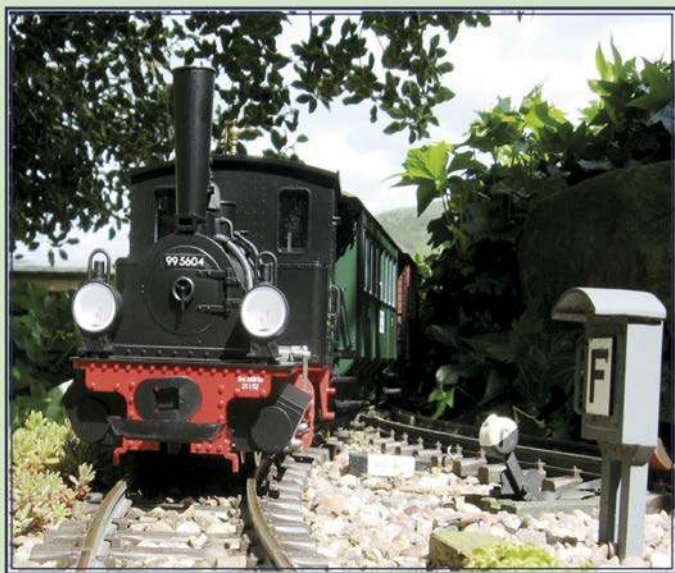
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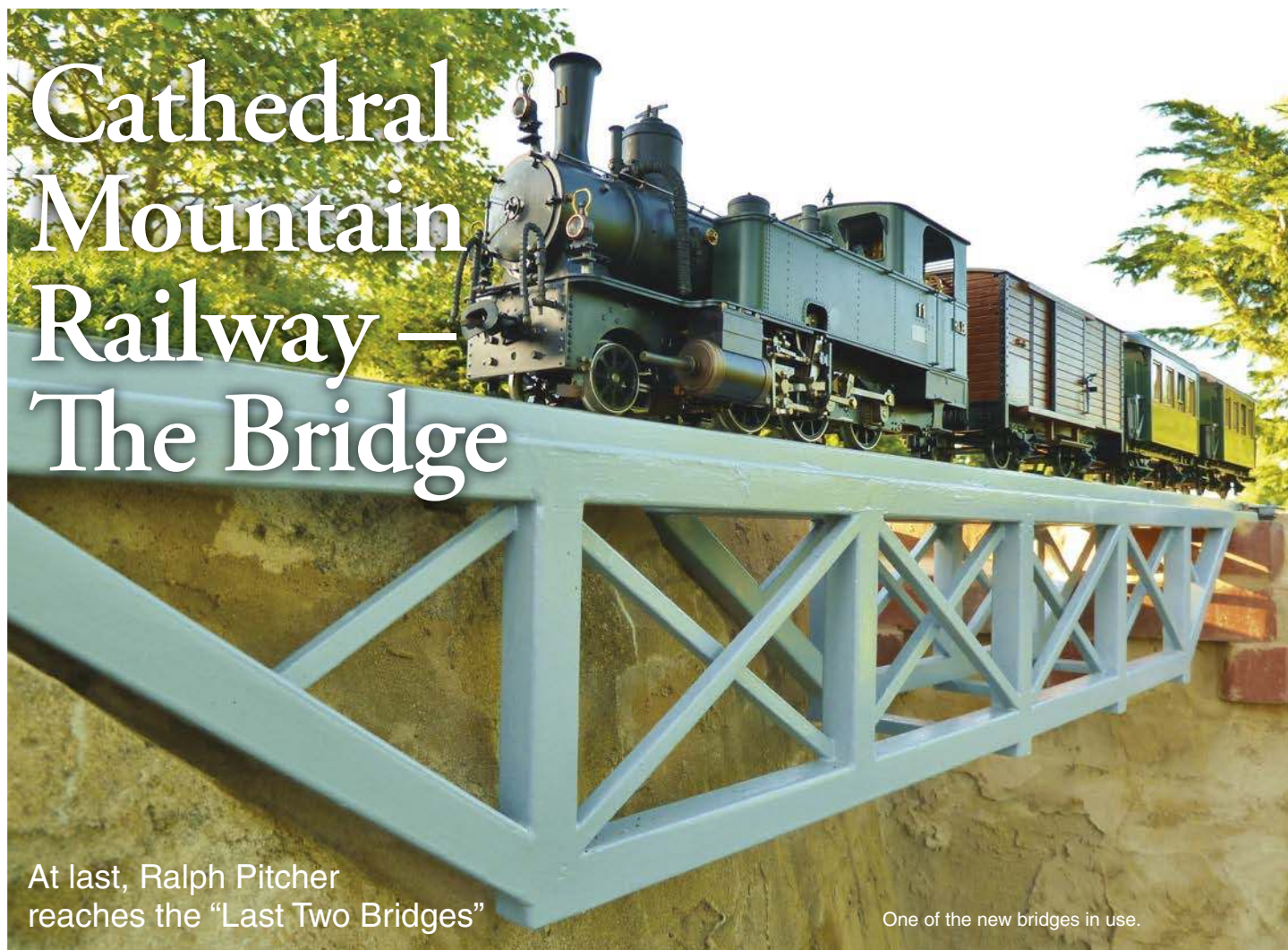
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Cathedral Mountain Railway – The Bridge



At last, Ralph Pitcher reaches the “Last Two Bridges”

One of the new bridges in use.

My previous article (**Garden Rail** December 2017) covered the design, construction and installation of the turntable on my Cathedral Mountain Railway. The final sentence mentioned that it was

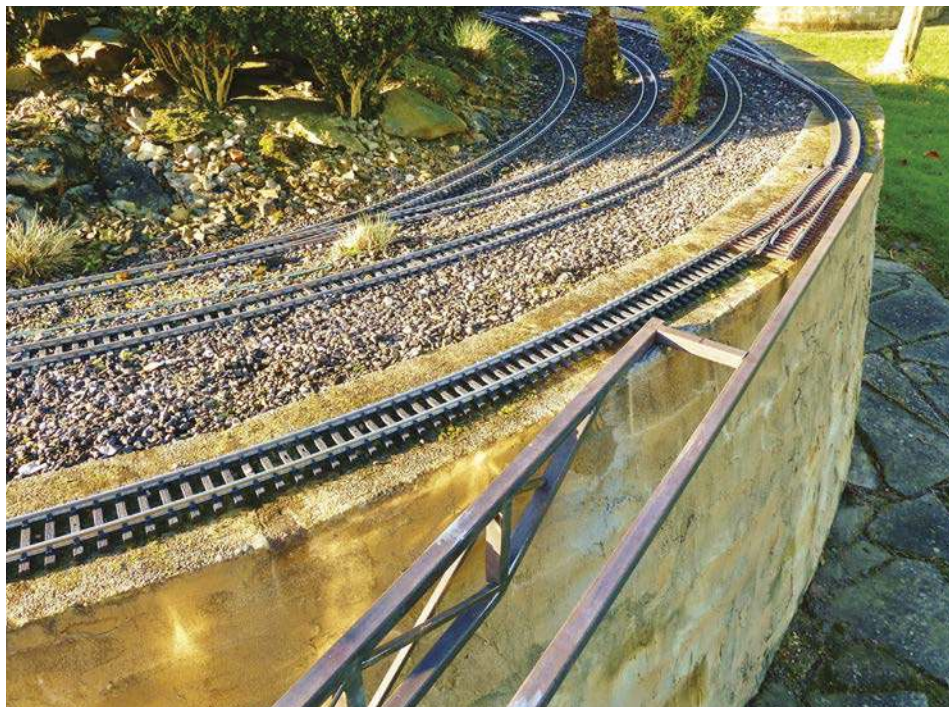
not really finished as there was still the matter of building and fitting the two bridges that would connect the turntable to the rest of the layout.

When designing the turntable bridge I decided on an inverted arch span design

because in only having to support the track it would be narrower and lighter. It would also be more stable with a lower centre of gravity. Thus I went for an inverted design. Another plus point was that the two link bridges would provide very accessible steaming bays with none of the bridge structure being above track level and obstructing engine access.

One major problem to overcome was the lack of room for supporting the end of the bridges where they joined the main layout. These bridge ends would have to be severely splayed in plan form unless I built out projecting abutments for much shorter square ended bridges. I decided on the first option which meant that each bridge had to be tailor made and would also look far more elegant than two more conventional ones that could be purchased and arrive in a box.

Starting with the longer bridge, which I decided needed a minimum width of 160mm, the outer side needed to span 188cm and the inner side 95cm. This



Test fitting the steel parts. You can see from this angle just how different the lengths of each side of the bridges need to be.

discrepancy in length ruled out having an inverted arch span design which would need each side to be exactly the same. The answer was to build them as inverted truss span bridges instead. They would need common length bridge bay sections that collectively would add up to the same length as their respective spans.

After much measuring and pondering, I decided that the longer outer face would be eight bays long and the inner face being only four bays long, all at 237mm long. It was not quite perfect, with the outer face being 16mm too long for its span. But an angle grinder, hammer and chisel would soon remove enough concrete blockwork to have the span long enough for the bridge to be a perfect fit.

CONSTRUCTION

Copying large elements of the turntable construction, it seemed sensible to use 20mm solid steel, square bar and 8mm square for the internal diagonals. These would all be arc welded together, as per my usual practice. More off-cuts of steel were obtained, some of the longer lengths needed to be welded together from many small pieces.

By laying the two main top longitudinal beams in place I was able to mark the standard length bay measurements for the inner and outer bridge sides as well as the standard length diagonal end bays. On the longer bridge's outer face this amounted to six rectangular cross strutted bays and two diagonal end sections all 237mm long. The inner face had only two rectangular cross strutted bays with two diagonal end sections, again all 237mm long. This meant that I did not need a cardboard template. All of the upright and horizontal cross bars would be the same length of 120 mm, giving a width and height of 160mm when welded to the top and bottom main longitudinal beams. This speeded up the cutting process as well as the assembly.

The main problem to be avoided was weld distortion. Therefore the sides were clamped down on top of a large universal steel beam and only initially tack welded together. Full length welds would later be carried out in a balanced fashion, back to back to avoid bending the steel bars.

Another feature that I copied from the turntable was having two lengths of 15mm /15mm /3mm angle steel that would retain the track in position.

Right: Being a farmer, Ralph has the odd RSJ hanging around to make an impromptu welding bench. Clamping the parts to this during assembly keeps the bridge side flat.



Below: Part fit needs to be reasonable, but not perfect. Slight gaps help weld penetration and any lumps can be cleaned away with an angle grinder.



Above: A completed bridge side.

Joining the two sides of the bridge together. The metal has been coated with weld-through primer to stop surface rust forming. If you work in a hot, dry climate then you probably won't need to do this, but this bridge is in England...



Setting the metalwork into a brick wall is easy if you are skilled with an angle grinder fitted with a suitable cutting disk. A little care produces a nice neat result.

These full length track supports were welded to the main 20mm square top horizontal cross bars. It seemed a good idea to extend them right up to the turntable where they would also provide some up and down adjustment so that both the track levels would exactly match each other.

The angle steel lengths were joined together at their turntable ends by a 3mm thick piece of square plate. By extending the plate out beyond the angle track supports, there was room to accept housings for slide bolts on either side. When engaged these rectangular section bolts would lock the turntable into a perfect alignment with the bridge. The slide bolts were lengths of old copper buzz bars taken from old electrical distribution boxes. The longer of the two bridges was now getting very heavy. After it was finished I duly weighed it - 31.5 kilos!

The second, slightly shorter bridge to be constructed was a similar story. It had shorter spans to be bridged and the length of the bay sections needed to be longer in order to fit into their respective outer and inner bridge spans. I went for a perfect fit on the inner bridge face, leaving me again to later on chisel out the concrete block work for the outer face which was slightly too long.



When your bridge weighs 31.5 kilos, moving it around needs careful consideration, or at least a strong wheelbarrow!



The finished bridge in position feeding the turntable.

INSTALLATION

The turntable end of the bridges would simply rest their main top beams on an engineering brick that was cemented in position at just the right height. The other ends of the bridges would be much more difficult to fit. Their staggered main beams would have to be notched down into the concrete block work. The 20mm square beam ends would have to be set completely flush, their top surfaces level with the concrete blocks on which sat the rest of the railway.

The trusty angle grinder with a diamond cutting disc soon made short work of the concrete blocks but great care had to be taken as the 20mm deep cuts had to extend right up to existing track work. Making this work even trickier, the longer bridge mated to the layout as a perfect tangent leaving almost no spare surface area on which to be supported. To achieve a level join meant many test fits. I must have lifted that 31.5 kilos of steel into approximate position around twenty

times before I was happy with the fit. I had just enough track to install on the bridges by straightening out my last few remaining curves. That just left some final brickwork and concrete infilling to be done and all was now nearly ready for the Darjeeling B to use the turntable for the first time.

THE TURNTABLE IN OPERATION

After some minor adjusting and tweaking of the track it was good to see the Darj run onto the turntable with no problems. I had a video camera mounted on a flat car filming the great event, although the camera wagon later derailed at a set of points that I had forgotten to check. The video can be seen on my Cathedral Mountain Railway YouTube site (the turntable at this stage had only one track connecting to it).

