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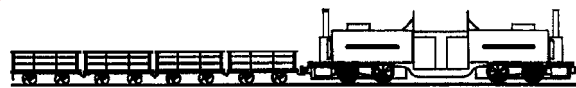
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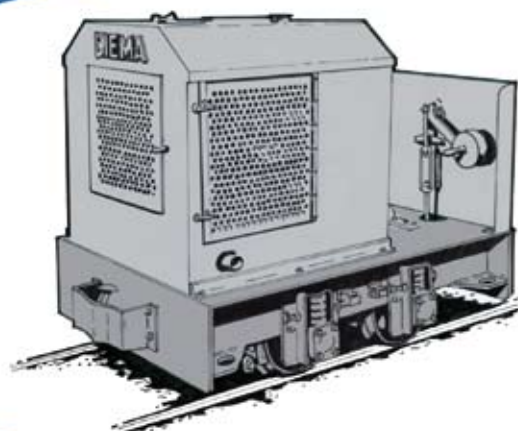




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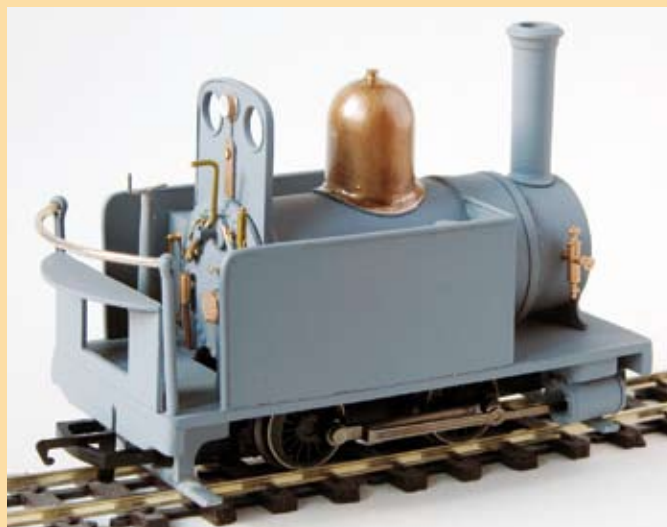
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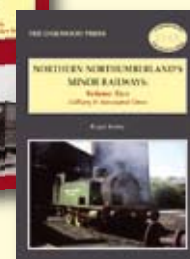
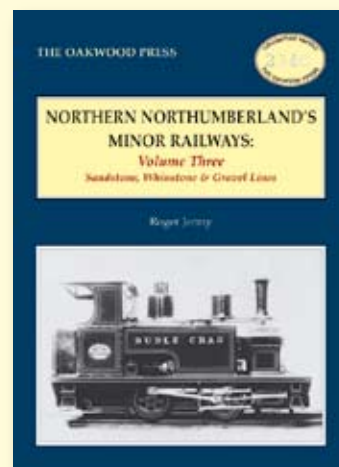
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NARROW GAUGE & INDUSTRIAL RAILWAY MODELLING REVIEW

IT'S HELLO FROM HIM...

Welcome to issue 89 of the REVIEW, the commencement of Volume 12 and my first edition as editor and publisher. You may notice one or two cosmetic changes to the magazine, but generally it is business as usual. The content continues to be the eclectic mix of narrow gauge, industrial and related matters that you clearly enjoy so much. I'm also delighted to re-iterate that Roy Link, who founded the REVIEW and steered it to where it is today, stays on as Production Editor, concentrating on what he does best: making our pages the most beautiful in the railway publishing field.

The change of publisher has been smoother than we both hoped, but not without incident. Early copies of the renewal form had an incorrect overseas telephone number and no fax number, and when a fax number was finally communicated to overseas readers, the machine promptly went on strike for several days without letting us know. These glitches were my fault, for which I apologise.

The vast majority of subscribers got through without problems and I take this opportunity to thank the large number who sent or called in with messages of support. It turns out that I know or am acquainted with more of you than I thought! And those people I don't know have been amazingly kind, welcoming and friendly. It's good to be among friends. After my introductory message in the last issue, there were a few overwrought contributions to web forums suggesting that the REVIEW was about to be flooded with standard gauge or, worse, mainline railways. As I said in response to some of those posts, NARROW GAUGE & INDUSTRIAL RAILWAY MODELLING REVIEW will reflect its title and Roy and

ISSUE 89 – Volume 12

January 2012

I will preserve the fundamental qualities of the magazine we love. Although we are both NG modellers, we, like many of you, do enjoy larger and standard gauge industrials and felt we would carry suitable material if it lit up the pages in the way that current content does. If the feedback I've had is anything to go by, there's a great deal of support for that approach. However, we will tread carefully and always put the established standards and ethos of REVIEW first and last, of that you can be sure.

This issue is full of outstanding material, including two 4mm WDLR locos from Alex Duckworth, one of which is on the cover, and Steve Bell's shelf-sized 16mm mining layout, proving that you can combine a larger scale with limited space and still get worthwhile operation. Tim Shackleton concludes his weathering epic, and the centre spread is a fascinating drawing from Engineering magazine for 1906, showing a double Fairlie designed for work in Bolivia but which actually spent its life in Chile. And finally, there's a one-off piece showing readers a bit of what has inspired me, the new editor, over the past 50 years.

Thanks for your continued support and our best wishes for 2012.

Bob Barlow, Editor
Roy C Link, Production

Deadline for Issue 90

March 12th 2012

Published quarterly by: Greystar Publications
66 High Street, West Wrating, Cambridge, CB21 5LU
Tel 01223 291442 Fax 01223 290195 email: editorial@greystarpublications.com

Annual Subscription Rates: U.K. – £22.00

EEC & EUROPE – £30.00, REST OF WORLD (Airmail) – £40.00.

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Printed by GWASG ERYRI, Uned 3,
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ON WAR SERVICE



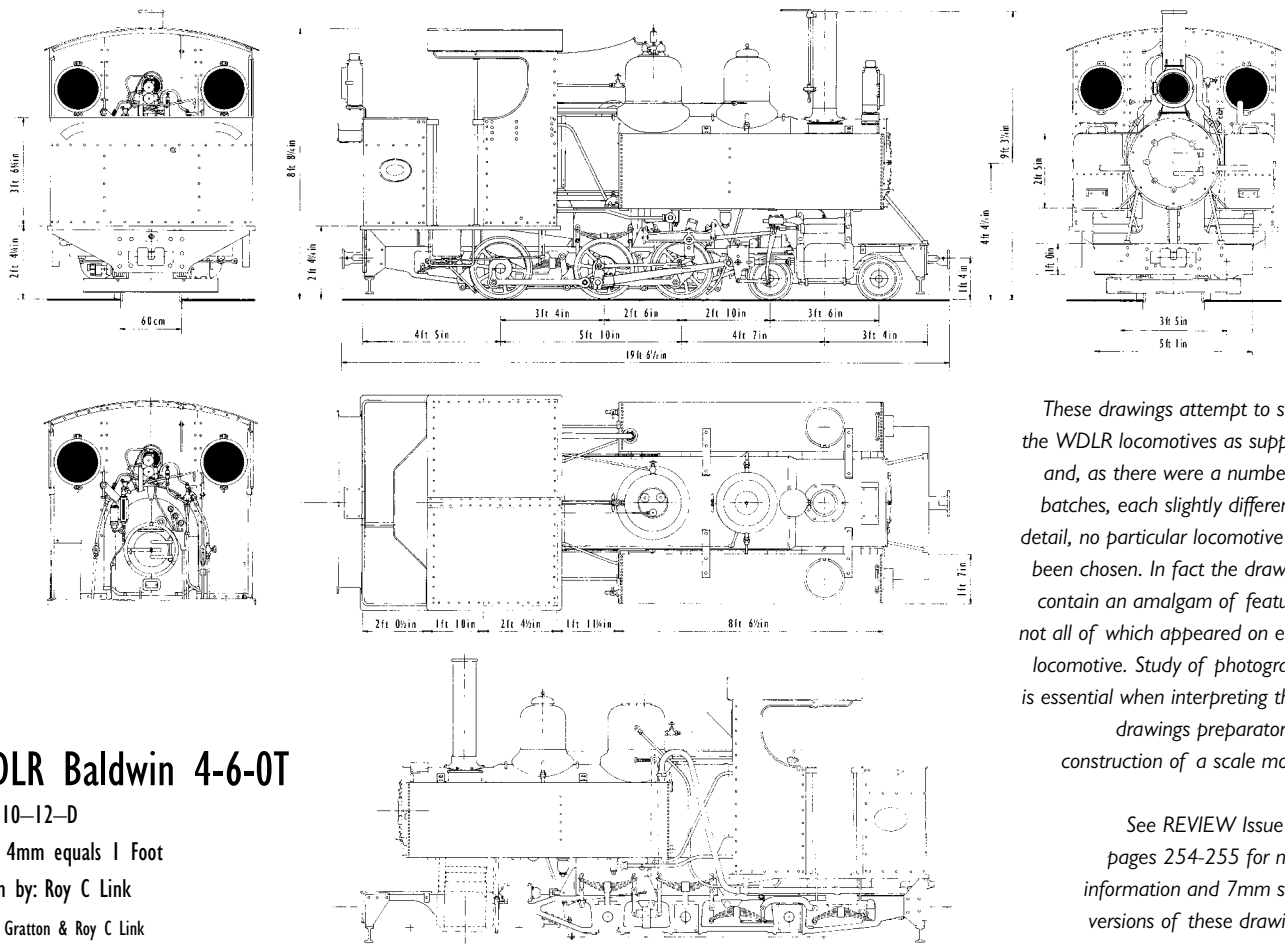
Photo: Alex Duckworth

Using a combination of scratchbuilding and kit plunder, ALEX DUCKWORTH perfectly captures the delicacy of a War Department Baldwin in 4mm scale — and then builds Meridian's new Dick, Kerr Petrol-electric:

HAVING BUILT A COUPLE OF TRACTORS for my collection of 4mm scale, 8mm gauge, WDLR stock I decided to try my hand at a steam engine. I looked at plans and photos of the Hunslet, the ALCO and the similar 4-6-0 Baldwin and decided on the Baldwin, partially because of the contrast between the bulky body and the light, almost insubstantial narrow bar-frame chassis on which it rode, and also I had both the Gem 4-6-0 and the Chivers 2-6-2 kits laying idle. It was fairly obvious from the start that I would not get the effect of lightness by using any of the bulky commercial chassis on offer — a glance at any photo of this engine shows a daunting amount of daylight through the bar frames — plus the need to regauge to 8mm and probably rewheel. Add to these problems the unequal wheelbase of the Baldwin and it became obvious that a scratchbuilt chassis and drive train would be needed. I had recently bought a Proxxon 70 mini-mill and this chassis seemed like the ideal chance to try it out, although I should say that I would have gone ahead even without the mill as I could quite easily have fretted out the chassis using a piercing saw.

The first item on my Baldwin list was a suitable wheel type. Short of making your own, the choice of wheel for an engine this size can be a problem. Using the excellent Baldwin 4-6-0 drawings in the REVIEW (No. 46, Pg. 255, reproduced here to 4mm scale) showed that I needed six 8mm drivers, two of them flangeless. The closest plastic-centered wheel I could find was the 9mm example from the 3mm Society's Finescale range, so I bought six and turned the flanges off two, which would become the centre drivers. The bogie wheels are standard 6mm disc wagon wheels from the 2mm Association, the bogie itself scratchbuilt from thin brass sheet.

Placing the wheels over the drawing of the bar frame chassis showed that the combination of oversized wheels and overscale flanges had more effect on the wheelbase than I had expected. I reduced the flanges on the remaining four wheels slightly, and also decided to adjust the overall wheel spacing by moving the front axle location forwards 0.5mm and the rear axle backwards by 0.9mm, the centre axle remaining in place. The plan was that this arrangement would leave just enough room to fit the brakegear. The chassis drawings were reduced to 4mm scale in a photocopier, chopped into three pieces and stuck down with reference to the new wheel centres



WDLR Baldwin 4-6-0T

Type 10-12-D

Scale: 4mm equals 1 Foot

Drawn by: Roy C Link

©Bob Gratton & Roy C Link

These drawings attempt to show the WDLR locomotives as supplied and, as there were a number of batches, each slightly different in detail, no particular locomotive has been chosen. In fact the drawings contain an amalgam of features, not all of which appeared on every locomotive. Study of photographs is essential when interpreting these drawings preparatory to construction of a scale model.

See REVIEW Issue 46, pages 254-255 for more information and 7mm scale versions of these drawings.

(using Photomount spray adhesive) onto two pieces of 0.5mm brass sheet soldered together. This was mounted in the new mill and cut to shape using a 2mm cutter. After cleaning off the paper pattern, the nickel-silver coupling rod blanks (etch fret waste) were soldered to the frames and drilled together, ensuring that axles and rods shared the same centres. Three lengths of 2mm rod were drilled and tapped each end to accept 14BA studding, forming jig axles for use in fixing the position of the top-hat bearings in the chassis.

After desoldering the components the rods were opened out to a tight fit on the 14BA crankpins using a cutting broach, and the frames drilled again to accept 2mm top-hat bearings, slightly oversize in the case of the centre axle holes. I then soldered the front bearings in place and pushed a 2mm jig axle through them. The other four bearings were placed into the chassis, again with the jig axles through and the rods located over the 14BA jig axle ends. With the axle ends resting on the edges of two steel rulers

Blutacked vertically to a sheet of glass, I soldered in the rear top-hat bearings, then, switching to high-melting-point solder, I fixed pre-cut chassis spacers 4.25mm wide in three places – the forward one horizontally between the chassis front extensions, the second also horizontally between the bottom frame bars just in front of the rear axle, and the third, drilled to accept the drive bearing, meeting it vertically. Once the chassis was soldered solidly (using the HMP solder to minimise the prospect of any parts dropping off during subsequent adjustment), the centre bearings were soldered in place, located with the jig axle on the ruler edges. The front chassis spacer was then drilled to accept the threaded rod which will locate the bogie. With reference to the drawings, the L-section piece which supports the side tanks was cut and soldered onto the frames, along with the mount for the swing link and its rear support bar, plus three pairs of cosmetic etched springs. I then used a piercing saw to cut away the excess top-hat bearing protruding inside the chassis. The driving wheels were fitted temporarily using

Right: Chassis ready for test fitting of wheels and bogie. The scale of the top-hat bearings gives an indication of the tiny size of this loco.



Photo: Alex Duckworth

2mm OD alloy tube axles sanded lightly to be a sliding fit inside the hubs. This avoids stressing the plastic centres and destroying the tight fit needed later. Then the bogie was fitted and adjusted for height on a small section of track. The whitmetal piston cylinders/smokebox saddle unit from the Gem kit was cut into three pieces and resoldered together with reference to the drawings and wheel outer faces to give correct centres both horizontally and vertically, and located over the 14BA stud. At this point, with a level chassis sitting at the correct height, I turned to the body and the as yet unresolved drivetrain problem.