The turntable is served by its own passing loop which is 35 feet long. It runs on the outside of the outer running track and sits on a new concrete block



perimeter wall nine inches wide with the blocks laid flat. A previous article covers its construction and for want of a name it was called "turntable curve." It is a full 180 degree curve and has a set of points approximately 10 feet in from each end. From each of these points a track accesses the turntable via one of the new bridges which centre in onto the turntable at approximately 90 degrees to each other. Thus an engine can leave a short train between the turntable points (which are 14 feet apart) on the passing loop, reverse onto the turntable, be turned and then proceed forwards onto the far access track. After clearing the turntable points near the far end of the passing loop, it can then reverse up to its train again, this time at its other end and facing forwards.

I am sure that I have just made a simple operation sound very complicated. There are other turntable operational options which are available. A very long train can be left parked on the outer main running track which has 35 feet of track between the passing loop's points. The engine can be turned and return past its train via the turntable. If one is just running a typical 0-4-0 tank engine with no more

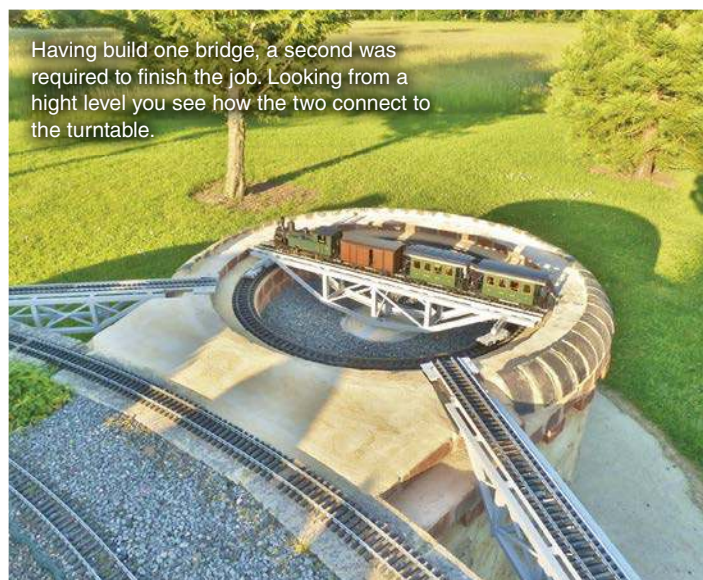
After all the brickwork and heavy steel engineering, this is the important part, making the two tracks line up perfectly. A pair of lock bolts secure the turntable to ensure smooth running.

than four wagons it is much simpler to run the whole train onto the turntable which is 4 feet and 8.5 inches long and reverse it all in one go. It is all very good practice in stopping a live steam engine at just the right place or just something else to do if the two main running lines are busy.

LAST THOUGHTS

The bridges as with all my other garden railway structures are very much coarse scale. There are no fine scale rivets to be seen but there are also no over-scale POP rivets that one often sees holding a typical garden railway bridge together.

Coarse scale is very practical to run, Code 332 set track is necessary otherwise the 6/8mm granite chip track ballast would overwhelm it. Fine ballast would not survive the frequent re-leveling needed because of the general



Having build one bridge, a second was required to finish the job. Looking from a high level you see how the two connect to the turntable.

light subsidence that the CMR suffers occasionally here and there. In addition I have over 120 tons of coarse granite chips, so rough and ready is the order of the day.

The bridges look fine from ten feet away and they work well with the turntable so I am happy with the result. My old Roundhouse Darj B has almost clocked up 200 outings on the CMR, without any serious incidents. Do check it out testing the turntable for the first time on YouTube: www.youtube.com/watch?v=5viR7QQvqQ Although rattling along at a manic speed the track never seems to catch her out unless I have forgotten to reset a set of points.

Will there be any more CMR extensions? The answer is a clear no as I was using Aristocraft stainless steel code 332 set track, and I will not be able to source any more. At least I did not run out of track as at that stage of the project it would have been very frustrating. It was a close run thing. But that does not stop me wondering about what coarse scale railway buildings can be welded together, perhaps a portal span engine shed built with 20mm square solid steel bar, hmm? ■

Editor's note: If you don't have the skill or equipment to weld a bridge together like Ralph, it's worth looking in to small engineering firms often found in the scruffier end of most towns, or even mobile welders who turn up in a van and repair cars on your drive.

To protect the metalwork from the elements, all the steel is heated with a propane torch to get any water out of the metal. While still warm, a coat of machinery paint from the HMG range is brushed all over to give a nice finish.



A Basic Engine Shed in 16mm Scale

“The engine crews at the Beeches were getting mutinous.”

Keen to quell mutiny among his engine crews, but short of space, Ray Bye resorted to scratchbuilding some cover for his engines.

The engine crews at the Beeches were getting mutinous. They were fed up with having to light up their engines at the crack of dawn in the rain and the freezing cold with no shelter for protection. An engine shed, that was what they required, but as usual the company was short of funds, so it would have to be a budget affair. Also due to the rather cramped site, no more than a narrow ledge really, there was no space to build a stone or brick engine shed, so it would have to be either a wooden or corrugated iron affair. Still, it would be better than nothing at all.

Having already built a stone water tower and a stone coaling stage from kits we started looking at kits for an engine shed, but as already stated the space available was rather cramped, and we had run out of garden to expand into.

All the kits of stone or brick built engine sheds we looked at were too big. The length was alright but they were all too wide and would have fouled the adjacent siding. Not to be deterred I wondered if a more modest wooden structure could be accommodated. After a quick measure up of our largest engine a card mock-up was made.

The dimensions I eventually settled on are:

- Length 400 mm
- Height to top of roof 290 mm
- Overall width 200 mm

The entrance is 160 mm wide by 190 mm high. This is big enough to accommodate the Accucraft ‘Caradoc’ and similar sized 0-4-0 locomotives quite comfortably.

The idea for the basic design came from the old carriage shed at Pendre on the Tallylyn Railway. This has a wooden framework with wooden cladding for the top half and wire mesh at the bottom.

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From this angle you can see
how confined the site is.

Below: Working hinges are
modified DIY store items

For the model I have built the framework from 10 mm square aluminium tube for the upright posts, connected with flat aluminium strip, 10 mm wide at top and bottom and 20 mm wide in the middle, all held together with pop rivets. The middle aluminium strip needs to be wider because it has to have fixed to it both the cladding at the top and the mesh at the bottom.

For the cladding at the top I used large 20 mm wide lollipop sticks, glued in place with exterior grade No-More-Nails. The cladding at the front and rear is glued to triangles of 6 mm ply, and these along with two more in the middle of the shed act as roof supports. A beam of 20 mm x 50 mm softwood runs the length of the roof between the two end

formers, the middle formers having a slot cut out to fit into this beam.

The roof is made from corrugated plastic sheet, fixed to triangular wooden supports which are glued to the top of the walls.

Following complaints from the engine crews about the air quality inside the engine shed whilst steam is being raised (the 'elf & safety at work act was mentioned!'), the Management have fitted a roof ventilator to help alleviate the problem. This was made simply from tinplate folded to shape and soldered up. The bottom part of the shed is 10 mm square wire mesh to represent chicken wire. This is fixed to the four aluminium uprights with pop rivets.

Doors have been made from lollipop



sticks again, this time the normal size but two layers thick. The long 'T' hinges are made from modified 1/2 inch brass butt hinges with the long part made from brass strip and soldered on. They are fixed to the door with small brass nuts and bolts.

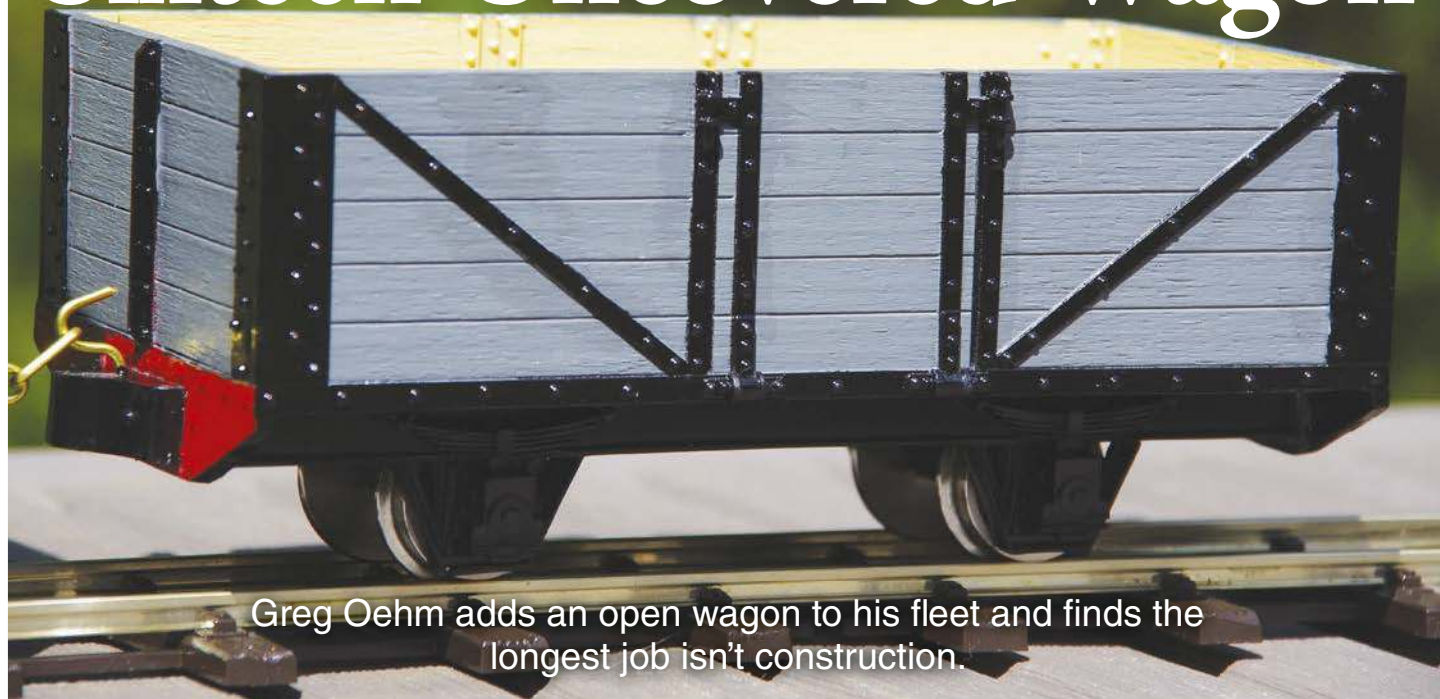
As a finishing touch and in response to requests from engine crews a lamp has been added outside the front of the shed, this being provided by Roundhouse Engineering. It has a white LED inside, powered by two AA batteries in a switched holder.

Finally the engine crews at The Beeches are happy, and all without too much damage to the Management's already somewhat overstretched budget! ■

The shed basks in the
sunshine. It's modest
dimensions allow
trains to pass on the
adjacent siding.



Constructing the Swift Sixteen Uncovered Wagon



Greg Oehm adds an open wagon to his fleet and finds the longest job isn't construction.

The advent of Swift Sixteen's Uncovered Wagon in their range was a welcome addition to the catalogue. I'm a great fan of having a variety of open wagons for my own railway, so I had been hoping this wagon would be produced for some time. There is something to be said for

a rag-tag collection of open wagons following your favourite locomotive. Having secured an example, here are my impressions of the kit.

FIRST IMPRESSIONS

My parcel arrived safely and securely after its journey to the Antipodes.

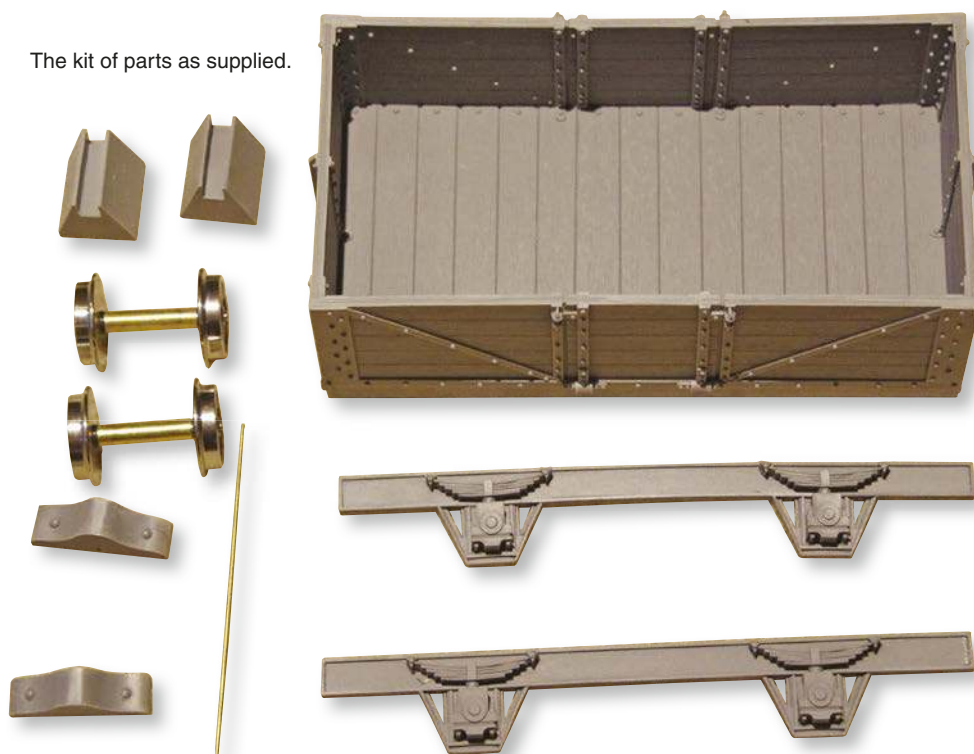
Nestling safely inside a cocoon of bubble-wrap, was the body, wheels, buffers and the option I-beam chassis rails I had ordered – the four W-irons also supplied as standard (being surplus to requirements) made their way into the bits box.

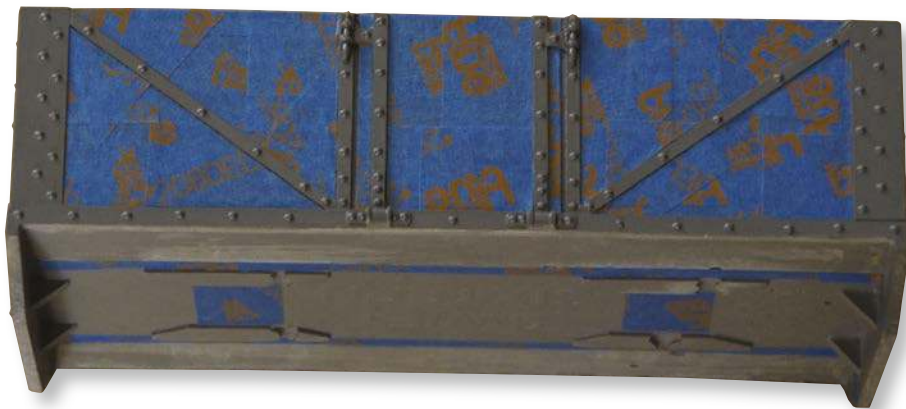
My second resin kit from Swift Sixteen, I was again impressed with the sharpness of the casting and the weight of the resin. These are no flimsy resin kits – they have real heft, with the completed wagon weighing in around 300g. These are easily comparable with the traditional Brandbright kits. The detail in the casting is also superb – the wood grain effect is so well done it actually looks more real than real wood (how do they do that?), and the strapping and hinge detail is very crisply cast.

I also noted my kit arrived with the old metal wheels, rather than the new glass-filled nylon wheels that are now being rolled out (ouch, bad pun!). I'm looking forward to seeing these new wheels, as they have me intrigued. However, I will have to wait for my next kit to see what these are like. The metal wheels are perfectly adequate, however – they are well turned and roll nicely.

As I looked over the parts, identifying which bit goes where, I was a little

The kit of parts as supplied.





Above: Masking in progress – the main coat of grey has been applied, now for the strapping to get a coat of black!

Looking closely, you can see the exceptional wood grain detail.

bothered to see what looked like solebars and undetailed parts of the headstocks, forming a quite uneven skirt at the base of the body. However, a reference to the instructions (always a good idea!) showed my concerns were groundless. These odd additions are part of the mould, and removal of these is the first step in the instructions.

Before removing them, I would recommend having a good look over the wagon to work out where is the best place to start. I began at one corner, making sure all the area to be removed was thoroughly scored, so that there was no likelihood of damage to the fine casting, and twisted the excess off. I must have picked correctly – once all the moulding excess was removed, I was gratified to see I had the makings of a very fine model indeed.

Whilst doing that, I also jumped ahead a step or two in the instructions and removed the 45mm shoulders cast into the base of the wagon, which would not be required, as I would build to 32mm and need to accommodate the optional I-beam underframes.

TO PAINT, OR NOT TO PAINT?

Swift Sixteen's claim that it is possible to build one of these kits in a night is no exaggeration. The only thing that will delay you is a decision from you about painting – do it now, or later? Your decision will be partly based on what livery you choose for your wagon. My own preference is for sand colour inside, medium grey outside, black strapping and underframes, and red for the headstocks. This meant it would be a long and complicated painting job for me, followed by lots of masking up in-between – making painting before assembly almost essential. This would add at least four days to the build, but would be time well spent.

I gave all parts a wash in warm soapy water to remove any mould release, followed by a good rinse and left them to dry. I then masked off all areas where one part would be attached to another, so that I would have maximum resin-to-resin bonding surfaces, without the presence of paint potentially weakening any joint.

The type of masking tape to use is

always a matter of personal choice. For many years, I used Tamiya low-tack modelling tape in various widths, but being more rurally located these days, finding a supplier is difficult. Fortunately, 3M market a low-tack (and medium tack, also useful) masking tape in widths of 19 mm or more, intended for household painting. Being able to find this readily at my "local" hardware supplier (an hour's round trip and a good 20 miles away!), I've resorted to using this, and have found it to be just as effective.

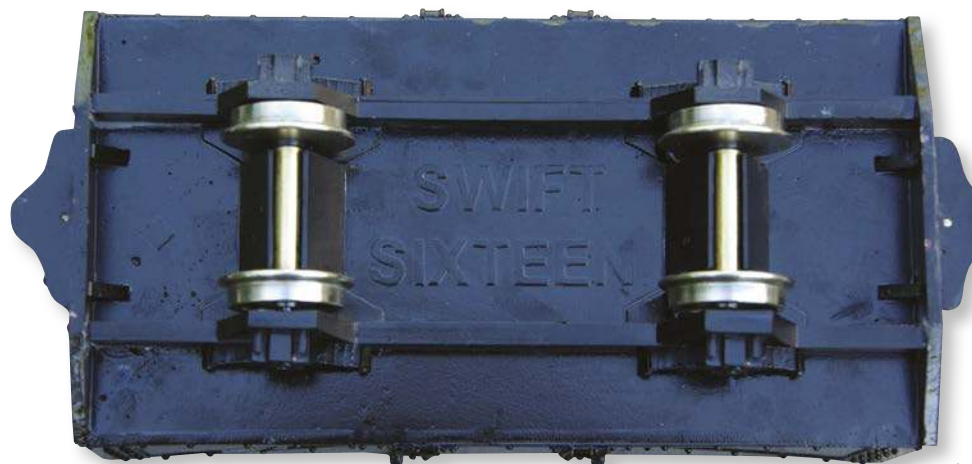
IT'S A STICK UP!

After a marathon painting session and sun-baking the paint in between to assist hardening, something possible even in the depths of a NSW Southern Highlands winter, using traditional rattle cans, I finally removed the multiple layers of masking. While a few areas needed touching up something I could do later with a fine brush (why does rattle can red paint never take?).

I sat down to finally assemble the wagon. It was the work of no more than an hour. Using cyano-acrylate in a handy bottle with brush applicator to avoid attaching myself to the wagon semi-permanently, I followed the instructions I had downloaded from Swift Sixteen's website and was shortly rewarded with complete wagon that looked pretty fantastic. Up to now, my five-plank Brandbright open wagon had been my favourite, but I think it has now been replaced!

FINAL IMPRESSIONS

A solid kit, with excellent casting. Easily and speedily constructed, so suitable for the beginner, but a challenge for those who want to improve the breed by adding more to the kit by careful and detailed painting. ■



Garden Rail Resource

Swift Sixteen

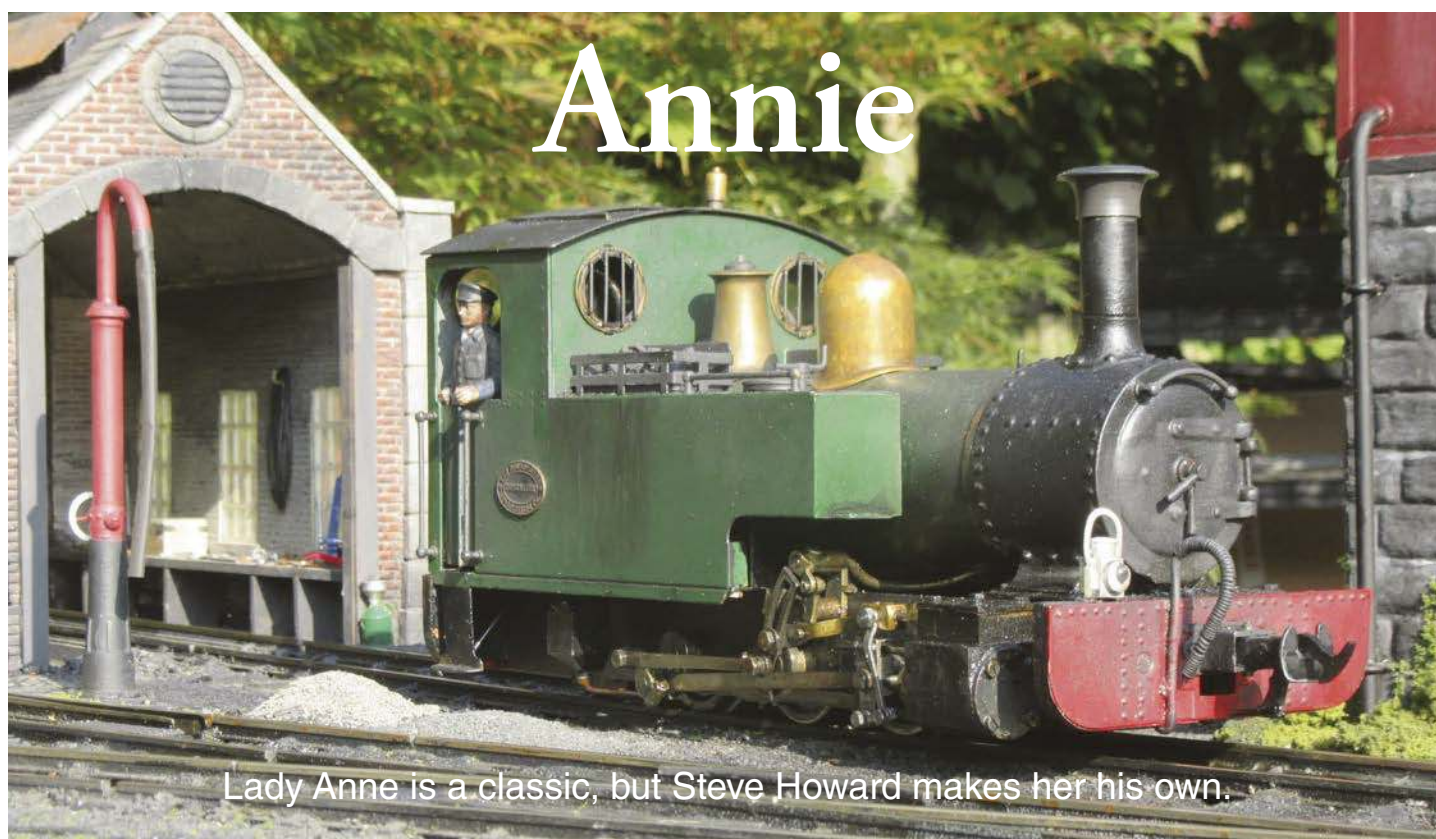
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Uncovered wagon: £40

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Underneath, the wagon is simple, but sturdy. The model can be built to 32 or 45mm gauge. A set of shoulders need to be removed from the resin parts for the narrower gauge.

Annie



Lady Anne is a classic, but Steve Howard makes her his own.

There are a number of detail additions and modifications that have been carried out to my 20 year old Roundhouse Lady Anne, mainly spread over the last couple of years. Despite its age, it is still one of the best performing locos and still has all its original parts, testament to the design and build quality of Roundhouse locos.

I find the appearance of Lady Anne to be too long for my Hambleton Valley exhibition layout so have made a couple of changes to its design.

The first was to remove the rear bunker, slightly surplus to requirements, given the coal bunkers mounted on the tank tops. The rear bunker is simply bolted on using the hand rail knobs to the rear of the cab doorway and so is very easy to remove. There is already a complete back sheet to the cab so no other work was required. Coal rails were fitted to the front spectacle plates.

The second modification was to shorten the chassis by removing 10mm from the front end. The smokebox was removed and separated from its

mounting plate followed by the front buffer beam along with the frame spacer immediately behind it. The frames were cut using a fine toothed junior hacksaw. I reduced the smokebox mounting plate by 10mm.

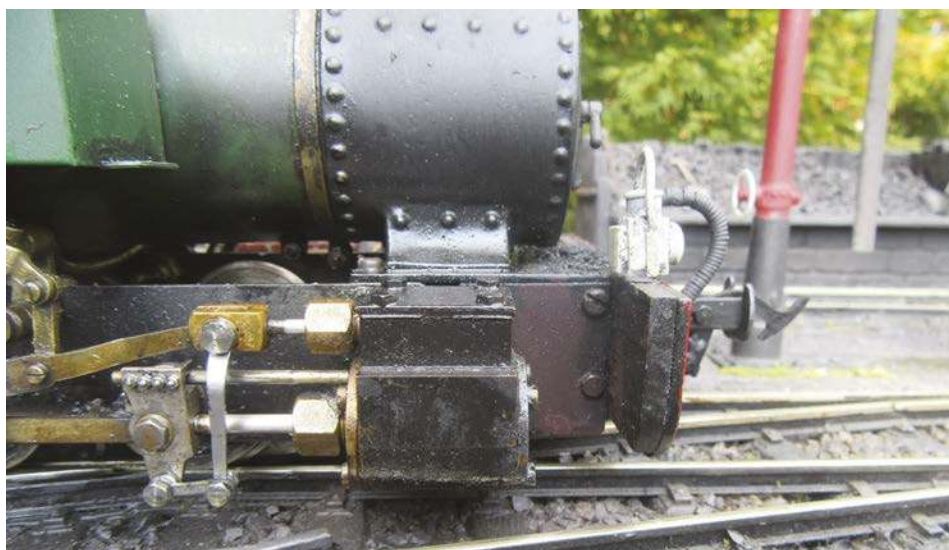
New frame spacer holes were drilled in the frames so that the frame spacer could be refitted behind the buffer beam. New right angled brackets were made from pieces of 10mm brass angle and secured to the rear of the buffer beam. Two new holes were drilled in the side frames to secure these angle brackets to the frame to re-affix the buffer beam.