KIT COMPONENTS

A trawl through the kit boxes for usable body parts proved surprisingly fruitful. The Chivers kit had a good etched cab of the correct type and the Gem kit's boiler, sidetanks and domes were well-cast and accurate when tried against the drawings.

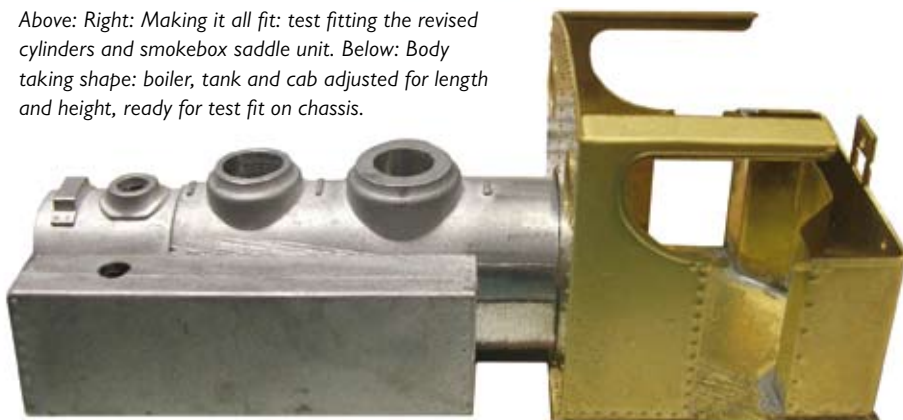
I had already decided to use whitmetal for these parts if possible as they would concentrate valuable weight over the drivers and away from the rear-end overhang. To ensure an unobtrusive drive, all the action needed to take place in the firebox area with the motor in the boiler casting and the drivetrain descending to bear on the centre or rear axle. So, I started burring and scraping the rear of the boiler casting out until I could slide a small Mashima can and brass flywheel fully into it. The sidetanks were then soldered on and the complete assembly was balanced on the chassis and checked for height. Then the dimension between the motor shaft and rear axle centres was measured. Time to start thinking about the drivetrain.

GEAR TRAIN

After a great deal of measuring, swearing, trial-and-error, I decided I had room for a train of transverse spur gears arranged vertically, driving a geared rear axle via a worm and shaft held in a bearing carried in the vertical frame spacer. I had a Tenshodo worm and gear small enough to be used as an axle drive and used these to locate and solder the bearing in the frame spacer at the correct height. Next I cut a length of 1.5mm motor shaft to size and pressed it into the worm with a drop of Loctite. At this point I soldered in the brakegear, the hangers and shoes of which are etched 2mm standard gauge items bought from NBrass Locomotives. The chassis was



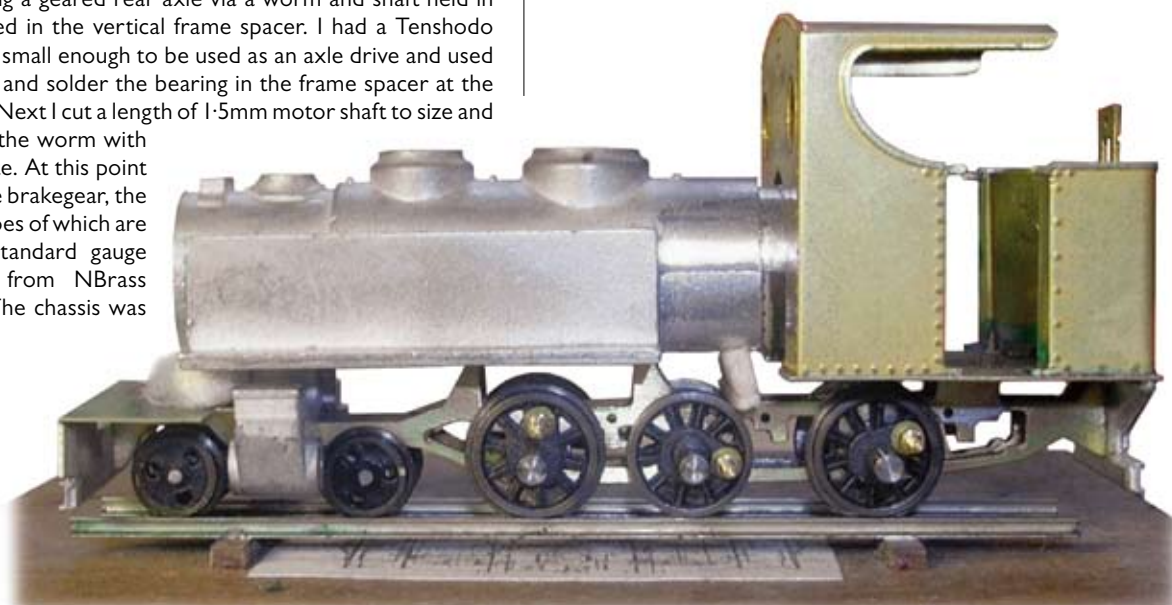
Above: Right: Making it all fit: test fitting the revised cylinders and smokebox saddle unit. Below: Body taking shape: boiler, tank and cab adjusted for length and height, ready for test fit on chassis.



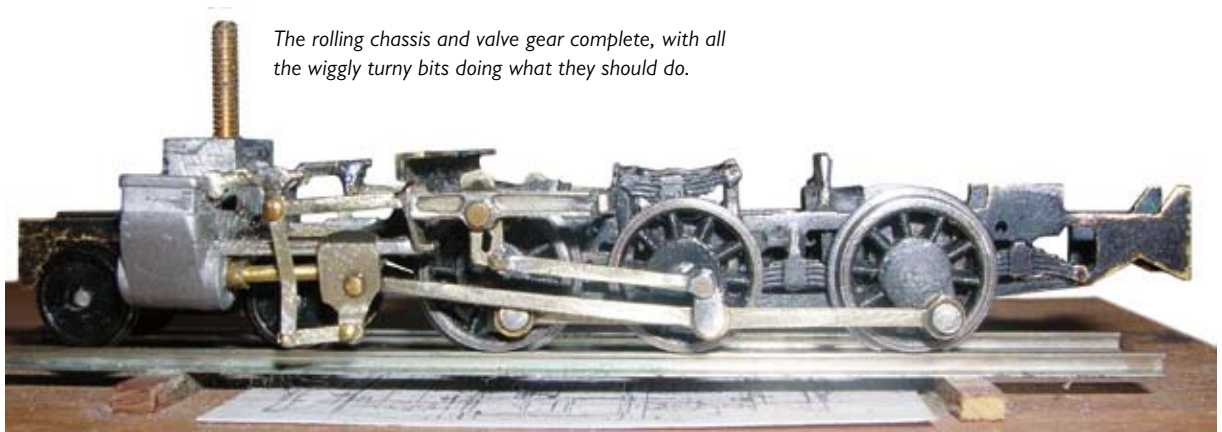
chemically blackened. Wheels and drivegear were fitted onto their axles and into the chassis, quartering the wheels with the coupling rods before they had time to really lock on to the axles. A useful tip when fitting and adjusting plastic-centred wheels on metal axles is to lubricate the axle with a touch of saliva.

SMOOTH RUNNING

I checked the chassis for smooth running at this stage, and after a great deal of adjusting, trimming, broaching and a touch with the soldering iron, the chassis ran on my test track with just a light nudge. Back to the drawings, this time with reference to the dimension between the motor shaft and the worm drive shaft. By this time I had combed my spares and junk boxes, and every gear and combination of gears that I possessed was spread across my work bench. After trying many types and sizes I hit on a combination of three brass gears that I had stripped out of an old Fleischmann



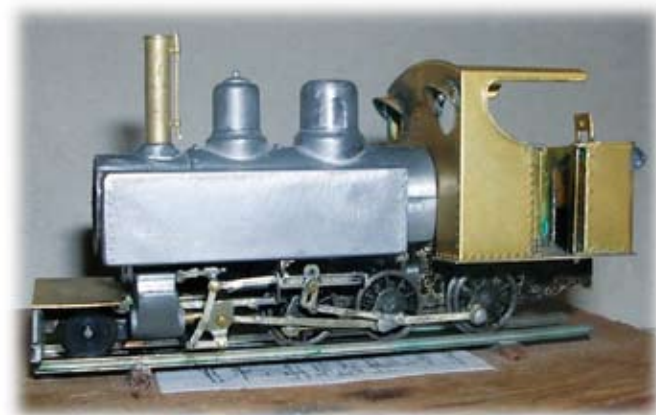
Photos: Alex Duckworth



The rolling chassis and valve gear complete, with all the wiggly turny bits doing what they should do.

Photos: Alex Duckworth

chassis. I press-fitted the largest to the front of the worm driveshaft and the smallest to the motor shaft, ensuring as I did so that they were aligned. The idler gear was fitted via a bearing to a small brass plate soldered to the rear chassis spacer whilst maintaining the gear mesh with the worm drive. After lubricating the various bearings, I held the body/motor unit down into place on the chassis whilst applying power to the motor. To my amazement it all worked quite smoothly! Connecting rods, crossheads, slide bars and various other rods were made from nickel-silver fret etch and articulated with soldered lace pins using washers made from oil-soaked Rizla cigarette papers, which were then tested and adjusted until they waggled satisfactorily. Plastikard wheel balance weights were cut and epoxied to the wheel fronts.



BODY DETAIL

Just the body was left to detail at this stage, but the relationship between the body, chassis and cab and their various heights would, to a great extent, decide whether the model would be convincing or not. With this in mind I cut a cab floor to the drawing dimensions, adding a front cutaway to accommodate the firebox gear train and a slot to clear the very top of the worm which allowed the cab floor to sit at the correct height measured from the railhead, luckily just clear of the oversize back wheels. The rest of the cab was now soldered into place, with the addition of a coal bunker and hand rails. This assembly was test fitted to the chassis and boiler unit balanced on the set-up track and, following a few minor fit problems, dropped into place.

The cab was detached and drilled to take various pipe runs and detail parts, then carefully set up and soldered to the boiler/tank unit. A small plate was soldered into the rear of the chassis to locate a captive bolt on the cab floor. The boiler front was drilled underneath to accept the front vertical studding which also locates the bogie and the smokebox saddle. The L-section tank support member was drilled both ends into the tank bottom to provide positive location points against twisting and losing gear mesh. A new front footplate was cut from brass sheet and fitted to the chassis, including the front stays and buffer beam with coupling. I also fitted the rear buffer beam to the cab floor, incorporating a swiveling coupling. The smokebox front was fitted together with a brass strip front headlamp bracket replacing the solid, cast-on original. Various domes, pipes, covers, stays and other detail parts were epoxied and soldered into place. Rivets, missing from the kit parts and lost in the fitting and sanding phase, were replaced with Archer transfers. The cab roof was rolled into shape and retained with two L-section pieces soldered to its underside, and a pair of 2mm scale handrail knobs drilled into the chimney to retain the swiveling cover plate.

PAINTING

The whole body assembly was then airbrushed with two heavily-diluted coats of etch primer, just thick enough to kill the shine on the metal, then left to dry under cover before a coat of thinned cellulose matt black was sprayed into angles and crevices and around raised detail parts. I then mixed cellulose black with a touch of grey to produce an anthracite shade which was well thinned and airbrushed lightly over the larger surfaces. This was followed by a second, slightly lighter waft with more grey and a touch of brown added. The body was then put to one side to allow the paint to harden off.

The chassis and bogie were bolted together with a weak, shortened coil spring sandwiched between them to provide a slight degree of downforce to the front wheels. Pads of 1mm printed circuit board were epoxied into the chassis as unobtrusively as possible, and backscraper pickups made of phosphor-bronze strip soldered to them. The previously-blackened chassis was touched in with black enamel, lubricated, tested for free movement and also put aside.

BACKHEAD & FINAL ASSEMBLY

Backwoods Models had very kindly sold me a brass backhead and some lost wax detail parts from their Baldwin kit, so again, using the REVIEW drawings, I soldered up a representation of the cab fittings complete with a firebox section to hide the gear train and a small

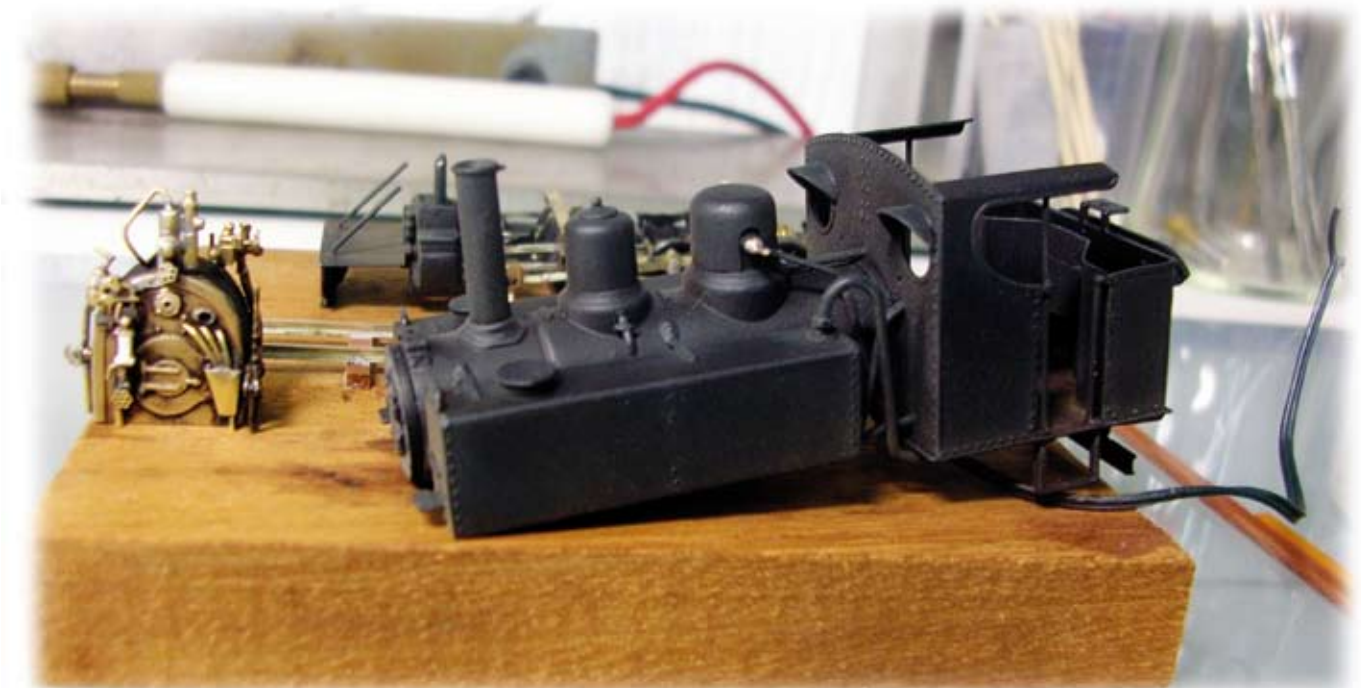
The main components laid out ready for assembly, showing how scratchbuilt parts, kit salvage and available wheels came together for this project. The axle jigs made for the job can be seen at centre.



false floor plate to cover the worm. This was sprayed matt black, then anthracite, following which the brass highlights were scraped back to the metal and polished.