The most significant enhancement to its performance was the fitting of an SSP Slomo device under the cab floor. SSP has now released a version of the Slomo specifically for the Lady Anne chassis that sits between the rear two axles, but at the time the loco was modified, this wasn't available. I was forced therefore to use the 0-4-0 version fitted under the cab floor by drilling new mounting holes in the side frames and extending the chain by a few links, kindly supplied to me by SSP.

Also fitted was a brass plate to the cab floor to prevent any of the R/C wiring from touching the Slomo



The first modification is removal of the rear bunker.



Front chassis shortened by 10mm. New crosshead, drop link etc. from Roundhouse. This is obviously a later addition as the metal is cleaner than the rest of the valve gear.

flywheel, as even the lightest pressure on the flywheel instantly stops the loco. These devices dramatically change the operating characteristics of the loco, improving the slow running, starting and stopping. It would not be possible to perform realistic shunting movements on my end to end layout without a Slomo, although I accept for a continuous circuit in the garden, the effect is slightly less critical, but I do hate to see videos of narrow gauge steam engines racing around at speeds befitting a mainline express at 100mph.

Because the Slomo was fitted under the cab floor, the radio control receiver had to be relocated within the cab. This was achieved by making a small shell with brackets mounted on the cab rear.

Not because it was faulty, but the original gas regulator valve was replaced with a new one as these now have a spring behind the knob and give better control of the gas flow than the original valves used, which used to creep back after letting go of the knob. As it is not possible to see the flame in these models, the gas has to be adjusted by sound and feel alone and in noisy exhibition halls this could be quite difficult. To aid in setting the gas as low as possible without turning it out, a pointer system was fitted to the gas control knob. A 1mm hole was drilled in the side of the brass adjusting knob opposite the grub screw and fitted with a small length of brass wire which was a tight push fit into the knob. Another piece of wire bent at approx 45 degrees

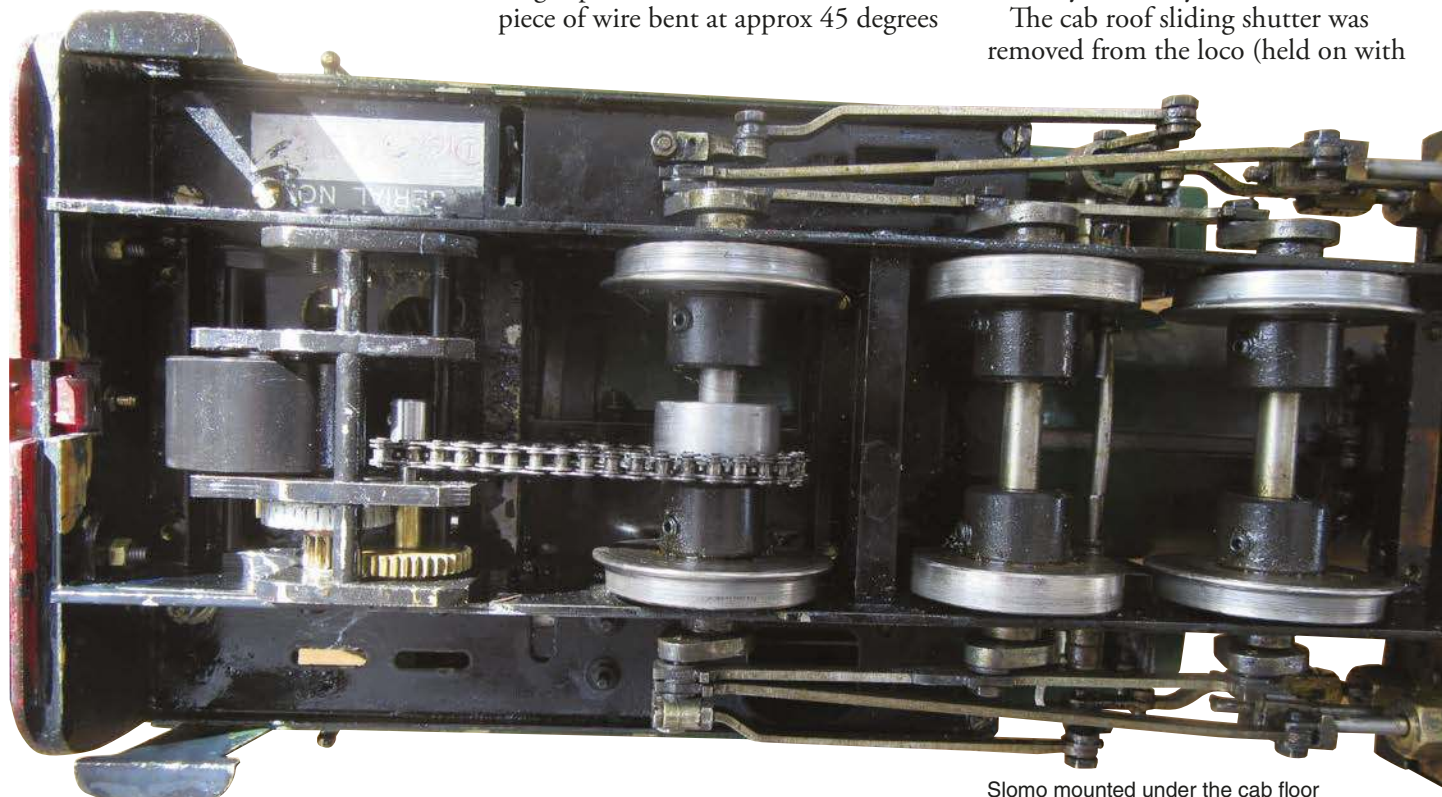
was soldered to the inside of the cab front and in the quiet of my shed, adjusted these to align at the lowest possible gas setting. On my layout, the loco spend a lot of time stationary of moving slowly over relatively short distances, so the gas needs to be as low as it will go and even at this setting the boiler maintains a full 40psi.

Next was the fitting of a Summerlands chuff pipe. In conjunction with the load created by the Slomo, a very noticeable and effective chuff is produced by the loco. Without it, the loco is almost silent in operation.

A cab door was fitted on the layout viewing side only and a cut down driver affixed to the inside. The door is a rectangle of brass fitted under the nuts holding the handrails and a wire was soldered down the centre line to represent the hinge. A countersunk screw was soldered to the inside to fix the cut down loco driver in position. The displacement lubricator is in the way on the other side of the cab.

New inner tank sides were made from brass sheet and soldered in place. The original model had no inner sides to the tanks, so viewed from above, the tank was very obviously not a tank.

The cab roof sliding shutter was removed from the loco (held on with



Slomo mounted under the cab floor



Left: Gas control valve with pointer

Modified sliding hatch on roof and also new inner tank sides are visible from above. Weathered safety valve bonnet and dome



self-adhesive pads) and the soldering tag for the aerial was removed. The assembly was glued back in place with epoxy resin, flush with the roof. The 2.4Ghz radio receiver does not require the use of this plate as an aerial as was the case for older 27Mhz systems. The roof assembly was then resprayed matt black.

Another standard Roundhouse enhancement was the safety valve bonnet. This and the dome were far too shiny for me, but as they have never been cleaned, they have aged and oxidised nicely over time to a more muted brass colour.

The cylinders covers were rather crude pieces of bent brass and were removed as they did little in my opinion to enhance the appearance of the cylinder and valve chest, which was subsequently painted matt black and left exposed. (For matt black, read dirty black, a very dark grey that looks more realistic as matt black is well, just too black!)

The buffer beams have had the

Roundhouse overlays fitted for better rivet detail although the countersunk fixing screws still need to be hidden. The buffer beams were backed with some 2mm thick strip wood as the beams otherwise looked too thin. Vacuum pipes were made from wire and affixed to front and rear buffer beams. A white metal loco lamp was affixed to the top of the front beam with a short piece of vertical wire and the lamp is easily removed.

White metal sandboxes were added to the frames under the cab and pieces of copper wire glued in place to feed the 'sand' to the track behind the last pair of driving wheels.

The couplings have been changed to a chopper type, one end only being fitted with a hook and with a soft iron wire attached for auto uncoupling on the layout using track magnets. There is no hook on the other end to make uncoupling much easier as the stock is never turned on the end to end layout arrangement.

A combination lever and drop link accessory option from Roundhouse was fitted to the motion. The bolt supplied for the connection to the valve rod is a slotted cheese-head screw, this was replaced with a steel hex headed bolt for a better appearance. (I do wish Roundhouse would stop using cheese-head screws everywhere)

As I like the well-used appearance of a steam engine, it has never cleaned in the 20 years I have owned it. The motion has taken on an oily brown colour, the smoke box and chimney were repainted matt dirty black and had very fine coal dust sprinkled on to the wet paint to represent ash blown out of the chimney.

A very fine spray of matt dirty black paint was also applied from the top and from a height of about a metre too give generally dirty well used appearance. I know some modellers are loathed to do this and worry that it affects the re-sale value. I am sure it does, but it does not bother me as the appearance I want is more important to me and I do not intend ever selling them, although my children might think otherwise in due course. There are also a number of traders who can respray locos back to a mint condition if necessary. ■



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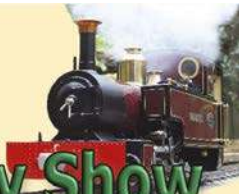
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The Ffestiniog Hearse Van



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A couple of issues ago
our Editor, the kind Mr
Parker, featured one of
our recent models.
The Ffestiniog
Railway's Hearse Van.
Fine! However he
also published my
puns. "It's a *dead*
good wagon." "A
heaven sent
opportunity." It turned
out that many of you

also have a warped sense of humour. It's not uncommon for
people to share their own "death jokes" with me at shows and
events. At least I'm in good company with my sick humour.

So then. It's a 16mm scale model (32mm or 45mm gauge) of the
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Made from birch plywood with brass finials - which look just like the
original's, it's available as a kit (£34.50) or as a finished model
 (£49.50) (if you don't want to add to your pile of unmade kits).

"Don't let the opportunity pass away."

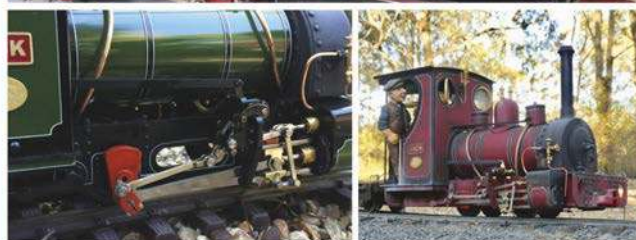
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John Perkin shows us his model of an unusual tramcar.

The Giant's Causeway Tramway, operated by the Giant's Causeway, Portrush and Bush Valley Railway & Tramway Company Ltd, was a pioneering 3 ft (914 mm) narrow gauge electric railway operating between Portrush and the Giant's Causeway on the coast of County Antrim, Northern Ireland. The line, 9 1/4 miles (14.9 km) long, was hailed at its opening as "the first long electric tramway in the world".

Power Car No. 2 and a trailer are at the Ulster Folk and Transport Museum, Cultra, Northern Ireland; and Power Car No. 9, as modelled, is in the National Transport Museum of Ireland, Howth, Eire.

As most of my modelling is now in Gauge 1 and G Scale, I decided my model would be to 1:20 scale running on 45mm gauge track.

The wheels were in stock and only required a simple unpowered chassis made with some spare nickel silver sheet from the spares box. The axle boxes from GRS were fitted to a sub frame fabricated from styrene sheet.

The base is ply and the sides, ends and dash are of 40thou styrene sheet.

Windows are marked out in pencil and cut out with a craft knife and filed to the correct rectangular shape. The unique body side detailing was cut from 30thou styrene sheet and the arch shapes marked out with a ruler, pencil and compass before carefully cutting out with a Swan & Morton No. 10A blade.

The roof base is of 80thou styrene sheet with strips of the same to position it above the body. Due to the complex roof structure careful modelling is required to capture the shape of the original design.

The off-set trolley pole base is a piece of brass tube fitted into a hole in

the centre of one side of the roof with impact adhesive.

Brass wire is used for the trolley pole with a nickel silver holder for the brass trolley wheel. The sprung base at the bottom of the trolley pole came from an earlier model and was modified slightly to more accurately follow the shape of the original. All these items were sprayed with Wilco's satin black. *(Editors note: Wilco is a UK supermarket/general store)*

The controllers are cut out of soft wood and shaped with a grinding wheel and belt sander. After spraying with Wilco Satin Black the controller top is hand painted with Humbrol Brass paint. The brake wheel, and controller handles are constructed with brass wire and tube. ■

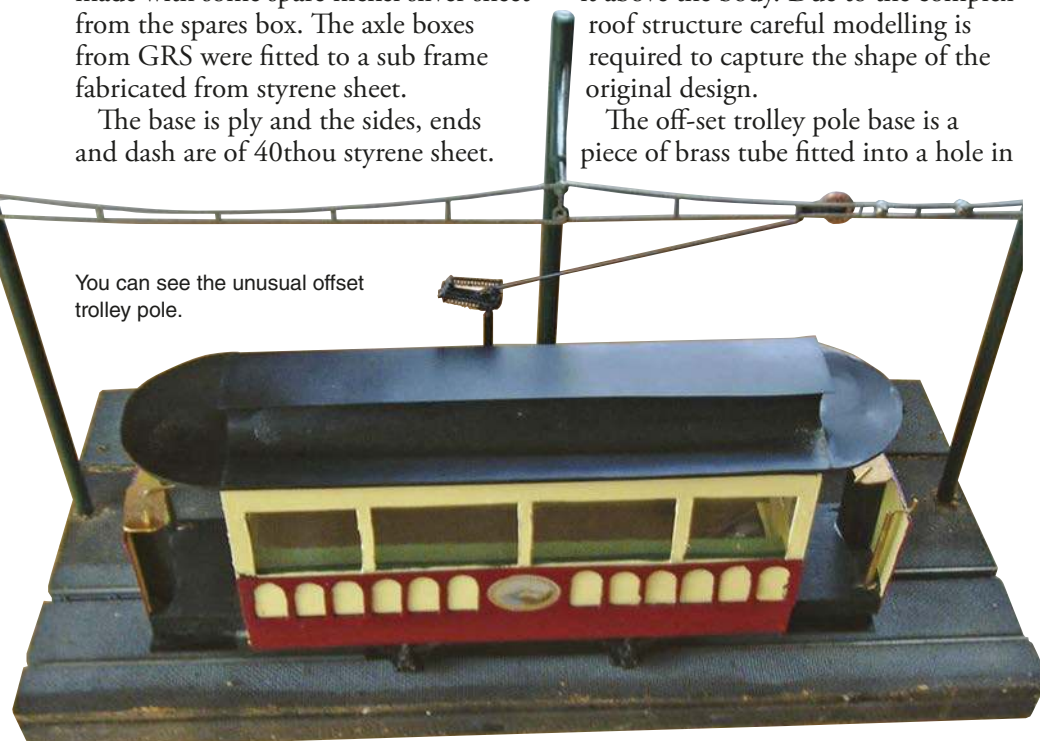
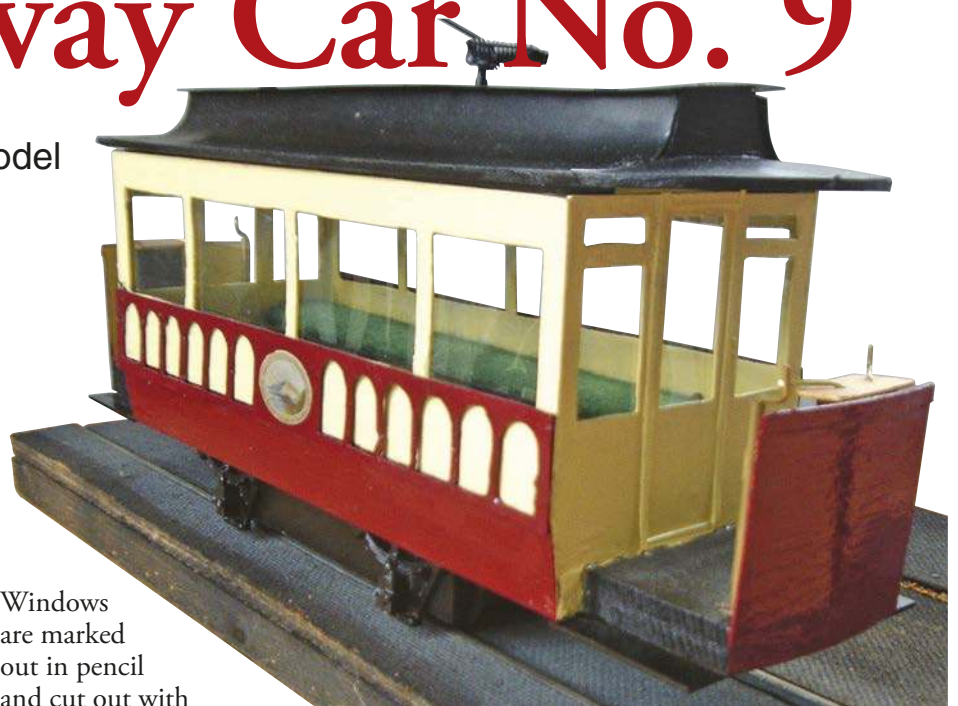
REFERENCES

IRRS No. 4 – The Giant's Causeway Tramway / Michael Pollard / IRRS 2000

Garden Rail Resource

Garden Railway Specialists (GRS)
6 Summerleys Rd, Princes Risborough
HP27 9DT
www.grsuk.com

Please mention **Garden Rail** when contacting suppliers.



You can see the unusual offset trolley pole.



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Water Water everywhere, but not for my engine?

If you want your steam locomotives to last, simply pouring any old water into the boiler won't do. Alan Macfarlane look at the options.

The great water question "what is good for my engine" is asked by many live steam people. That is any live steam model, railway, boat, stationary or road locomotive. The answer is, errr ummm.

To answer the question you need to ask yourself "Will this stuff do" or "My boilers should get the best". Which way do you think? For me I spent many hundreds or more pounds on a locomotive, I should spend a little to keep it running for a long time.

What water choices are there? It's all the same isn't it? As you will see they are not.

The choices are tap water, rain water and filtered rain water for free. Alternately you can purchase distilled water from somewhere. I found it difficult getting distilled water. Searching the web came up with a 5ltr for £4-35 +P&P at £8-95! There were places that sold battery water or water for steam irons which on checking was found to be deionized water (DI). Another type of water is reverse osmosis (RO) water. Make sure it is distilled and not anything else.

WHAT WATER SHOULD WE USE?

What are the issues with each? Tap and rain water contain impurities that when heated form a coating on all surfaces and eventually block valves and water gauges. The scale coating also forms an insulating covering and so stop heat transfer. The burner tube gets hotter than expected.

Distilled water has virtually no impurities and therefore is great for our boilers.

De-Ionized water, however is not what it seems, the better the quality of the Deionized water the faster it will leach out the zinc from brass. This dezincification removes the zinc from the water side and so causing possible



Alan's water maker unit after 2 ½ running time.

failure. Removal of the zinc leaves a porous, copper-rich structure that has little strength. Doing this on the inside of a pressure vessel, is not a good idea, is it! How can you tell it is happening? The white powdery substance or stains on the surface can indicate the start of it.

There are instances when a brass boiler fitting starts leaking the action of tightening caused the fitting to shear, even when small forces have been used. The fitting had been eaten away due to, you got it, Dezincification and using deionized water. As it works from the inside you cannot see the

damage, till it's too late. This is why it is recommended that bronze is used for boiler bushes as bronze contains negligible zinc.

Reverse osmosis water is known to leach out the minerals in copper and cause pin holes over time as our boilers have relatively thick walls it will take time. But why chance a problem?

New container "unused condition" out the box.





Tap water



Rain water



Filtered rain water

Of the four types of water, only distilled water shines out, but at a cost if you can get it.

After some humming and haring I bought a water still from a company called H2O Labs. I know I am in Scotland and a dram often crosses my lips but I don't want the Excise Men knocking at my door so it is used for the advertised use, making distilled water. I got one with a plastic jug it should take a little bit more workshop abuse, than a glass one, I hope.

At about £200 you get more than enough water for our steam plants. The stills price is less than that of one Gauge 1 coach, or about the same as a narrow gauge one. It is also the cost of about 3 wagons or 4 track points. So the perceived "vast cost" needs to be balanced against the other railway expenditure.

WHAT IS A WATER STILL AND HOW DOES IT MAKE GOOD WATER?

The unit I have makes 4 litres of distilled water. The still is filled with water, this is then heated up to boiling point by a 550W element, just like your electric kettle. The steam that comes up from the surface of the water is passed through a tube to a collector jug. This tube is cooled by a fan. This cooling turns the steam back into water. It also cools it down to a safe point so boiling water is not discharged into the collecting jug.

This cooling fan has another effect it heats your space. Great in the winter, in the summer, just open the window/door.

In use the outer stainless steel container gets just warm enough to feel. The whirr of the fan is as noticeable as a large fan on a computer. In a workshop or train storage area it makes no difference. In the kitchen just turn up the radio just a bit.

The unit takes 4 to 5 hrs to make the full 4 litres of distilled water. From the start it takes almost an hour before the water is seen dripping into the jug. The

first time I used the unit I did start to worry, but you get as close to the full 4 litres out from the batch.

THE RUNNING COSTS

Don't roll the eyes and think of having a kettle boiling for 4 hrs. The small 550W element is only 1/6th of the size of a kettle. The still uses 1/2 a unit of electricity in an hour. Mr Google told me the price of one unit was £0-03 to £0-04p so in the 5 hrs it used about 3 units at a cost of £0-09 to £0-12p for the 4 litres. Where can you get known good quality water for that price?

The unit is quite large being 375mm high and 250mm in diameter. The collecting jug is also large at 180mm diameter and 180 mm high without the handle.

Depending on where you live in the country or world, your water will be significantly different from mine in Fife. Fife is supposed to have good soft water. If your kettle gets scale or furred up then your water has a high level of solids in it and that is what you are putting into your boiler.

I did some tests to show what was in my water. The following water tests were done:-

- Test 1 my tap water,
- Test 2 rain water from a water butt,
- Test 3 filtered rain water from the same water butt.

The photos show what was left in the machine after producing only ONE batch of water.

Tap water was the "Best" leaving the least debris in the pot.

Rain water both filtered and straight left significantly more in the pot. With that I will continue to fill the pot direct from the tap.

As you can see it is surprising to think what is in the water.... When you look inside and see what's left, this would be coating the inside of your boiler.

The still runs with water at just over 100°C. In our boilers the temperature

is higher, the table below is a rough temperature to pressure guide (to the nearest 5°C)

PSI	0	15	30	45	60
°C	100	120	135	145	150

At the end of each run the unit was cleaned out. I try to do it as the unit stops. The residue will be easier to remove when wet as it is not baked on and dry. The unit does come with cleaning "chemicals" but I just use a wet cloth, although on one occasion a "Scotch bright" pad was used to get the heavy stuff removed. If this won't remove the dross you can run the unit with water and cleaner till it gets hot which soaks and boils it off. I have not needed to do this, yet.

The still is very easy to use and just works away on its own. At the end of the cycle it switches itself off. I put mine on in the workshop and let it just run. It only takes a couple of runs to fill my storage cans. I often run it a few times before any of my gatherings so there is enough for anyone who arrives.

Recap: The unit is easy to use and cost effective at making pure distilled water for our locomotives. It is, fill, switch on, then go and do other things. As big as a large kettle, cheaper at making water than a second class stamp. Doing a batch will run a locomotive for a long time. Initial cost may seem large but against our locos and other railway costs it is not. Having one as part of a group may be a great investment. It will take one more ponderable away from running our live steam models. ■

Garden Rail Resource

H2O Labs

Unit F, Rastrum Industrial Estate,
Harbour Road, Rye, East Sussex,
TN31 7TE
www.h2olabs.co.uk

Please mention **Garden Rail**
when contacting suppliers.

Isle of Man railcars

Mike Buttell builds a pair of the legendary ex-Donegal railway railcars, now living on the Isle of Man.



Regular readers of **Garden Rail** will have recently seen pictures of Andy Taylor's Isle of Man based Railway the "Little Angel" in the November 2018 issue. In the text accompanying he explained that he took over ownership of a lot of my former IOM stock when my own line was lifted around four years ago, and this stock included the set of two County Donegal Railcars that I built from scratch.

I have always had a great affection for these "Donegal Sisters", mostly because my father was one of the first to drive them on passenger duties when they arrived on the island in the early 1960's. He was one of the few steam drivers on the railway who had a road licence,

having passed a driving test in the army during WW2.

We have a copy of a letter sent to dad by JIC Boyd, no less, concerning the railcars, of which he had experience from visits to Ireland. Mr Boyd was by that time a shareholder in the IMR, and in the letter he suggested to my dad that he might volunteer to drive the new acquisitions, and offering a few tips on handling them. My father had charge of the cars during the winter timetable, reverting to steam in the spring and summer.

When I worked on the IMR, I also was able to drive the cars, albeit only on PW duties. Changing gear could be challenging, especially from first to

The pair of railcars prototypically marshalled with a G van between them.

second, if you didn't get it right setting out from Douglas then you would struggle to get the cars up the hill to Port Soderick.

Inspired by this experience, around 10 years ago, I decided to model the railcars.

Finding suitable plans was the first task, fortunately one of the Irish Narrow Gauge modellers websites provided a good set in 7mm scale so I was able to work from these.

I started by making a firm base for the passenger sections from 5mm ply, to this was added strips of softwood in J sections to achieve the tumblehome, then the sides were drawn on to 2mm ply and the windows cut out - the two cars each have different window arrangements.

Curved picture framing sections were used for the corners and the rear of the passenger sections were treated the same as the sides. To get the profile of the roofs started, picture framing section were again brought into play.

Using a combination of thin plywood and J-section mouldings to form the sides of the passenger sections.





The metal driving cabs are made from plastic on my model, again, using wooden mouldings to add shape. Sorry for the quality, it was taken many years ago!

Detail mouldings are added to the outside using plastic or wood strips.

Glazing was added using clear plastic sheet and seating made from surplus bath sealing strip. Most of the materials used came from a well known DIY store, the Isle of Man is not overrun by model shops!

The roof of the passenger sections was made from strips of balsa, sanded to shape and then sealed before painting.

The prototype cars have wooden bodies for the passenger sections and then metal sheeting for the driving cabs, the cabs are articulated from the main body and sway pleasingly in motion, I wanted to replicate that if I could, but used plastic sheet instead of metal for the driving cab sides and fronts. Picture framing was again used to start the roof profiles and balsa to form the main roof. The profiles of the cabs at the front were perhaps the most difficult parts to model, and I achieved a satisfactory result by using Milliput, sanded to shape when set.