The body unit and chassis were now bolted together and tried on the test track, running satisfactorily after some adjustment of the pickups and the bogie ride height. Final detail parts including

lamps, taps, valves and whistle were added together with glazed spectacle plates, one open and one shut, and a pair of Meridian number plates. The hose on the cab rear was made from a length of thin nylon camera lanyard soaked in matt white enamel paint and fitted with brass tube ferrules. The final touch was to lighten slightly the final paint mix and use it to drybrush detail and edges, finishing



Photos: Alex Duckworth



Despite its tiny size, Alex's model not only captures the essence of the WDLR Baldwin, with its lightweight see-through chassis and hefty tanks, but also the spirit of the rugged railways and men who operated under sometimes unimaginable hardship.

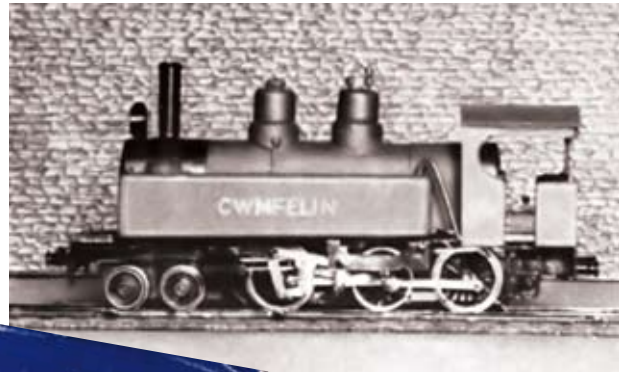


Photos: Alex Duckworth

The earliest Baldwin model?

Alex Duckworth's model had us wondering (as these things often do!) about when the first Baldwin model might have been attempted. The earliest we have found is well over 60 years old. It was built in 7mm scale to run on 16.5mm gauge by P R Wickham and briefly featured in his *A Book of Model Railways*, published by Percival Marshall in 1949. While Mr Wickham is well-known in the history of the hobby as a modelling author, designer and manufacturer, the man who commissioned him to build the Baldwin, Basil Miller, is less well-known. Basil's taste for narrow gauge modelling, considered quirky and pioneering in the 1940s, suggests he was an interesting character – and so it turns out. Contributor David Ronald not only met Basil, he also saw the actual model, as he explains:

I first met Basil in 1961, by which time he was retired from the RAF where he had been a highly-experienced 'mover' whose responsibilities included the early post-war flying boat movements from Southampton. When I met him he was transport manager for the Southern Gas Board, based at Portsmouth. I first made contact through Roger Meadowcroft of Colne, a pioneer tramway modeller. Roger mentioned my name to Basil and I was subsequently invited – or perhaps summoned – from my military unit at Marchwood to visit him at his home in Southwick. Basil, a confirmed bachelor, had a tiny cottage in Southwick shared with two cats and administered by a very old-fashioned housekeeper. The Southwick estate had originally been taken over by the Admiralty for the planning of D-Day and had been retained after the war as HMS Dryad. On the estate, Basil rented a large outhouse which at this stage contained an 0n16.5 narrow gauge layout running around the walls and a 4mm scale tramway layout in the centre (about 10ft x 5ft as I recall). Alas, I fear it was a case of "too much too soon" as the narrow gauge layout, which I think was end-to-end, never ran due to corrosion of the steel track (early Graham Farish 'Flexitrak' probably). After a lot of remedial work, I managed to make the tramway run but never very efficiently!



Had I not seen and been fascinated by the Baldwin model in P R Wickham's book, I would probably never have asked to see it. Basil had ordered it from Peter Wickham while still in the services, with a view to building his dream layout when he retired. Alas, lack of time combined with an absence of technical skills to thwart that particular dream. However, the narrow gauge models Basil accumulated were carefully stored in his cottage and I recall the Baldwin, along with Ashover-style coaches, being laid out on the kitchen table for our admiration. Its looks lived up to the illustration in the book.

Basil's chief interest by the 1960s was tramway preservation. He was at one time Chairman of the Tramway Museum Society during the turbulent early years which followed their decision to build a working museum at Crich. Banging heads together seemed to be his principal occupation at this time. Later he was involved in the removal of Claude Lane's famous MET tramway from Eastbourne to the West Country, and he also spent time on the FR at Porthmadog, usually assisting Norman Pearce's team to restore the communications system.

All this tells you very little about the Baldwin model, which may still exist – although it could be anywhere! – but it does give an insight into another of the characters who pioneered the narrow gauge branch of railway modelling.

with a light dust of weathering powder; these engines were worked hard but well cared-for and regularly cleaned.

On the whole I'm quite pleased with the Baldwin, although if I made another I'd make a few changes, not least to use split-axle pickups which, on reflection, would be worth the extra chassis work they would entail. It turns out that I haven't quite finished with this engine, as I have now decided to use DCC control on all my

models so I have to fit a decoder somewhere. I've been holding off DCC fitting my narrow gauge engines until I worked out how to fit a decoder into my Nigel Lawton 20hp Simplex but I think I now have the answer. My next WDLR project will probably be a Hunslet, which is a reassuringly boxy shape and shows very little daylight through the works.



Above: The extra effort in modelling on the correct 8mm gauge (4mm scale) for the model is repaid when viewed either from above – or from the rear. Also seen is the lifting hose that many locos carried. The main use was for replenishing the water supply in the side tanks – either from a static tank beside the line – or (less successfully) from water filled shellholes.



The superb figures in the photographs, are painted by Alex and originate from the collection of World Ward 1 components produced by Barry John Williams. The range includes figures (UK, US and French), artillery, motor transport, armoured cars, horsedrawn transport, light railway equipment and other WW1 related accessories.
See: www.wdmodels.com

Photos: Alex Duckworth

Upper right: The chassis of Meridian Models' Dick, Kerr kit, including the neat can motor. It's a very simple, basic etch which, with care, turns into a running unit very quickly. The design is clever, too, utilising a belt-driven layshaft (just visible behind brake hangers) driving both axles. The wheelbacks have been skimmed and the flanges reduced to a finer profile.

Lower right: The body under way, with half-etched rivets pushed out.

MERIDIAN'S NEW DICK, KERR KIT

When the editor picked up this newly-released 4mm kit from Meridian at Expo NG, he had just edited the foregoing article on the Baldwin. This seems to have made me his natural choice to review it, and so it was that I received a generous-sized plastic box containing everything needed to make the distinctive War Department Dick, Kerr petrol electric tractor.

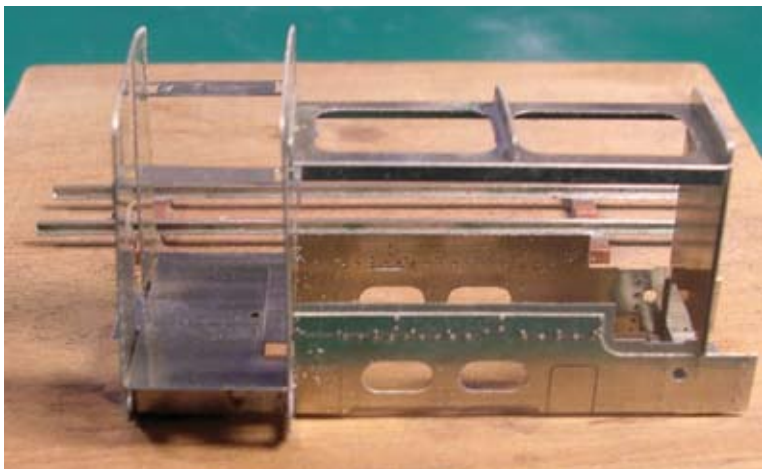
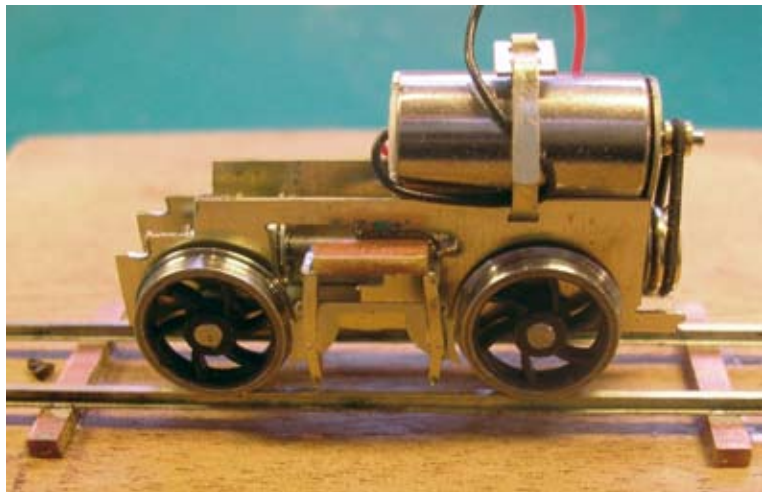
The kit came with a CD of instructions in PDF form, which worked quite happily on my workshop iMac. The instructions, mostly step-by-step photographs, run to fifteen pages and are extremely comprehensive. I chose to solder the kit together using a 25watt Antex iron, No.53 bit with Carr's 145-degree detailing solder and Powerflow flux. To add some of the smaller details I also used a resistance soldering unit with Carr's 179-degree solder cream.

Before starting on the chassis, I skimmed the wheel backs and reduced their flanges to suit my test track standards. The chassis is very easy to make and as long as the instructions are followed and the basic etch piece is folded neatly and squarely you will have a running unit in no time at all. The basic design is both simple and clever, incorporating a belt-driven ball-raced first stage layshaft driving both axles via worm and spur gears. Beware that space on the layshaft is limited, so be careful with the Loctite. I didn't use the supplied spacing washers for the 009 configuration as I had set the wheels in to fit my 8mm gauge, and I found that I had to file the rear of the chassis a little to enable everything to fit in the body.

SUPERSTRUCTURE

Work on the body starts with pushing through the half-etched rivets. I've never liked this process as it always distorts the workpiece slightly, no matter how carefully it is done. A better solution, in my opinion, is half-etched overlays, although to be fair it is hard to see how overlays would be used in this case. Another solution I've used successfully on other models is to add rivets at the primer stage using the Archers transfer sheets. Anyway, once riveted, work can begin on the main body. Care taken at these early stages to ensure that bends and joints are at 90 degrees, and that no twist is developing in the structure as it is soldered together will pay dividends later in the build as the model is of a plain, rather brutal, boxy subject and any deviation from straight and square will be noticeable. Don't forget to remove the centre piece of part 3 (as I did – forget, that is!).

At step 30 the instructions tell you to fold and fit two spacing bars that will set the rear cab sheet at the correct distance for the cab sides to be soldered in – a really good idea except that they kept falling out when I used them. If they are to be used I'd suggest that they could be tack-soldered using the small tab inside the cab. I

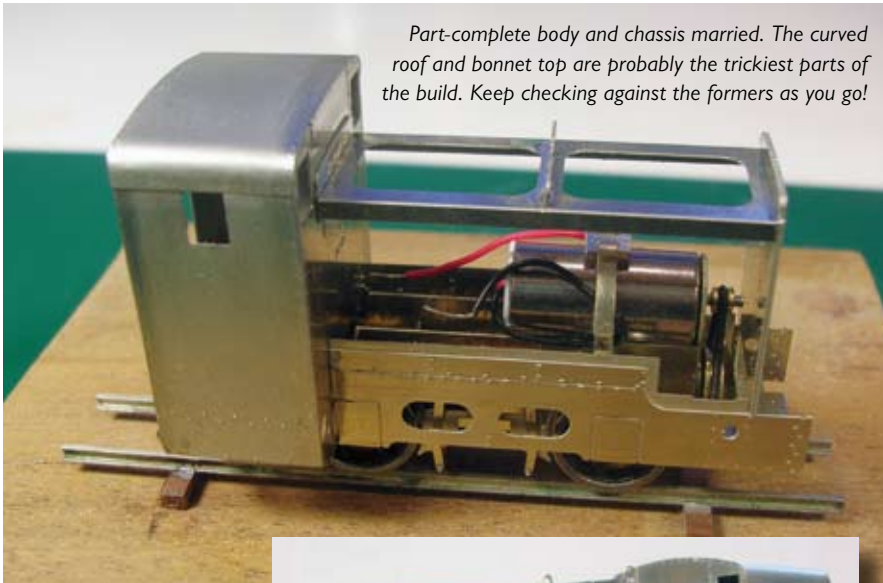


chose to cut a block of hard foam to fit between the front and back cab sheets and soldered in the sides, very carefully.

Probably the hardest part of this kit build is forming the curved sections of the bonnet and the cab roof, but if you follow the instructions, and check the bend positions continually against the formers, all should be well. Engine compartment doors are next and again will need to be fitted squarely. I didn't use Greenwich couplers as suggested, preferring slightly modified Branchlines chopper couplers instead, tweaking the coupling angle parts to fit.

The radiator is a fairly complex design which works very well. Parts 41 and 42, when spaced apart with the seven parts 43, form a good representation of the finned radiator top and the system of etched supports and pipes cut from brass wire work very well and look suitably busy. After trying the parts for fit I elected to use the armoured radiator cover; the instruction sheet states that most of these tractors used the cover as the radiator was very vulnerable when unprotected.

The body is finished by attaching the few detail parts, notably some very well etched door hinges and catches, the lost wax axleboxes and the trolley pole assemblies which support the radiator. Finally the lifting frame is assembled and fitted. It is a pity that the prominent brake actuating rods and crank are not included on the etch, but these can easily be fabricated and added later. I always like to thoroughly clean away any flux residues from a soldered kit, otherwise both joints and paintwork will suffer eventually. A good scrub in hot water with Ajax powder and an old toothbrush usually



Part-complete body and chassis married. The curved roof and bonnet top are probably the trickiest parts of the build. Keep checking against the formers as you go!

does the trick, and also tends to expose any poorly formed joints – always make sure that the plug is in the sink, though. Allow to dry thoroughly.