The front radiator grills were brass etches, as were the vents each side. Vacuum pipes, wipers and headlights from the spares box.

When first built the cars ran on Bachmann Street Car 0-4-0 chassis, these were incredibly noisy (and totally unsuitable if I am honest) so at the earliest opportunity they were discarded in favour of power trucks from a cannibalised Bachmann 0-4-0+0-4-0 Centre cab loco, bought from Hattons in Liverpool during a day trip on the ferry, and carried around the city for the rest of the day.

I had a wish to run the cars by r/c, so the motor of one of the power trucks was removed, and radio gear fitted into an Accucraft W/L covered van for me by Neil Hay, this van was subsequently altered by having the plastic van body removed and an IOM G van body



built on to the chassis. During their working lives on the IMR, the Railcars went everywhere together back to back, sometimes with a covered van in between to carry what remains goods traffic there was, so this arrangement for the model was quite prototypical.

The cars were painted red with a cream stripe, the first version of the Livery was a little too bright, so I quickly changed it to a darker shade. Railway crest transfers came from DJB Engineering.

I really enjoyed making the Railcars, I started out with the intention of capturing at least their spirit and general look, and was pleased with the results.

Whilst I miss seeing them trundle

around our garden now, I am delighted that they have found such a good home on the Little Angel and that they continue to bring pleasure.

For completeness, the real Railcars are still in existence on the Isle of Man, they were taken out of use in the 1990's for a complete rebuild, but the project ran over budget and the plug was pulled on further spending to complete the job. They remain an emotive subject, it would be nice to see the job completed as far as my personal opinion is concerned, but this is unlikely to happen any time soon. They remain in safe storage though should the time ever come and finance be available to complete the restoration. ■



The prototype stored in the Douglas carriage shed in 1993. The shed is now long gone under the bus depot and the railcar is partially rebuilt.

From the Works

Trade information on new products for the garden railway modeller...
If you are a trader with any new product, then contact phil.parker@warnersgroup.co.uk
Please mention **Garden Rail** when contacting suppliers

IP ENGINEERING

16mm scale Industrial diesel locomotive kits

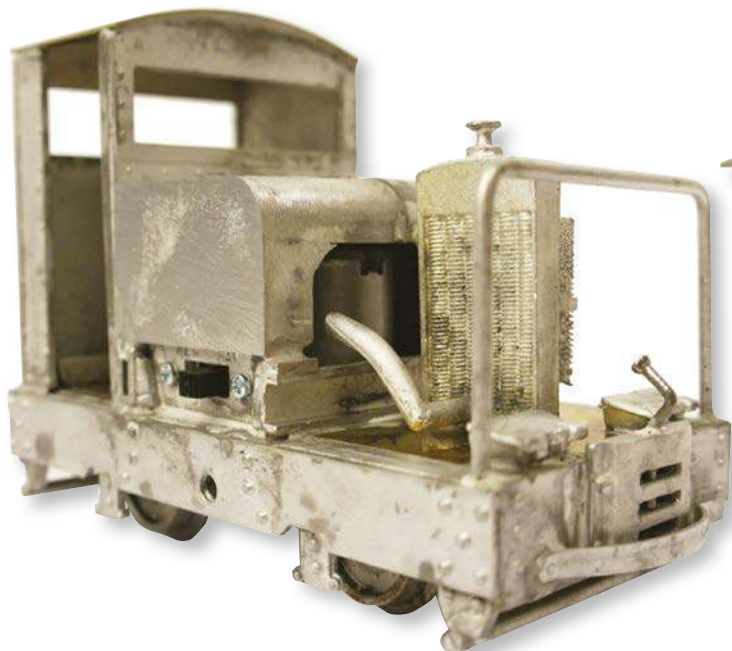
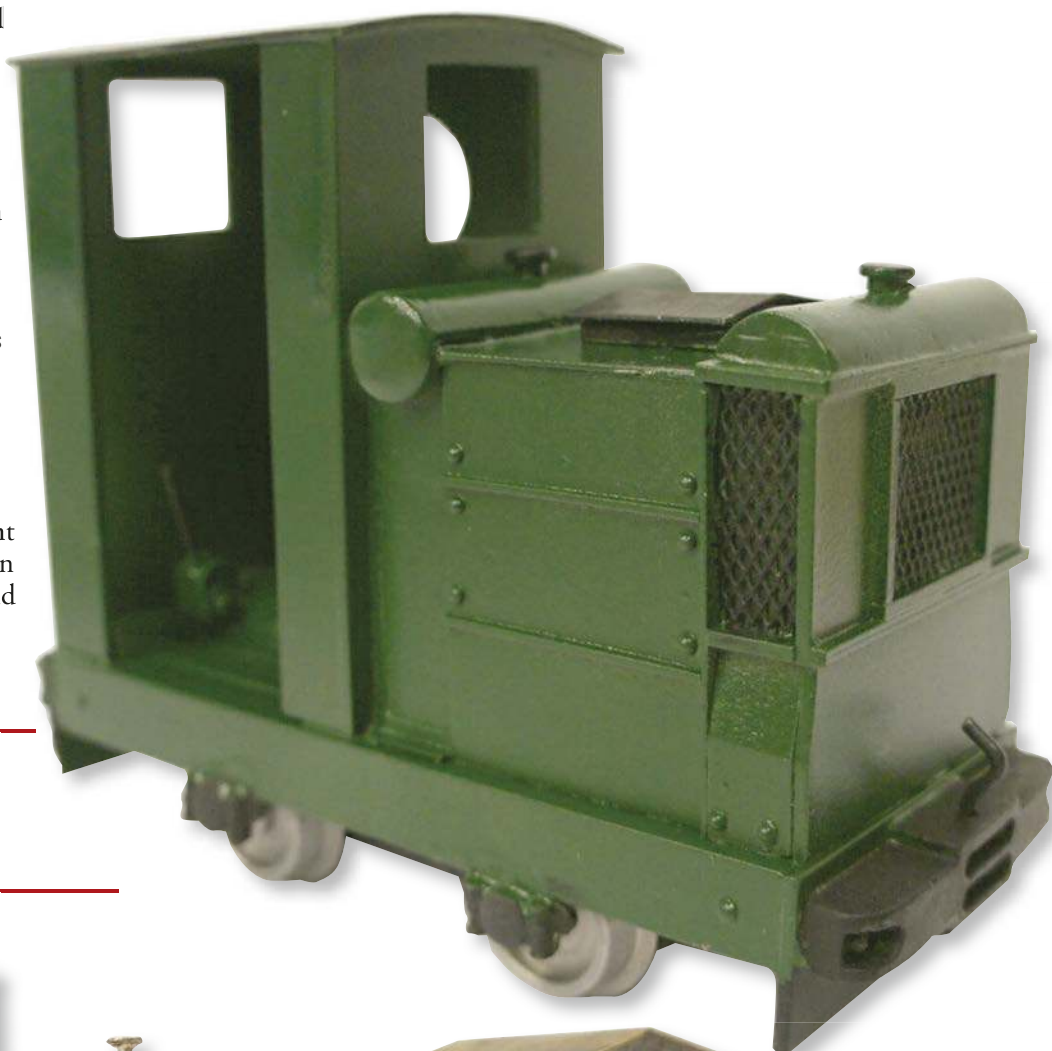
A trio of new loco kits from IP Engineering. Each is produced in brass and cast whitmetal, so there will be plenty of weight to keep them on track. The chassis is based on an easy to assemble 3D printed ABS unit and fitted with heavy duty gears. All kits are supplied complete apart from glue, solder and paint.

Both 20hp Simplexes are based on Leighton Buzzard Railway prototypes, complete with the safety bar on the front for the drivers mate to hang on to. They are available in 32 and 45mm gauges.

All kits price: £100 +£10 P&P

IP Engineering

Carousell Spilsby Road, New Leake, Lincs, PE22 8JT
www.ipengineering.co.uk



GARDEN RAILWAYS LIMITED

Water level gauge

Regner have been busy retooling many of their parts and accessories, but this must be one of the most welcome.

With the new water level gauge there's no more stuffing ptfе between the gauge glass and the top and bottom nuts to create a seal. They are now using O rings.

Whilst many Regner owners have managed to fit O rings in the older 4mm fitting, the top and bottom nuts on the new 6mm fitting have a groove made for them. The glass itself has a larger outside diameter of 6mm, with

a wall thickness of 0.7 giving an inside diameter of 4.6mm. This extra inner diameter means the gauge is easier to read and is less likely to give a false reading when using a Regner water top up system.

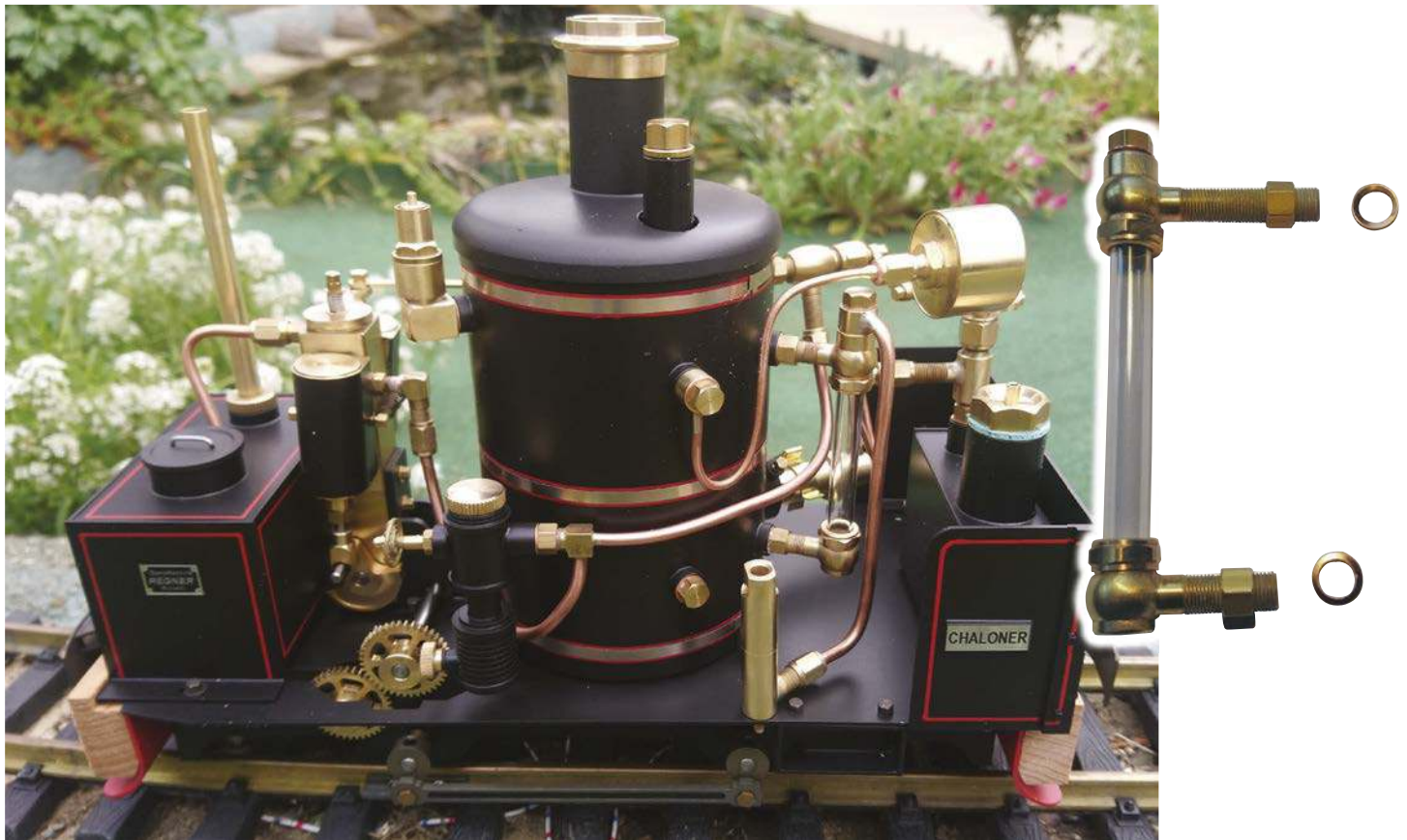
The gauge has the usual M5x0.5 plug on the top, which is removeable ready for the banjo fitting of the top up system 20235 or the 20236 top up valve. Regner have always recommended this way of topping up, the theory is that the water cleans the gauge glass and is directed into the boiler under the burner. So if it's done little and often there is minimal loss of pressure.

Designed to fit all the current Easy Line locomotives Lumber Jack, Chaloner and Vincent with an M5x0.5 thread, the new water level gauge will also fit recently deleted locomotives Konrad and Willi. There is also a M6x0.75 threaded version for their marine and stationary boilers.

Price: £27.00

Garden Railways Limited

3 Plaw Hatch Close, Bishop's Stortford, Hertfordshire, CM23 5BL
www.gardenrailways.co.uk



AUTO COLOURS

Primers and special paint mixing service

Auto Colours from Rhyl have a new range of primers which, although aimed at the auto industry, will be of interest to modellers looking to paint metal models.

In addition, they can supply aerosol cans with paint mixed to your specification.