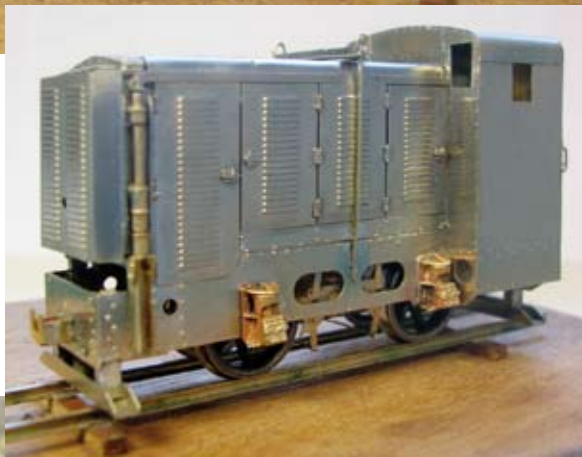
FINISHING

Before painting I airbrushed a very light coat of Teroson etch primer thinned with cellulose thinners over the body. The kit appears to be etched from nickel silver which, in my opinion, takes paint much better than brass. I sprayed the model with my preferred mix of colours for the WD tractors, which is a coat of Humbrol 118, followed by a light waft of Humbrol 86 in the centre of large panel areas, then when those are thoroughly dry a light drybrushing of Humbrol 159 to fetch out the detail and panel edges. The kit is, in my opinion, a well thought-out and produced item that builds, with care, into a very nice, accurate-looking model which runs well. The chassis in particular is excellent. I intend to try a few small lead weights low down in the body which may aid traction and to add a DCC chip and “stayalive” unit, as there is plenty of spare room under the bonnet. Highly recommended.

The Dick Kerr tractor kit costs £110 from Meridian Models, 40 Moreland Avenue, Benfleet, Essex SS7 4HB

meridianmodels@live.co.uk

Almost complete. The kit captures the rather brutal, boxy lines of the Dick, Kerr petrol electric tractor. It looks like a fighting machine.



Painted and awaiting weathering, which it will doubtless get in spades as it ferries men and munitions to the front.

The interesting tendency

New editor Bob Barlow explains how a dog-eared magazine and an unfinished narrow gauge layout started him on a 50-year modelling odyssey which eventually led him to the REVIEW:

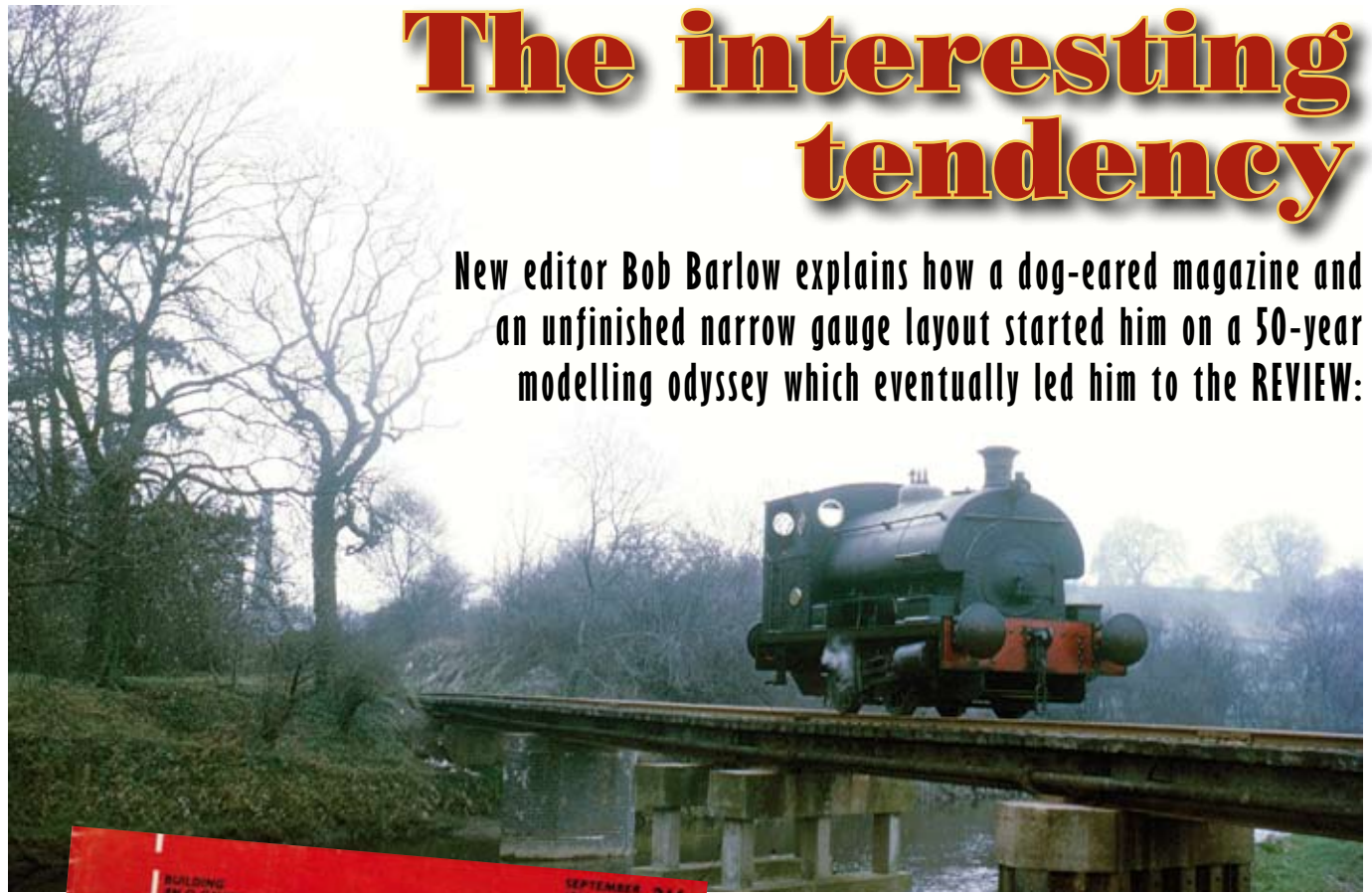


Photo: REVIEW Collection



IN THE LATE SUMMER OF 1964, when I was just 14, someone gave me a copy of *Model Railway News*, setting me on a course that I'm still following today. I wasn't exactly new to model railways as my Uncle Jack had, some five years earlier, given me a Hornby Dublo three-rail layout on a 6ft x 4ft sheet of ply. But that was just a train set. While I'd played with it well enough, by 1964 I had signed up to the global revolution ignited by The Beatles and was rather more interested in growing my hair and holding hands with my first girlfriend than being seen anywhere near a train set.

Left: The fateful *Model Railway News* from 1964 which changed my thinking about railway prototypes and ways of modelling them. The group of buildings, from Cyril Birch's unfinished Ynys Gwyntog Project, opened up the possibilities of narrow gauge while the lovely modelling and, more particularly, the superbly realistic angle of the photograph, demonstrated a new way of thinking about miniaturism.

Above: The perfect combination – Peckett saddle tank crossing the River Dove, Tutbury Plaster Works (British Gypsum Ltd).

Then came that copy of *MRN*, already slightly tatty from handling. I don't remember who gave it to me and with a cover price of half-a-crown I certainly wouldn't have bought it myself since every penny of my pocket money went into buying records and ridiculous clothes. The magazine cover was deep orange and featured a perfectly-shot photo of a group of quayside cottages in 4mm scale. Even before I looked inside, I knew this was for me. This was serious, grown-up model railways that relied more on art and craft than anything out of a box. And when I did open the pages, I was instantly and forever hooked on narrow gauge in particular and 'proper' modelling in general. For the buildings on the cover were part of Cyril Birch's 4mm scale Ynys Gwyntog project, a mysterious and wonderful Welsh NG layout that came and went and seems never to have reached completion. Yet it had enormous inspirational power, and that magazine – *MRN* for September 1964 – has stayed with me ever since, right through a wild youth (complete with long hair and ridiculous clothes), a stressful and sometimes mad newspaper career and throughout the ups and downs of family and business life. It not only illuminated the escape hatch from the pressures of daily existence, it eventually inspired me to become the founding editor of *Model Railway Journal*, where I spent 14 years of my spare time swinging the blue pencil for a total of 105 issues. As I take on the role of editor and publisher of the *REVIEW*, it inspires me still.

BORCHESTER'S COLLIERY BRANCH

Anyway, after the long hard winter of 1964-65 I paid my first visit to the Model Railway Club show at Central Hall, Westminster, where I saw the original and best Borchester and met its creator, Frank Dyer. Two elements of the layout stood out: the spectacularly ordinary station entrance, tucked down in the street below the platforms, and the so-called colliery branch where a hand-built Sentinel 'lunch-box' 0-4-0 shunted wagons of coal and pit props (squeaking through 9in radius curves!). Frank's way of giving his models outstanding authenticity by representing the dull grit of the everyday working environment was an idea that stayed with me, but his little Sentinel was particularly unforgettable for me. Built around



Photo: Bob Barlow

Above: In 1965 Frank Dyer's Borchester layout appeared at the MRC show in Westminster and while most were looking at the mainline thunder, I was captivated by the little NCB Sentinel operating its colliery spur. Some 25 years later, a 7mm version from an Impetus kit (by Robin Arkinstall, originator of the Impetus range) was built at my suggestion for use as the gasworks hauler on the Inkerman Street layout – and here it is today, coming apart at the seams and a bit worse for wear but still going strong. Everything about these unconventional chain-driven, boxy locos appeals to me.

a Zenith motor bogie with an impossible Belpaire-type box ahead of the cab to accommodate the huge magnets, it was incongruous to say the least, yet I was hooked again. Frank kindly sent me a little dimensioned drawing of his version of the superstructure and I fabricated a wonky copy in brass using a gas-ring soldering iron – my first scratchbuild. I've been fascinated by industrials of all shapes and sizes ever since, and even took the opportunity to have a Sentinel 'lunch box' on Inkerman Street, the *MRJ* 7mm project layout built in the late 1980s, where it was the Salford Corporation gasworks mule. In fact, that Sentinel was the only thing I kept when Inkerman Street was sold, and I treasure it still.



Photo: Iain Rice

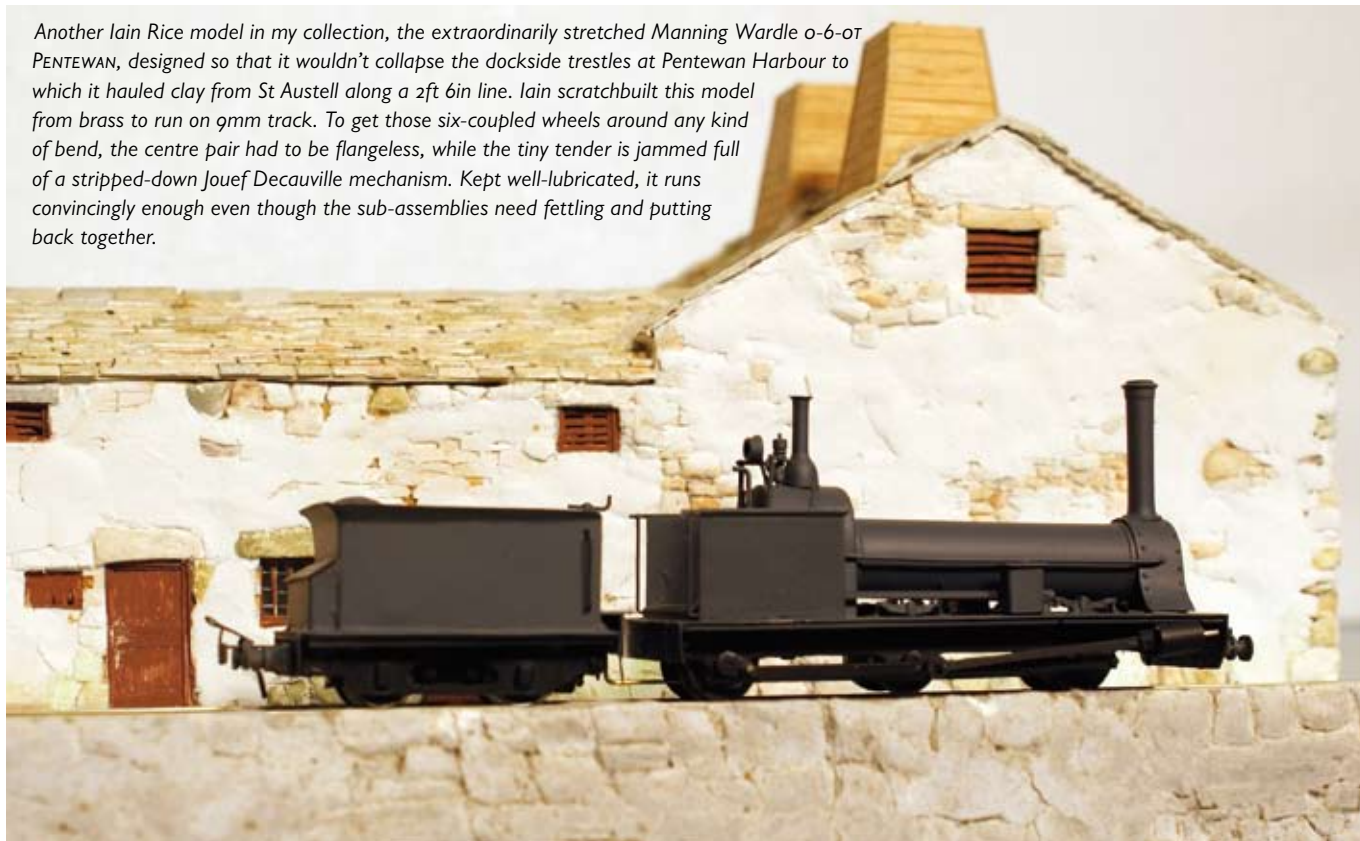
Above: This is part of Iain Rice's 4mm North Cornwall Minerals Railway from the 1970s, which cleverly combined elements selected from various real West Country industrial backwaters. Here, Neilson 0-4-0 box tank *PIONEER* waddles over trestles with a train of granite slab empties. The NCMR demonstrated that an almost entirely industrial railway could form the basis of a beautiful and satisfying model. Indeed, it made me seek out Iain in his Devon bolthole, and he's been a friend, inspiration and occasional collaborator ever since.

NORTH CORNWALL MINERALS RAILWAY

Before Inkerman Street, which debuted at the *MRJ* Show in 1990, my interests were already 'off-piste', so to speak. I had teamed up with Iain Rice in the early 1980s to build the quirky East Suffolk Light Railway. This 4mm model was based on our mutual love of both Suffolk and the less-travelled railway backwaters. Iain, though, had always been well ahead of the curve. It was his earlier and rather daring P4 industrial exercise, the North Cornwall Minerals Railway, that had me beating a path to his door around the late 1970s. It's hard to credit now, but at the time there were plenty of modellers who fancied themselves as purists pouring scorn on such a humble subject. Yet, for me, already avidly reading up the Cornish mines and the ramshackle railways serving them, it was inspired beyond measure. Iain has occasionally been controversial, that's for sure, but he is essentially a free-thinking, passionate and artistic spirit who has made an enormous contribution to our hobby. I'm certainly glad I found him all those years ago and that he remains a friend.

But then, editing *MRJ* enabled me to meet a lot of accomplished modellers, many of whom devoted (and still devote) vast amounts of their lives to researching and replicating every pip and rivet on their chosen prototypes, and who have often laboured endlessly

Another Iain Rice model in my collection, the extraordinarily stretched Manning Wardle o-6-or PENTEWAN, designed so that it wouldn't collapse the dockside trestles at Pentewan Harbour to which it hauled clay from St Austell along a 2ft 6in line. Iain scratchbuilt this model from brass to run on 9mm track. To get those six-coupled wheels around any kind of bend, the centre pair had to be flangeless, while the tiny tender is jammed full of a stripped-down Jouef Decauville mechanism. Kept well-lubricated, it runs convincingly enough even though the sub-assemblies need fettling and putting back together.



Photos: Bob Barlow

at unearthing and accurately recording historical data. I came to believe that those who choose to sweat over minute details that will never be seen, and generally take a nerdy and obsessive approach to their modelling are to be admired and encouraged if that is what they enjoy. When I call someone a 'rivet-counter' it's a badge of honour rather than a criticism even though I remain certain that building beautiful, convincing models is more about a state of mind than splitting fragments of a millimetre. I was also privileged to have access to enormous amounts of background information on modellers like PD Hancock, George Illife Stokes, Frank Dyer, Jack Nelson, Geoff Williams and many others, and was glad to learn that for most of them, making and observing models invariably involves an emotional connection. We tend to choose prototypes or places that take us back or invoke memories or capture a time, a place and an atmosphere. In fact, you will find a perfect example of this elsewhere in this issue, in the shape of Alex Duckworth's 4mm WDLR Baldwin, the very first contribution I edited in my new role. As soon as I saw that side-on photo of the loco with those solemn soldier figures peering at the camera, in the way people did back then, I was transported to France in the days of The Great War. With disbelief suspended, I knew that battle was raging just down the line, could almost hear the distant thunder of artillery. That's an emotional connection. It's what can happen when models have some heart and soul poured into them, and it's an experience that thrills me still.

YNYS GWYNTOG RIDES AGAIN

Why am I telling you all this? Well, mainly because readers deserve to know something of the new editor's modelling interests and record, but also because they may also be interested in what

inspires me. For example, one of the reasons I clung to that 1964 MRN was a feeling that one day I would have a bash at my own version of Ynys Gwyntog, or at least the glorious quayside hamlet of Glancrug, as shown on the orange cover. Now that I have both the time and the weight of expectation upon me, I plan to build it, or a version of it, on a spare 5ft x 3ft baseboard, this time in 7mm scale. Even the idea of it fills me with the same sense of excitement I felt when I saw those cover pictures in '64. Before that, however, are other pressing matters. My main project, for which the baseboards are already built, is a 16ft long by 3ft deep agricultural railway in 014, loosely based on Nocton, railhead of the old Smith's Potato Crisps empire in Lincolnshire but transplanted to the pleasanter



Above: Two locos from my upcoming 014 potato railway, both awaiting painting: Roy Link's original Lister RT which is now part of the KB Scale range (shown here driven by an old Classic Commercials figure), and a Nonneminstre Models Orenstein & Koppel. The loco stud for this layout is eclectic, to put it mildly.

For any fan of quirky industrials, Alfred Rosling Bennett's book *The Chronicles of Boulton's Siding* is compulsive reading. Isaac Watt Boulton was an innovative Victorian engineer who had a yard at Ashton-under-Lyme where he refurbished, re-built or adapted engines, mainly for the use of contractors – and a stranger crop of locomotive oddities would surely have been impossible to find. This amazing item is RATTLESNAKE, built from the ground up at Boulton's in the 1860s and retained there for yard duties. About 15 years ago, Paul Berntsen saw the drawing in *Chronicles* and built a 4mm version. I then got him to make a 7mm version and this is it. It has two Portescap geared motors, one driving the wheels and the other working all the gubbins above the footplate – the huge flywheel, boiler-mounted motion and those dummy chains which flail in exactly the way described in *Chronicles*. Indeed, the sight and sound of the chains in action is what gave the engine its name, according to Bennett. The model was painted and weathered by Martyn Welch.

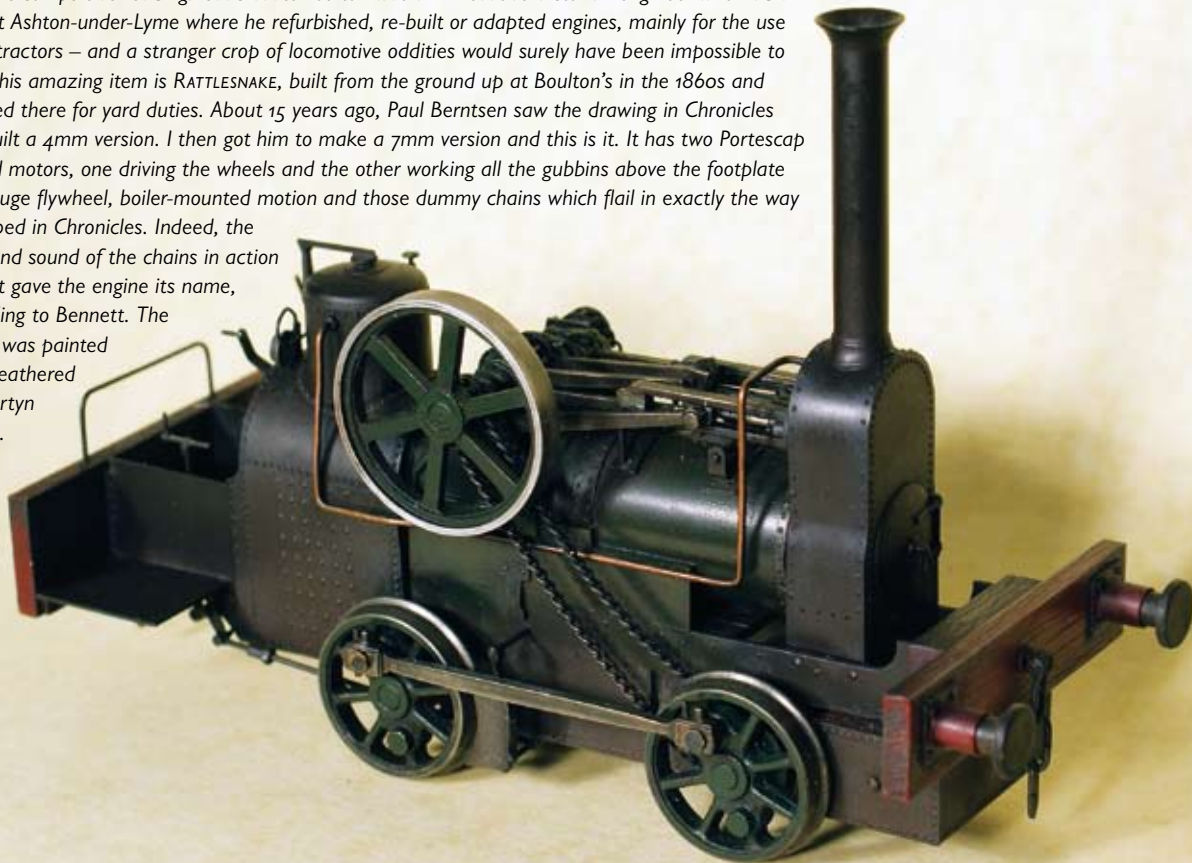


Photo: Bob Barlow

fens of north Cambridgeshire. I threw the dimensions and 'wants list' at Iain Rice and he came up with a superb plan capturing this geographical hybrid. As you will see here, several locos are already built, track components are in stock and the nucleus of a modelling group, which someone has already dubbed 'The Cambridge Spuds', has formed – so watch this space for updates and developments as we go along.

Finally, I was visited not long ago by a very well-known author, expert and modeller of one of the bigger and more important pre-Group companies, who strolled through my workroom looking at the sort of models you see here with a bemused expression on his face. Eventually, he said: "You've always gone for this quirky, oblique stuff. What on earth do you see in it?"

I think that tells us everything we need to know about the difference between modellers like us and modellers like him. We belong to the Interesting Tendency – a tendency that will continue to inform the REVIEW as it moves into the future.

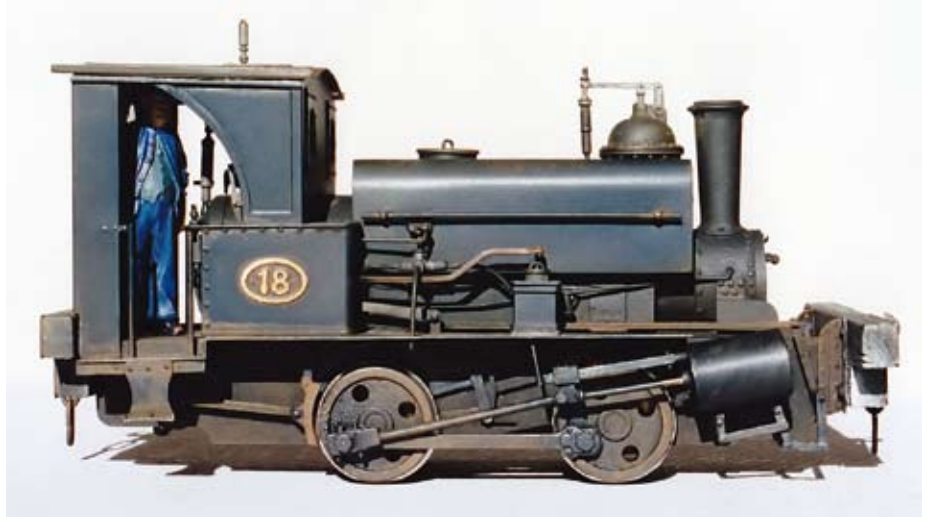


Photo: Paul Berntsen

Above: This is one the reasons I decided to move from 4mm to 7mm scale. It's a Lewin 0-4-0 based on the type that famously worked Seaham Harbour. Made from an Impetus etched kit, it was built and painted by Paul Berntsen, who has captured the careworn condition superbly, especially the grease clagging around the crankpins. The driver is an old Model Company figure (now only available from Fun & Games USA: www.scalefigures.com). Some Impetus kits are available from Karlgarin Models of Chelmsford, www.karlgarin.com



Steve Bell turns a shelf full of 16mm scale models into a stunning working layout, demonstrating how limited space and a larger scale can combine to offer absorbing operation:

THE ADIT WAS CONCEIVED as a means of displaying a growing collection of model mining equipment. Previously they had been stored on a shelf in a large walk-in cupboard. It eventually occurred to me to use this shelf for a diorama. At 1750mm by 250mm, it was not a vast area in any scale – and I model in 16mm. I have been working in this scale for over 35 years, enjoying both live steam round the rockery and the finescale modelling approach, and although I have dabbled in other scales I’ve always come back to 16mm. I seem to have great difficulty working with plastics, but will happily work in metal and wood, so the size afforded by 16mm enables me to scratchbuild to a level of detail with which I am content, using media I enjoy.

For many years I have had a fascination for the railways and mines of Snailbeach and have visited the site many times, usually coming away with photos and dimensions of some piece of machinery or building or something. Inevitably the models started to appear, hence the shelf. After a series of sketches it soon became apparent that it would be virtually impossible to display everything without the scene looking cluttered and unrealistic. I also had limited headroom with a shelf above so I couldn’t use my models of the head-frame and Black Tom shaft’s winding house (which is actually more like a shed), so a rethink was needed. The eventual decision was to put

the emphasis on a tramway and have a working layout based on a lead mine adit. This concept eventually evolved into a barite mine. A track plan and the necessary buildings were then decided upon. The layout was to have three main structures – the adit entrance, a loco shed and a processing shed/tipping dock.

PROTOTYPES AND LAYOUT

A little way up the valley at Snailbeach, above the main lead mine building complex, is the preserved processing plant at Perkins Level. Although some lead had been recovered, this was a barites



Photo: Steve Bell

Great care has been taken to present the layout attractively – important for exhibitions, where first impressions count.

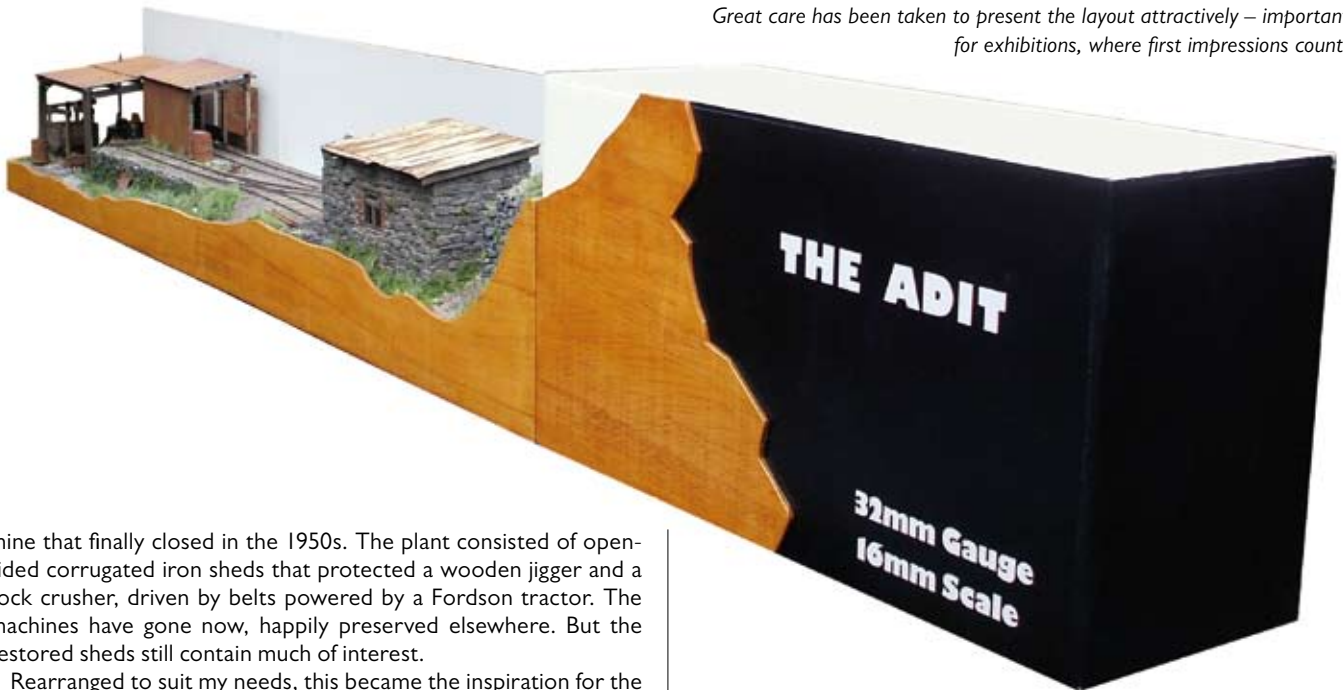


Photo: Steve Bell

mine that finally closed in the 1950s. The plant consisted of open-sided corrugated iron sheds that protected a wooden jigger and a rock crusher, driven by belts powered by a Fordson tractor. The machines have gone now, happily preserved elsewhere. But the restored sheds still contain much of interest.