Monofil Etch

Excellent adhesion to iron, steel, aluminium + zinc ● Fast drying ● Suitable for water based, 1K + 2K paints ● Easy to sand ● Light grey



Monofil Rapid Build

High build ● Self etching ● Fast drying ● Excellent adhesion to iron, steel, aluminium + zinc ● Suitable for water based, 1K + 2K paints ● Light grey, dark grey, black, white, beige

Monofil X-Build

Extra high build ● Self etching ● Fast drying ● Excellent adhesion to iron, steel, aluminium + zinc ● Suitable for water based, 1K + 2K paints ● Light grey

Monofil Adhesion

Excellent adhesion to metal including



stainless steel, chrome, zinc + galvanized metal ● Excellent adhesion to most common plastics ● Single coat application ● No sanding needed ● Fast drying ● Clear

Prices

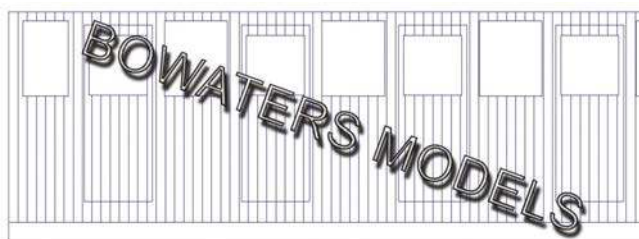
Primer: £8.95 + VAT

Paint: £12.00 +VAT (Mixed to your specification)

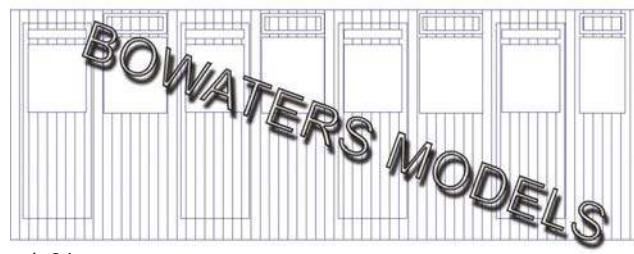
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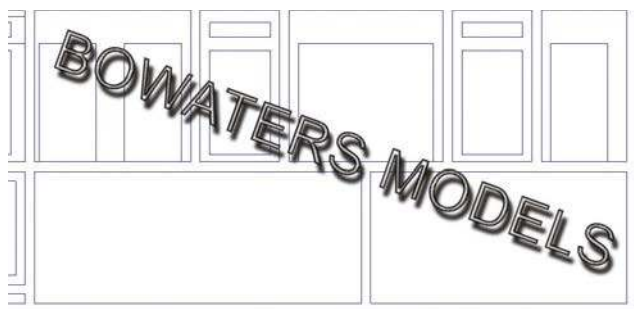




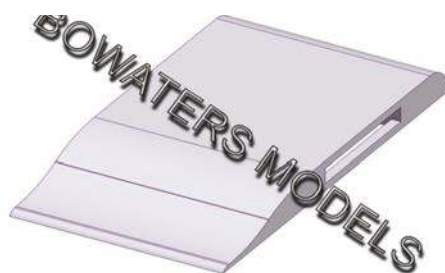
Coach 23



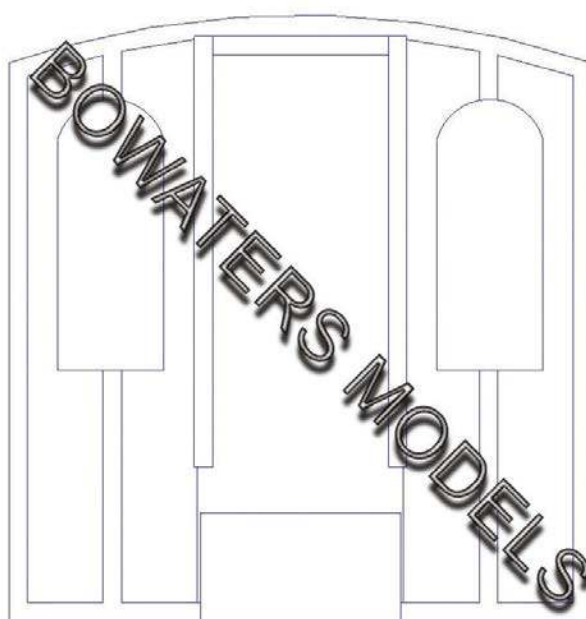
Coach 24



Van 4



FR Van Duckett



Van 5

BOWATERS MODELS

16mm scale Ffestiniog coaches

From Bowaters Models: As things progress, things start to grow, and Bowaters Models is no different! We've starting to look beyond our current range and starting to look at other Prototypes. As such, we're starting work on the next range to follow on from our Ffestiniog, Chattenden & Upnor, Sandy River, Sittingbourne and Welsh Highland Ranges.

As such, we're pleased to announce the reveal of our 2019 range covering Ffestiniog and Welsh Highland Railway Heritage Era Coaches in 16mm scale! Our initial release covers 5 different coaches. These items will fit in perfectly with any Ffestiniog and Welsh Highland Railway engine that has been produced

both to date and in the future. The initial Range consists of the following items:

- BMV-000 Ffestiniog and Welsh Highland Railway Multi-pack (x1 BMV-001, x1 BMV-002 x1 BMV-004 and x1 BMV-005)
- BMV-001 Ffestiniog Railway Coach 15/16BMV-002 Ffestiniog Railway Coach 23
- BMV-003 Welsh Highland Railway Coach 24
- BMV-004 Ffestiniog Railway Van 4
- BMV-005 Ffestiniog Railway Van 5

These kits are designed to operate on both 32mm and 45mm gauge track while retaining scale sizing and should look great on your garden railway/railroad. These are scale kits coming

complete with bogies in the gauge of your choice (32mm or 45mm) and Accucraft couplings.

All kits include postage to mainland UK only with shipping to other countries being at cost.

Please note, these are sold as advanced scratch aids and will require some details to complete them although they are designed to be run as is for those who wish to do so.

The images show the current CAD of four of our kits and don't represent the final product.

The range will be released during 2019.

Bowaters Models

www.bowatersmodels.co.uk

TRENARREN MODELS

16mm scale bucket and shovel

Recently released by Trenarren Models, who specialise in scenic detailing for 16mm Scale Model Railways, are these two items, both are cast in brass for strength and durability.

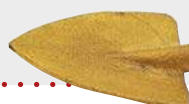


PW68 - Loco Bucket - £4.95

Brass casting, with handle, so safe to use on live steam locomotives.

PW99 - Cornish Shovel - £3.95

Brass cast and authentically shaped shovel, commonly used on railways for coal or ballast so ideal



to add a touch of authenticity to a lineside scene.

Trenarren Models

2 Brynglas Walk, Tywyn, Gwynedd, LL36 0BB

www.trenarrenmodelsonline.co.uk

ASH MODELS

16mm scale rolling stock kits

With the success of their gauge 1 kits, Ash Models have decided to do some free lance wagons and coaches which are now available.

Currently there 11 kits available, all kits are dual gauge (45-32mm) and come with wheels, axles and couplers.

As standard the axles are set for 45mm but for 32mm you fit them on the inside sole bars.

Kits available:

- 3 plank wagon with 4 crate load - £30
- Open Sheep wagon - £20
- Machinery Wagon - £35
- Single plank open wagon with container load - £30
- Brake Van - £30
- Goods Van with opening doors - £30
- Open Coach - £30
- 2nd/3rd Coach - £30
- Cattle Wagon - £30
- 3rd Coach - £30
- 1st class luggage - £30

Postage within the UK is £2.95 for the first kit and an additional £1.00 per kit to a maximum of £6.95

Overseas orders will be sent at cost.

Ash Models

Barrow Farm, Rode Hill, Rode,
England BA11 6PY
www.ashmodel.co.uk

The axles needed to be shortened by a few millimetres. These run in holes in the MDF with no bearings, if your model will run a lot, I'd suggest putting in some brass tube or even proper bearings. There is a little slop allowed which will take care of minor track irregularities.

Ash Models supplied **Garden Rail** with one of the first 2nd/3rd Class coach kits produced so we could perform a quick review.



For a small model, there are plenty of parts. Most are laser-cut in 3mm thick MDF apart from the roof and seats, which are 2mm. 28mm diameter glass-filled nylon wheels and couplings are included plus 3mm diameter steel axles.

All the parts slot together well, you can test-assemble the model without glue. Using Deluxe Materials Superphatic glue, I had the model together in under an hour



Finished dimensions are 150mm over the ends (186mm over couplings), 86mm wide and 120mm high. It could probably benefit from a little extra weight as at 217g, it's a little light.

THE AIRBRUSH COMPANY

Lifecolor Quick Flash Shadowing paint set

Ideal for large scale figures, this set uses something called adjustable Green Chemistry pigments technology to allow you to obtain light and shading effects on every scale model incarnate.

This set includes:

- LPW 31 Ochre
- LPW 32 Light Red
- LPW 33 Red Umber
- LPW 34 Green Shadow
- LPW 35 Grey Shadow

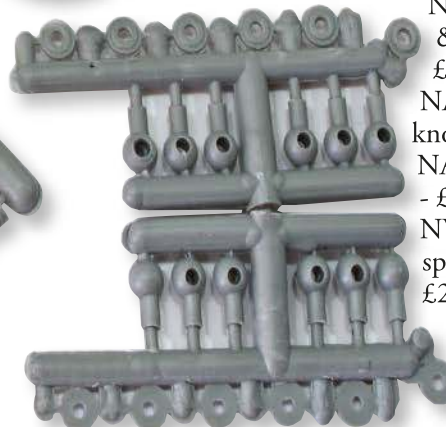
RE Remover

Price £17.99



The Airbrush Company Ltd

79 Marlborough Road (East), Lancing
Business Park, Lancing, West Sussex
BN15 8UF www.airbrushes.com



CAMBRIAN MODEL RAIL

16mm detail parts

The Editor has been planning a few upgrade projects for future issues of Garden Rail and bought in some mouldings from Cambrian Model Rail. Although not new, we thought readers might be interested on taking a quick look as these are just the sort of useful components scratchbuilders will want to stock up on.

All are produced in pale grey plastic with only the tiniest amount of flash to clean away.

NA2 – Wagon Axleguards - £1.50

NA3 – Doorhandles
& Dummy Hinges -
£2.30

NA13 – Handrail
knobs - £2.00

NA24 – 2 Diesel horns
- £1.30

NW3 – 24mm curly
spoke wheels (4) -
£2.50

Cambrian Model Rail

PO Box 85,

Greenhithe, DA10 9DN

www.cambrianmodelrail.co.uk

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Letters are welcomed on any aspect of large scale railway modelling. Please e-mail the Editor: phil.parker@warnersgroup.co.uk or post to The Editor, **Garden Rail Magazine**, Warners Group Publications, West Street, Bourne, Lincolnshire, PE10 9PH

SMALL STATIONS

To add to the splendid selection of Isle of Man small station views in *Garden Rail* for November here are two photos I took of the Welshpool and Llanfair at Sylfaen.

One is of the freshly painted shelter on the full size railway taken in 2015 while the other is the model on my 45mm gauge back garden Welshpool and Llanfair.



The model is Pendle Valley Workshops' corrugated station building kit PVW048 which I bought on a visit to Carnforth in 2013 and built and painted before I saw the prototype. By some miracle I got the colour scheme right.

The shelter in Wales has lost its paint shine since, but the model only goes in the garden in Worthing for operating sessions. I have a policy of reducing the number of portable scenic items I need to carry out and back in each time so the passenger and dog are attached to

an aluminium sheet which is mounted on a brass block (inside the shelter) and swings in and out of the shelter through the doorway rotating on a vertical axis on a rod running in two brackets mounted inside the shelter on the rear of the front wall. On placing on the station platform a flick of the wrist causes the passenger and dog to rotate out of or into the shelter, into for safe transport and storage.

Julian James



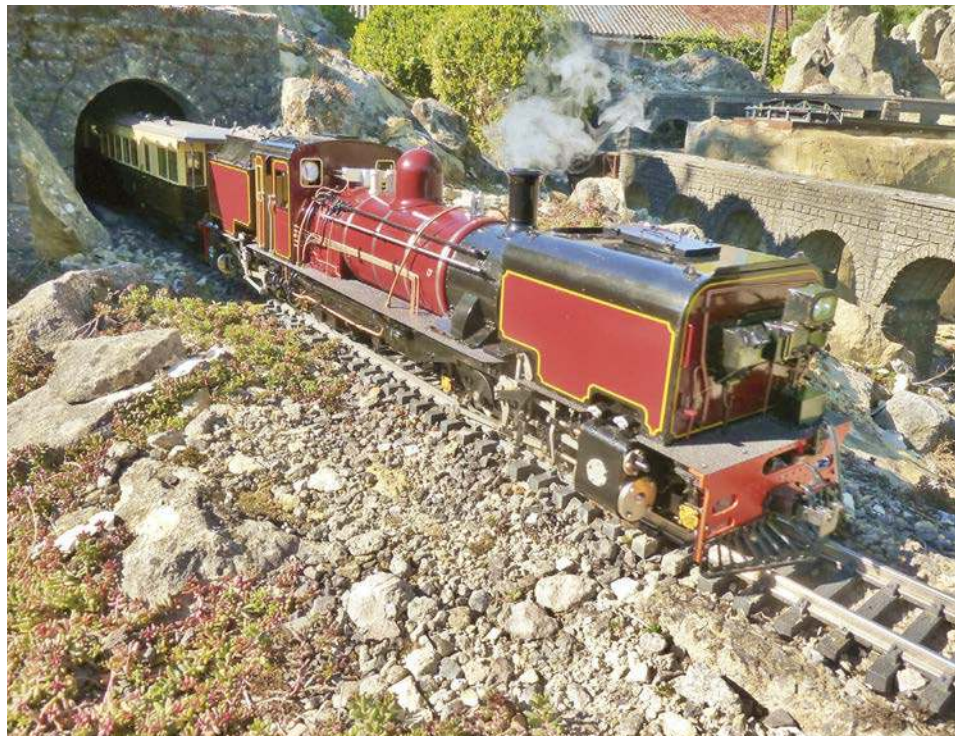
MORE GARRATTS

I had an email from Steve Jackson jokingly asking why I hadn't mentioned in my article last month, the need for using one of his Superior Water Top Up bottles. Of course with the vast amounts of water that need to be pumped, they are a vital piece of necessary equipment.