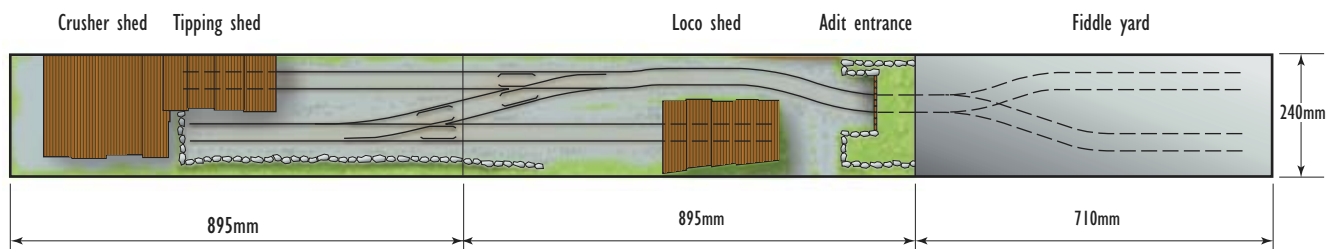
Rearranged to suit my needs, this became the inspiration for the processing plant on the layout, and is built with a stripwood frame weathered grey using my concoction of drawing ink diluted with methylated sprits. The corrugated iron sheeting is vacuum-formed plastic sheet obtained from Brandbright. The finish is aerosol red primer, dry brushed greys and browns and then finished with 'instant rust' solutions. The diorama's operating rock crusher is scratchbuilt in brass with Mamod flywheels and is powered by a 12-volt motor hidden inside the adjacent Lister stationary engine. Transmission is by elastic band, recovered from outside my house when the postman has been. The jigger was built from a few known dimensions and photos, but at the time I was uncertain of a few details, so it is modelled in a disused state.

The adit entrance is modelled on the 'Day Adit' at Snailbeach, and consists of an MDF and plywood carcass dressed with real stone broken from stone slip blocks obtained from a dolls house supplier. The loco shed is built in the same way; the roof is corrugated aluminium obtained many years ago from a supplier called Back to Bay 6. Working illumination is provided by three grain o' wheat bulbs wired in series in the roof space. This shed is freelance but is influenced by the Laxey mine loco shed on the Isle of Man.

Baseboards are built with a plywood frame and a top of MDF. The backscene is purposely kept plain white as it just acts as a plain background; I think a painted backscene would be too close to the action to be convincing.

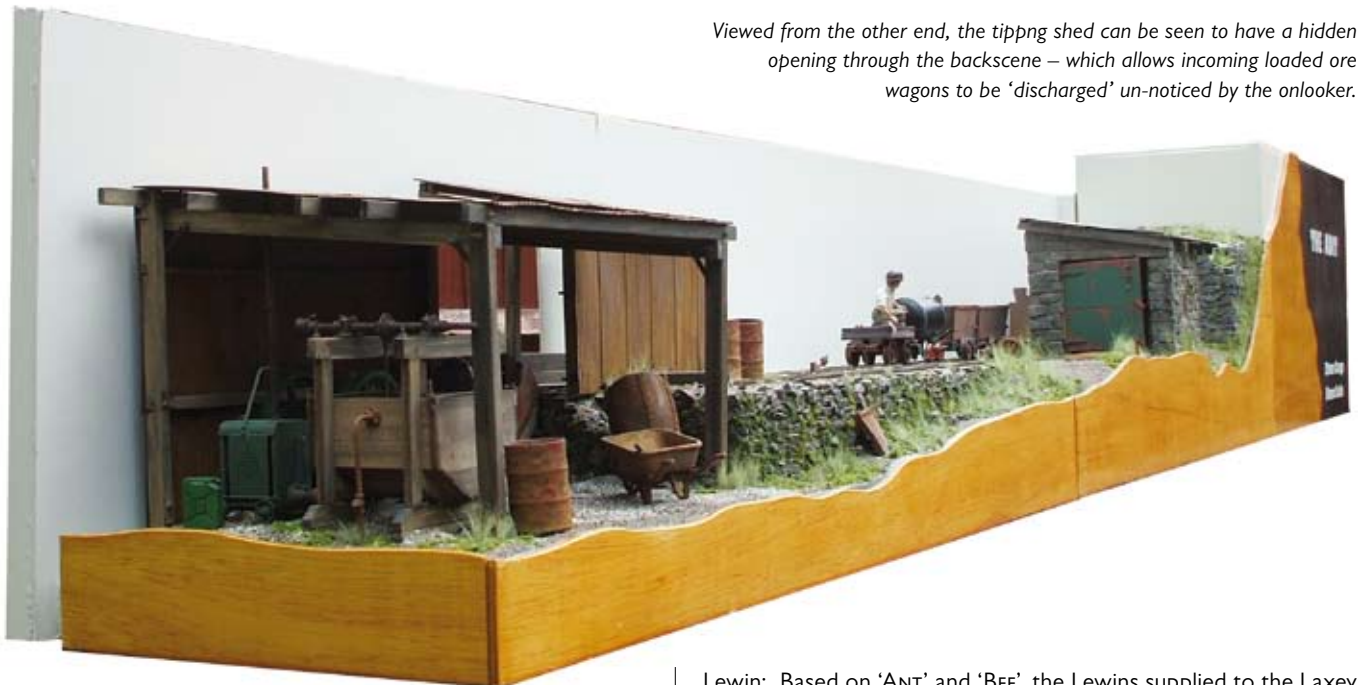
Faced with the variation of gauges of the prototypes I wanted to model, I decided very early on that the gauge was to be 32mm and that I would re-gauge models to suit, a decision I am not sure that I regret. Rail is Peco IL114 flat-bottom rail spiked to wooden sleepers glued directly to the baseboard although a couple of copper-clad sleepers are used in the point work to allow the rail to be soldered down in key areas. Points are actuated by Tortoise point motors. The dummy, but operating, point levers are scratchbuilt. The track is 12-volt two-rail.

Ground cover is graded from an ice cream tub of material taken from the Snailbeach area and is used throughout the layout. Greenery is from the Woodland Scenics range, and the tufts of long grass are an ongoing job - I still plant a few now and then as the mood takes me. The stone retaining wall is constructed from fragments of stone from the long demolished Halvans engine house at Snailbeach. The kibble (mine bucket) is built up from hand-beaten copper segments and is riveted together, although a bit of solder helped. I have actually made two but I could not resist leaving one in polished copper! The old oil drums used for storing ore are resin castings from Back to Bay 6, as are a lot of the detail parts. I still add bits as I find or make them. A future addition will be a battery charger in the loco shed. A layout may be completed but it will never be finished!



THE ADIT

16mm Scale — 32mm Gauge



Viewed from the other end, the tipping shed can be seen to have a hidden opening through the backscene – which allows incoming loaded ore wagons to be ‘discharged’ un-noticed by the onlooker.

Despite the popularity of 16mm, there seems to be a lack of decent figures. The ones on the layout are either heavily modified Tamiya 1:20 scale motor racing pit-crew figures, sadly now longer available, or adapted from 1:20-3 scale figures produced in the USA.

LOCOMOTIVES

A mine of this size would probably been hand-worked, as Perkins Level was, or had one, maybe two locomotives at a push. At present, I have five! The models are scratchbuilt in brass and use conventional 12-volt motors and gearboxes as used by the 4mm standard gauge fraternity. Here they are:

Lewin: Based on ‘ANT’ and ‘BEE’, the Lewins supplied to the Laxey mines in the Isle of Man. The gauge has been altered to 32mm from what should be 25-3mm, but no one seems to notice, or maybe they are being polite. These engines are one of the curious breed that seem to have different proportions when viewed from different photographs, so making a drawing from known dimensions and photos was an exercise in itself. I don’t think I have got it quite right, but then neither have the two replicas on the IoM.

Lishman: A Lishman & Young compressed-air locomotive as supplied to the Durham coalfields. The model was inspired by the recently-constructed full-size replica and a search on the internet found a contemporary, if slightly distorted, drawing of the 1878 original. The driver was meant to perch on a small wooden seat



The ‘Lewin’ steam loco delivering ore wagons to the tipping shed. Note how the driver sits in a well, also the distinctive water tank bolted to the smokebox - a feature of the prototype locos.

Photos: Steve Bell

Like some other compressed air locomotives, this one can be controlled from either end – a good feature for operating in the close confines of a small mine.



on the end of the air receiver, but in practice rode in a wagon. On mine, the driver – a modified 1:20 scale Tamiya Formula One pit figure – squats on a four-wheel flat wagon. Although not a lead mine locomotive, it ticked all the right boxes, i.e. being small, interesting and simple to build.

Orenstein & Koppel: I had no intentions of building this loco, but had previously purchased an odd set of whitemetal detail castings for a small diesel loco at a show. Later, at home, research revealed these castings were intended for an O&K diesel, hence the model. The cab is freelance and was built to hide the fact that I could not get a driver figure to sit on the seat and clear the mine entrance without looking too contorted. The cab merely slides into position

over the standard loco. The driver consists of just the head and shoulders glued to the inside of the cab! This engine was intended to be a stopgap, but is such a sweet runner that it has become a favourite.

The Claytons: A couple of years ago I spent some time working at Geevor tin mine in Cornwall, installing a display in the Hard Rock Museum. Just outside the museum is the 18in gauge surface railway with locos and stock on display. I was like a kid in a sweet shop and came away from the job with a notebook full of dimensions for all sorts of stuff. The two Claytons are a result. Although the gauge has been altered to 24in the frames are still set for 18in so could be re-gauged if required. Some prototype Claytons were

Typical small O&K diesel loco, nicely captured using a combination of kit and scratchbuilt components. Also one of the Laxley mine tubs in close-up.



Photos: Steve Bell

gauge-adjustable. The models appear to be identical, but there are detail differences, especially in the battery boxes as noted on the real things.

WAGONS

Tubs: The principal wagons, there are eight of them based on the Laxey mine examples, but widened to 24in. These were chosen as I could get wheels of the correct diameter; most of the other tubs looked at had very small and commercially-unobtainable wheels. A first was built using photos as reference but just as I finished, a copy of Industrial Railway Record No 102, which contained a drawing of the prototype, came to hand. A batch of three was built to these drawings but with the body width widened to suit the wider gauge – and in my opinion they look better-proportioned than the actual originals. A batch of four more followed. Most of the tubs have now been modified with full-length wooden solebars and dumb buffers to aid the propelling of trains.

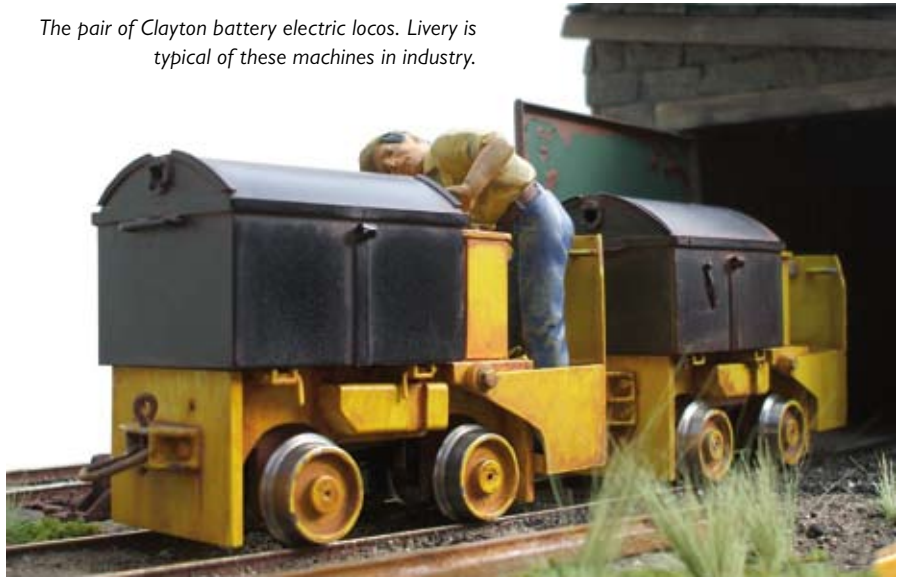
Eimco 12B: The rocker shovel-loader, this machine is very common in mining and tunnelling but is rarely seen in model form. I wanted to make a simplified working model and armed with information gleaned off the internet, tried to build one; several burnt-out motors later gave up. Instead I put in a representation of the air motor and gearbox. The model looked toy like until it was weathered with dry brushing and 'instant rust' solutions. I still hanker after building a working Eimco, and may do so, but probably in a larger scale.

There are and will be other odd wagons built as the mood takes me, closely based on prototypes. Not having too many oddities on the layout preserves the sense of realism.

OPERATION

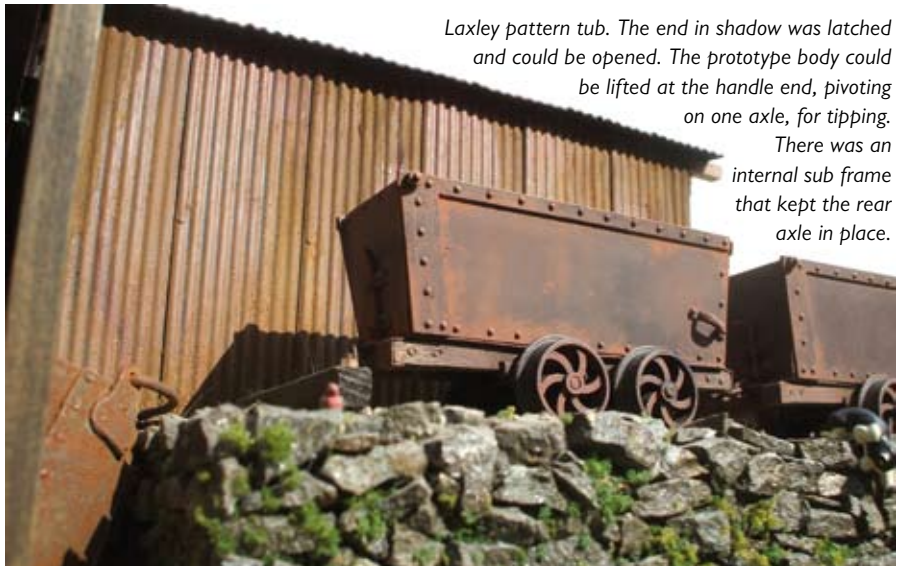
At home the layout sits on its shelf and can be run, but for exhibitions a fiddle-yard is added. This has two sidings and enables the operation of three trains on the layout. Trains normally consist of a loco and two wagons, as the tipping shed and the adjoining siding can only accommodate this length of train. Trains emerge from the adit propelling loaded tubs. These drop-in loads are glued to plywood bases that have concealed magnets within. The tubs are unloaded in the tipping shed through a hole in the backscene using a steel block on a stick that lifts the load out of the tub, which can then be returned to empties in the fiddle yard. The empty train returns down the adit. Running three trains, operation can become quite absorbing, despite the fact that

The pair of Clayton battery electric locos. Livery is typical of these machines in industry.

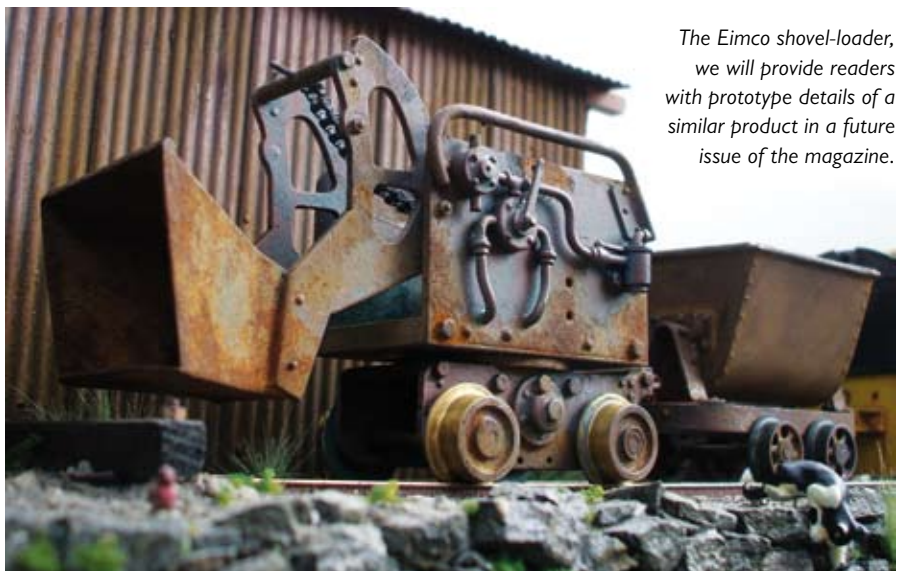


Laxley pattern tub. The end in shadow was latched and could be opened. The prototype body could be lifted at the handle end, pivoting on one axle, for tipping.

There was an internal sub frame that kept the rear axle in place.



The Eimco shovel-loader, we will provide readers with prototype details of a similar product in a future issue of the magazine.



Photos: Steve Bell

the train stays together with the loco. The Lishman can upset the applecart as it has the 'tender' for the driver and with two tubs is too long for the siding, so thought must be given to shunting manoeuvres as it is a sin to send a full train back down the adit to use the spare siding in the fiddle yard!

FUTURE PLANS

Despite my previous comment about never being finished, there will be a time when I run out of things to do on the layout. As the layout runs from an adit to a tipping dock there is no scope for an extension so I already have plans for another mini layout – this time part of a South Wales ironworks plateway, again in 16mm. As the Adit took about five years to evolve, I wouldn't hold your breath!



Photos: Steve Bell



Photo: Steve Bell

TWO LOCOMOTIVES, OF THE FAIRLIE TYPE, have been specially designed and built by the Yorkshire Engine Company, Limited, of Sheffield, to work the traffic on the Bolivian railways. The type was chosen on account of the sharp curves and heavy gradients of the roads, as the locomotives are required to haul heavy trains up gradients of 1 in 35 and round curves of 230 ft. radius, as well as to be capable of making long-distance runs. The general design of one of the locomotives is shown in Figs. 1 and 2 and a photograph of one of the engines.

The boilers are separate, and of the Belpaire type, constructed of steel plates, and having copper fireboxes. They are supported by carrier frames of girder section, at either end of which are fixed strong steel castings, in which the front ends of the boilers rest; the under sides of these castings are accurately machined to form pivots for the bogies.

The bogies each have six wheels, all coupled, the tyres of the middle wheels being flangeless. Each bogie carries a pair of cylinders, fitted with outside Walschaert valve-gear. A steel casting is placed between the frames, being recessed to form a socket for the pivot on the carrier frames. A radial slide is arranged at the back end of each bogie for the carrier frames, and is fitted with suitable springs to minimise any tendency to rock. The difficulty of the reversing-gear, due to one end of the swing-link being attached to the carrier frame, and the other to a moving bogie, is overcome by placing the reversing-shaft at the top of the tanks, thus obtaining a very long swing-link, and consequently a small versed sine; this practically obviates all slip in the die due to movement of the bogie when rounding curves. The two gears are coupled, and actuated with a screw, which is placed in the middle of the foot-plate.

The arrangement of the steam-pipe is a decided improvement on the older type. Hitherto the chief weakness of the Fairlie engine has been the number of expansion and ball-and-socket joints, and the difficulty of keeping them steam-tight. Formerly steam was taken from the smoke-box tube-plate to a casting which projected from the bottom of the smoke-box, and formed together with one end of the steam-pipe a ball-and-socket joint; the other end of this pipe ran to a casting fixed in front of the bogie centre, with which it formed another ball-and-socket joint. This pipe had also a gland-expansion joint to enable the pipe to slide freely. Another expansion-pipe returned from this casting, on the bogie centre, and was flanged at one end to joint a breeches-pipe, which was connected to the cylinders. In the older types one of the chief difficulties in keeping the joints tight was due to the large amount of lateral movement in the ball-joints when the bogie was on a curve, owing to their being placed so far away from the bogie centre. Theoretically, the correct place to put this joint is directly under the bogie centre, there being the least movement in this place, and this fact has been recognised in the present design, in which steam is taken from the side of the boiler by means of a copper pipe, which terminates in a ball exactly under the centre of the bogie, where it fits into a socket on the end of another pipe, which runs direct to the cylinders. As there is only one ball joint, in which, due to its position, there is practically no movement, and as this joint is also asbestos-packed, there is no trouble in regard to keeping tightness. All these pipes are carefully lagged with asbestos, as a preventative to condensation. The exhaust-pipe is fitted with a ball at each end, which works in a corresponding socket in the smoke-box bottom and the breeches-pipe between the cylinders respectively.

The cylinder water-cocks are actuated by a small steam cylinder which pulls on to a shaft, to which all the cocks for one bogie are coupled, and is operated from a cock on top of the fire-box. The sand-boxes are placed on top of the boilers, connection being made to the bogie with flexible pipes.

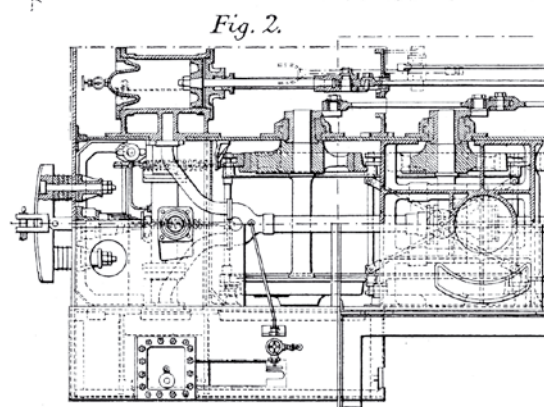
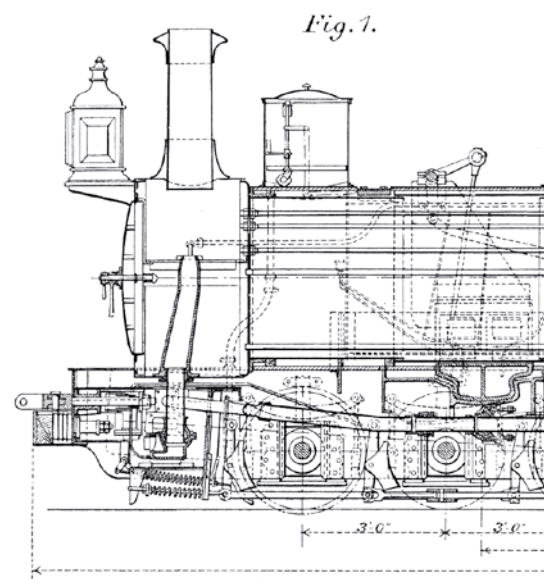
The original Fairlie engines had only one double boiler, which, due to the exceptionally large dimension over tube-plates, gave a considerable variation of the water-level when the engine stood on an incline; this is reduced to half by using two boilers, with the additional advantage of a roomier cab, which was formerly placed at the side of the boilers. The tanks are continued under the platform, and the centre line of the boiler is kept very low, being 4 ft 10½ in from rail, in order to keep the centre of gravity of the engine as low as possible, owing to the small gauge.

The following are the principal dimensions of the engines:

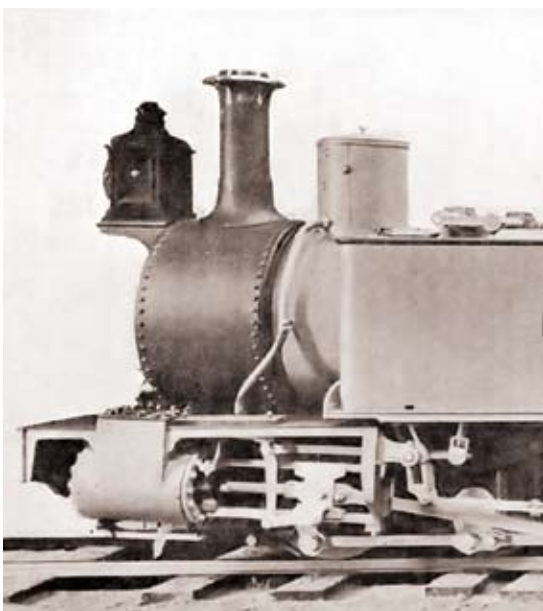
Gauge	2 ft 6 in
Cylinders	12½ in by 16 in stroke
Wheels	2 ft 6 in diameter
Centre to centre of bogies	21 ft 10½ in
Total wheel-base	29 ft 4½ in
Rigid wheel-base	6 ft
Boiler pressure	160 lb. persq. in.
Diameter of boilers	3 ft 5½ in
Number of tubes in each boiler	106
Length of each boiler barrel	9 ft 3¾ in
Total heating surface	1046.88 sq. ft.
Total grate area	21.66 sq. ft.
Capacity of tanks	1500 gallons
Capacity of coal-bunker	2 tons
Weight, light	41 tons 4 cwt. 2 qr.
Weight in working order	52 tons 2 cwt. 0 qr.
Tractive force	22,666 lb.
Centre line of boiler from rail	4 ft. 10½ in.

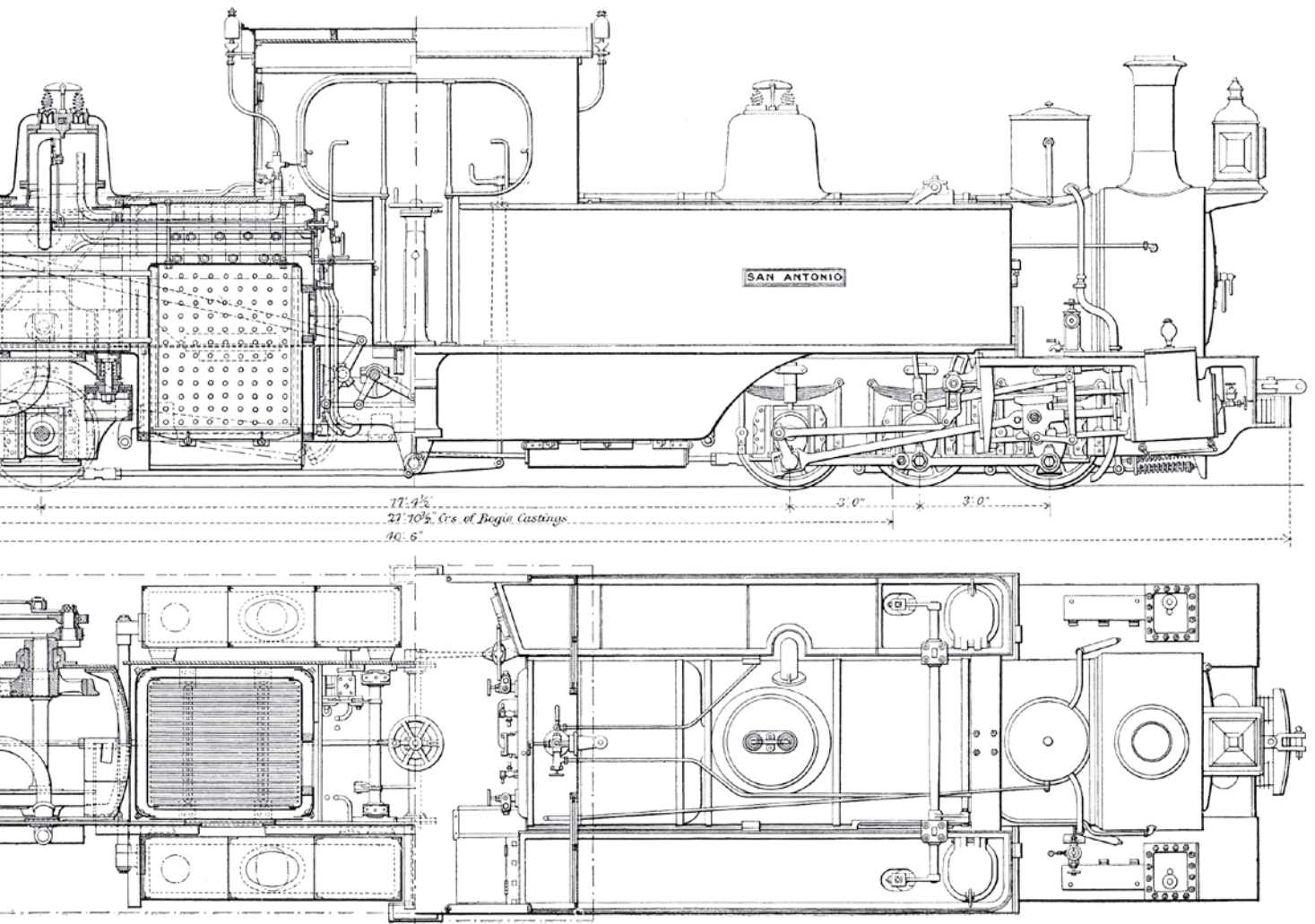
ENGINEERING – June 8, 1906

The pair of locomotives actually worked on the Junin Railway – serving the nitrate area in Chile, despite the reference to Bolivia in the original article. See Also: The Locomotive, for 1907, page 8 and Articulated Locomotives by Lionel Weiner, 1930 page 153. He correctly notes their use on the Junin line. They were oil fired – so the central brake pillar on the footplate was not the problem it might first appear.