I also forgot to mention about the huge amount of gas that Garratts get through, especially the NGG16 with its much larger cylinders. Never mind, it's not a perfect world and one can't remember everything especially at my age!

I've sent a photo of Andy Field's very small Garratt running at Nick Trudgian's railway. It runs incredibly well for with a long endurance plus my favourite photo of the NGG16.

Ralph Pitcher



DIARY DATES

Date: 18th to 20th January 2019
Event: London Model Engineering Exhibition
Venue: Great Hall, Alexandra Palace, London, N22 7AY
Organiser: Meridienne Exhibitions
Web: www.londonmodelengineering.co.uk
Times: 10am – 5pm

Date: Saturday 27th January 2019
Event: G Scale Kent Winter Meet
Venue: Teynham Village Hall, Belle Friday Close, Teynham, Sittingbourne, Kent ME9 9TU
Organiser: G Scale Society Kent Group
Web: www.gscalekent.co.uk
Contact: Roger Allen - roger.allen1@btinternet.com
Times: 11 am to 4 pm
Admission: Adults £2.50, children £1.00
Exhibitors: Large scale layouts in 45mm and 32mm, including live steam, Trade and Sales stands
Additional Info: Car park, light refreshments, disabled access. The venue is approx 400m from the A2. Nearest station is Teynham

Date: Saturday 9th February 2019
Venue: St Mary's Church Hall, Hobs Moat, Solihull, West Midlands. B92 8PN
Organiser: G Scale Society, West Midlands group
Contact: Mel 01299 403548
Times: 10.00 - 16.00
Admission: Adults £3.00, Children (5 to 16) £1.00
Exhibitors: G scale indoors plus guest layouts in other scales over two halls. Trade support
Additional Info: Refreshments available, free parking

Date: 16th and 17th March 2019
Event: Midlands Garden Rail Show
Venue: Warwickshire Events Centre, Fosse Way, Leamington Spa, CV31 1XN
Organiser: Meridienne Exhibitions
Web: www.midlandsgardenrailshow.co.uk
Times: 10am – 4.00pm
Prices: Adult £9, Senior £8, Child £4
Exhibitors: Full trade support and layouts. See website for details.

Date: Wednesday 27th March
Event: Spring Twilight Running
Venue: Butterley Garden Railway, Butterley Station, Ripley DE5 3QZ
Organiser: Butterley Garden Railway Association
Additional Info: Starts in mid-afternoon. The legendary Fish & Chip Ordering Service will be in operation.

Date: 6th April 2019
Event: National Garden Railway Show
Venue: Peterborough Arena, East of England Showground, Peterborough PE2 6XE
Organiser: 16mm Association
Web: www.nationalgardenrailwayshow.org.uk
Times: 10am – 5pm
Exhibitors: See website for full details.

Date: 4th & 5th May
Event: Vintage and Oscillator Weekend
Venue: Butterley Garden Railway, Butterley Station, Ripley DE5 3QZ
Organiser: Butterley Garden Railway Association

Date: 8th & 9th June 2019
Event: Guildford Garden Railway Show 2019
Venue: Stoke Park, London Road, Guildford GU1 1TU
Organiser: Guildford Model Engineering Society (GMES)
Web: www.gmes.org.uk
Exhibitors: See website for full details

SUBMISSION NOTES

Garden Rail welcomes articles submitted via posted disc, e-mail, Dropbox (or other large file sending system on-line). Please ensure that your name, e-mail address, telephone number and postal address for payment on publication are included. Send to phil.parker@warnersgroup.co.uk or to the contact address on the Contents page.

Articles should be submitted in MS Word or other word processing format. Please do not use fancy formatting or embed photos in the piece, these should be sent separately at the highest resolution possible and in JPEG format. Printed photos of a historic nature will be accepted. Captions for all photos should be included as part of the submission. You must own copyright to any material submitted.



Andy Field's very small Garratt

FEMALE CREWS

On the face of it this is a simple query but one which my research has so far failed to answer (which may be a comment on the standard of my research).

I am trying to find a 16mm scale fully painted and finished female driver for one of my locos. Or any female footplate crew. I have not been able to find any so far in the supplier websites or catalogues I have looked at.

Do any readers know of any available?

Chris Clark

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The Minimum Railcar



We finish our railcar themed issue with a rather special model from Chris Dowlen

It's probably not the smallest railcar that anyone's modelled, but it might be quite near to it.

The Oxford Diecast item in the October From the Works section plus the Editor's comment that this issue of Garden Rail would have quite a bit on railcars has prompted me to write a brief article on this effort.

Let me go back rather a long time. The first car I owned was what I fancifully called a BMW 300+. Yes, it was a two-seater mid-engined BMW. But from just that you might get the wrong idea. It was otherwise known as an Isetta, and my version was built in the old Locomotive Works in Brighton, so it was right hand drive. In my opinion, for all its charm, it was not a very useful mode of transport.

Somewhat later I was nosing around the various sheds at Gloddfa Ganol and came upon an Isetta in one of the sheds, fitted with rail wheels. Noted for posterity. I would have to make a model of one if I got the chance.

In the mid-1990s Revell made a 1/18th scale die-cast model, so here was my chance. I bought two of them, and one found its way onto the railway. I subsequently discovered that there were

at least two examples of 2' gauge rail wheels fitted to Isettias, one in Germany and another in the UK, (based on a Brighton-built Isetta) which ran on the Leighton Buzzard line where it was known as the rail taxi. Apparently, this is now at the Tanat Valley Railway.

The two versions differed somewhat. The German version seems to have been cobbled together simply to get it working, whilst the British one is somewhat more sophisticated, with a bogie at the front, the front wheel arches welded up and buffers and cow-catchers added.

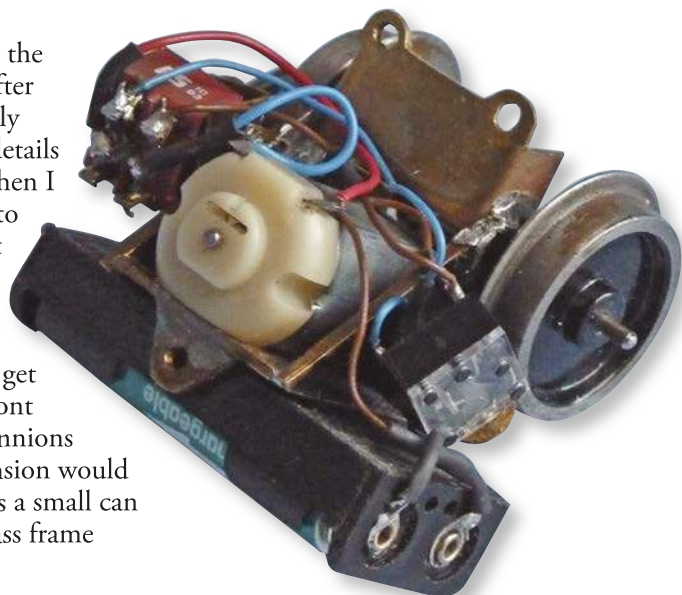
So much for reality. Now the model. Mine is modelled after the German version – largely because I didn't know the details of either full-size version when I built it. However, it seems to fit the picture better than it does the British one.

Mine was built a little like the German one – simply cobbled together to get something working. The front wheels are mounted on trunnions where the car's front suspension would have been, and at the rear is a small can motor on a soldered-up brass frame

with worm drive to a couple of wheels. The control system is basic in that it has a single double-acting switch to give forwards or reverse motion –single speed. And there you have it.

I'm told it was named Turbo after the 16mm East Surrey Group's late chairman's tortoise. It doesn't have a box - I use bubblewrap! ■

Power comes from a small can motor, which is probably as powerful as the real thing with its 9.5hp engine.



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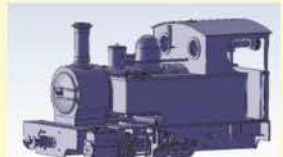


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TRACKSHACK *Live Steam Garden Railways*

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Bundaberg 0-6-2T May 2019 Manual £1633, R/C £1806
Merseysider May 2019, R/C £755, with sound £875
Katie 0-4-0ST May 2019 Manual £1320, R/C £1555
Silver Lady 0-6-0T May 2019 Manual £1678, R/C £1882
WD Alco 2-6-2T May 2019, Manual £1863, R/C £2090



Darjeeling 0-4-0ST Aug 2019 Manual £1930, R/C £2145
Billy 0-4-0T Sept 2019 Manual £1320, R/C £1555
Darjeeling Garratt with 2.4GHz R/C, Nov 2019, £3800
Lilla 0-4-0ST May 2020 Manual £1560, R/C £1780
Basic Series - Bertie, Millie & Sammie, all £650, built to order, delivery Dec/Jan.

Accucraft Ready To Run



L&B Bogie brake van in Light Grey Data Only, SR Brown livery, in stock.....£85



L&B Bogie Open Wagon in SR Brown, L & B Grey No12 or No13 in stock.....£80



L&B Open wagons, SR brown, L&B Grey, grey data only, SR brown data only£55



L&B Box vans, SR brown, L&B grey, grey data only, SR brown data only£60



Cattle wagons, W&L Grey £70



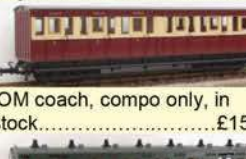
W&L Flat wagon GW grey £50



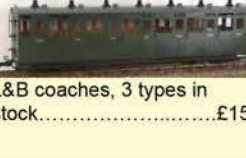
W&L Open wagon GW Dark grey only.....£55



W&L Brake Vans, W&L grey livery, light or GW Grey data only.....£75



IOM coach, compo only, in stock.....£150



L&B coaches, 3 types in stock.....£150



IOM 'E' Van in green & cream livery **In Stock** only£80
Arriving soon, date or £ may vary
Pre-Order now!



NEW! L&B 'Howard' van, Dec 2018 or later, SR Brown 4 numbers, L&B Grey data only,£100



IOM 'G' Van, early or late livery, or data only, available with or without portholes. Apr 2019 or later, pre-order now.....£80
Peco SM32, G45 & G1 Track
SM32 Buffer stop kit.....£5.00
SM32 1 x 3' flexi track.....£9.00
SM32 12 x 3' flexi track.....£96.00
SM32 6 x 30" radius curves.....£48.94
SM32 6 x 38" radius curves.....£48.94
SM32 60" rad points L,R.....£44.50
SM32 Y Point.....£44.00
SM32 38" rad points L&R.....£42.00
G-45 1 x 3' flexi track.....£14.15
G-45 6 x 3' flexible track.....£83.00
G-45 6 x 2' radius curves.....£44.28
G-45 6 x 300mm straights.....£44.28
G-45 48" radius points L&R.....£59.81
G45 Buffer Stop Kit.....£4.92
Gauge 1 1 x 3' flexi track.....£10.50
Gauge 1 12 x 3' flex track.....£112.00
Gauge 1 points L or R.....£84.50

- Clear live stock levels!
- Unbelievably fast dispatch!
- Legendary rapid low cost UK delivery!
- Free delivery on orders over £100!
- Award winning customer service!
- Fast, easy to use website!



We constantly compare our prices to ensure that you get the best deal at Track-shack.com



Garden Railway Specialists

The big January Sale

(1st to the 31st)

On all Second Hand (excluding Live Steam and Commission Sales)

£500 or under - 10% off

£501 to £1000 - 15% off

£1001 to £1999 - 20% off

£2000 or over - 25% off

But that's not all!

Our first ever Live Steam Sale (excluding Commission Sales)

10% off all Second Hand Live Steam

The 2019 GRS LGB Day 1st of March from 12:00 - 16:00

Senior personnel from the LGB distributor will be at our premises in Princes Risborough to meet with customers, to get feedback, discuss new products ideas, and take orders for the new items due in 2019. With LGB becoming more of a collectors club and so many 'one time only', limited editions in the product line-up, it is becoming vital to keep up to date, so as not to miss out. If you would like to attend please phone to reserve your place as soon as possible, refreshments will be provided and all LGB customers are welcome but priority will be given to our Premier club members.



Come and visit our extensively remodelled showroom, everything from ride-on live steam through to 'O' gauge on display



Massoth

We will be running our popular Basic (11th May £35) and Advanced (8th June £50) Massoth Courses in 2019, please tell us if you're interested in attending. The courses are run in the shop, and include a buffet lunch and the chance to purchase Massoth equipment on the day at a special 10% discount.



We wish you all a Merry Xmas and a Happy New Year, and look forward to seeing you in 2019

Christmas opening times

Christmas Eve - 9am - 4pm, Christmas Day - closed, Boxing Day - closed

New year's Eve - 9am - 4pm, New Year's Day - closed

Thursday 27th - Saturday 29th plus Wednesday 2nd January - Open as usual



Garden Railway Specialists Ltd

Station Studio, 6 Summerleys Road, Princes Risborough, Bucks, HP27 9DT

E-mail: sales@grsuk.com Website: www.grsuk.com Tel: 01844 - 345158

Monday - Friday 09:00 - 17:30hrs Saturday 10:00 - 16:00hrs