Fairlie locomotives





ive for the Bolivian railways (2ft 6in Gauge)

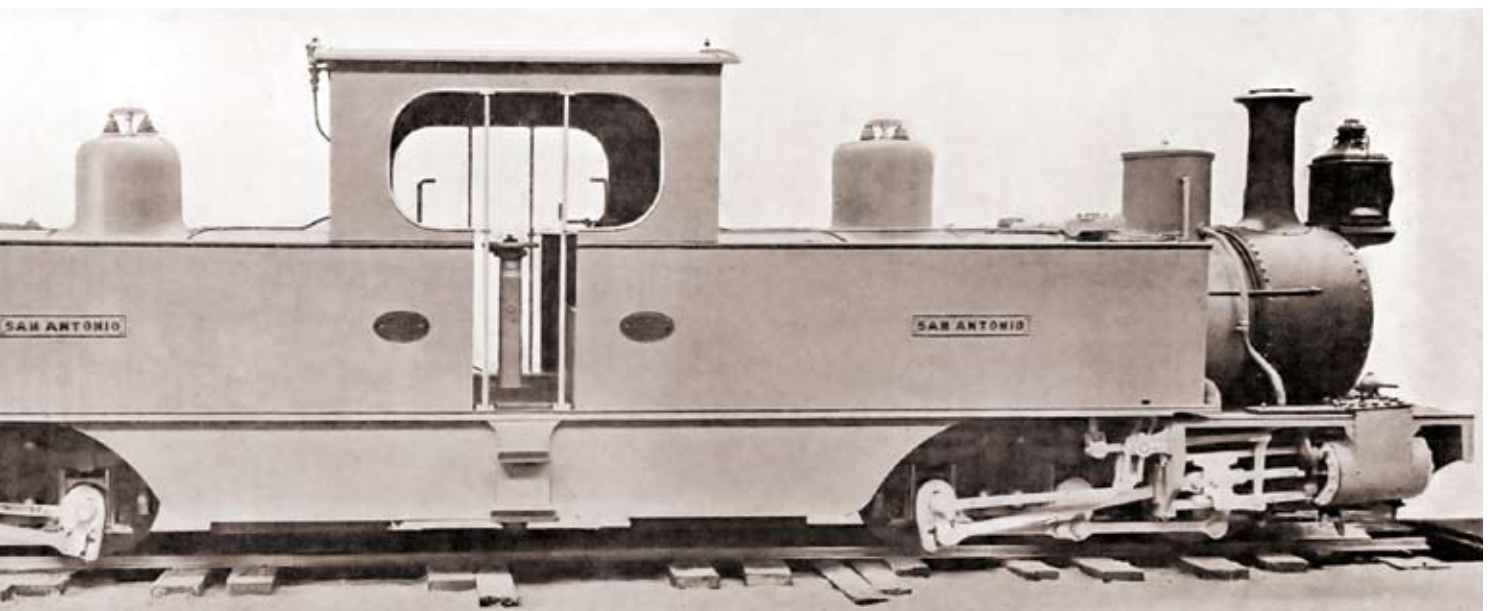


Photo: and drawings: ENGINEERING magazine

The Elements of Weathering

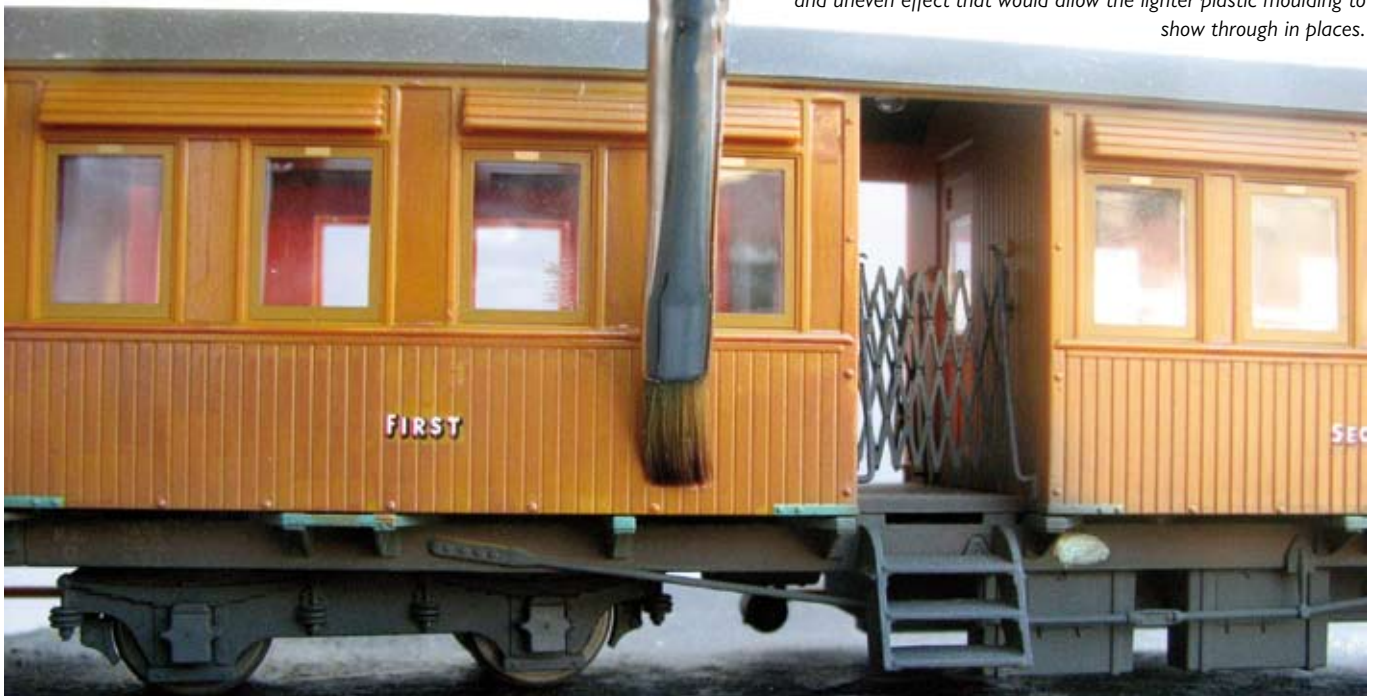
In this second and final instalment, TIM SHACKLETON explores hand-finishing techniques that complement and expand on the basic airbrush treatment:

AIRBRUSHES ARE USEFUL things but, in a weathering context at any rate, the smooth and even finish they impart is not always appropriate. Real weathering is often patchy, streaked and irregular. An airbrush is of limited use for this kind of detail weathering, however good it is on coach roofs. Where appropriate, we can use simple tools and hand finishing techniques that complement and sometimes even subvert the bland perfection of an airbrush.

Right: As we left things last time, weathering of the engine unit was well advanced but the railcar's matchboarded sides were looking very plasticky – an obvious contradiction that needed to be remedied since I was looking to create a careworn, down-at-heel look on the woodwork. Replicating varnished wood effects has generated some mind-numbingly technical, complex and tedious techniques over the years, but it's possible to opt for a more artistic approach that takes a fraction of the time.



Below: The first stage of my lazy man's approach to shabby woodwork is to brush on a thinnish coat of Revell No 80 Gloss Tan, using a flat No 6 shader worked vertically. The paint has intentionally been stirred with less than total thoroughness because I wanted a subtly streaky and uneven effect that would allow the lighter plastic moulding to show through in places.



Photos: Tim Shackleton

Top right: Having allowed 24hrs for drying (essential, otherwise the painted wood finish will lift at the first breath of white spirit) it's time to add false shadows in the matchboarding. Using the tip of a No 3 candle-flame brush I've picked up a spot of Revell No 8 Charcoal Grey and dipped it in thinners before touching it against the top of each plank. Defying gravity, the paint flashes along the groove between boards and immediately creates an impression of depth. This hugely satisfying technique is the same as that used by scenic modellers for adding mortar courses in brickwork, and how military modellers delineate aircraft and armoured vehicle panels.

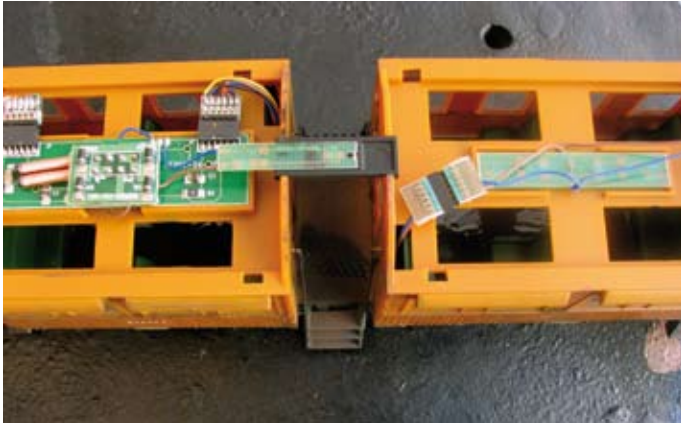


Left: By careful brushwork I was able to paint around the class brandings on the bodysides, which I wanted to retain. You can see that the plastic sides are already starting to look a lot more like wood – or rather, the eye has been fooled by a few hints into thinking it is seeing varnished wood. I've added some of the thinned 'shadow mix' to the panelling above the waistline to emphasise relief and also simulate dirt build-up. Those prominent bolts at the bottom of the sides will need touching in by hand later.

Right: I am aware of areas where there's a bit of unevenness and overspill on the matchboarding, so I'm carefully retouching these individual planks with a No 0 brush. Weathering by hand takes time but it does allow you to build up effects and introduce a little artful variation of tone. You can sense here how thin the sides are, which makes them semi-translucent in any kind of backlighting. Overpainting gives them a much more solid appearance. Note also shadowing applied to the over-window vents.



Photos: Tim Shackleton



Above left: I'm not a big fan of heavily detailed coach interiors but I felt the floor – moulded the same startling eau-de-nil colour as the seats – could benefit from a lick of paint. To get at the inside you need to prise off the roof, then run in a liquid wash of nondescript dark grey. I was surprised at the difference it makes; viewed through the windows, the interior is now far more three-dimensional. Above right: The main point of taking the roof off, however, is to get at the matchboarding of the inner vestibule. This is treated exactly as the sides and outer ends.



Below: With the brushwork pretty well complete on the bodysides, there's a pronounced but not overstated sheen on the matchboarding that's getting close to the effect I was after – a finish that's way past its best and needs rubbing down to bare wood and revarnishing. Now we move onto underframe dirt. In the first part of this article you saw how I airbrushed this initial coat of underframe grime. Below floor level most rail vehicles are coated in a mixture of brake-block dust and dirt thrown up from the track. It's a fairly solid brownish-ochre colour with a subtle tinge of green and for very many years was much the same all over the world. In more recent times, with differing types of brake block, the underframe dirt seems to have assumed more of a grey-green hue.



Photos: Tim Shackleton

Right: To add a subtle modulation of tones to the underframe I'm brushing on some Dark Mud from the superb MIG range of weathering powders.

The best tool to use for the initial application is a stiff brush – in this instance, a clapped-out No 1 sable, working with a stabbing motion. The bogie has already been treated. Do the same for the entire underframe, including the engine unit. A little of the previous shade needs to show through but beware of adding too many nuances of colour, otherwise it starts to look too busy and the weathering begins to draw attention to itself, which is the last thing we want. You can overwork weathering effects just as easily as you can overdo them. A simple, restrained approach normally does the trick.



Left: Now I've switched to the slightly deeper shade that MIG call Track Brown (though with its distinct purple tinge it perhaps looks more like old rust). I'm applying it sparingly to parts that I know from prototype observation have this richer, more intense colour – in this instance the leaf springs. A speck or two was also brushed onto the battery box detail, just to emphasise the relief.



Right: The initial weathering mix with which the model was sprayed contained a high proportion of Humbrol's Metalcote Gunmetal. By burnishing it with a soft make-up brush, the front and rear cowcatchers acquire a wonderfully metallic appearance.

Photos: Tim Shackleton



Above left: More Gunmetal, but this time the MIG powdered variety applied in generous quantities to the steps, prior to working in with a soft brush. The steps are of course wooden on the prototype but the Gunmetal, floated on over the top of the airbrushed weathering, gives the authentic look of well-worn oil-soaked timber. Unlike, for example, an unpainted fence, wooden steps and footboards do not go a pale silvery-grey with age but assume quite a metallic appearance, especially where the light catches the edge. Above right: I did the same with the steelwork of the cab steps and footplate, burnishing the powder until it shone. This is the kind of detail weathering that moves a model beyond the 'weathered



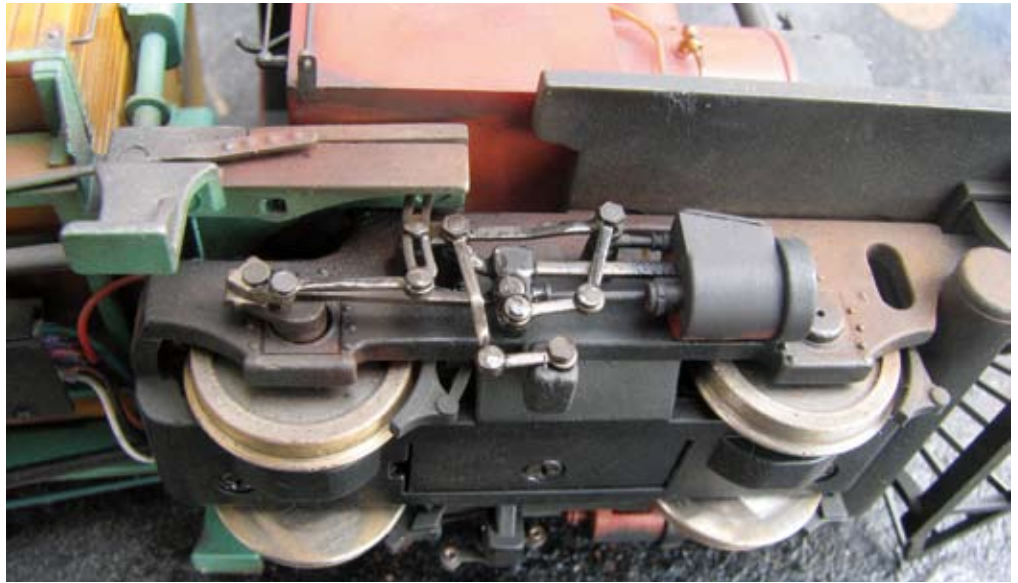
loco' category and into the realm of something that approximates to the appearance of the prototype.

Below: Over time axleboxes become caked in oil which dries to a grey, pancake-like crust. I find the best way to represent this is with Humbrol's Metalcote Gunmetal, but this time I'm using the dried-out residue at the bottom of an empty tin. With an old brush moistened with thinners I dab it on the axleboxes, complete with crusty lumps. Fresh oil can be represented by a touch of gloss black over the top, just as with the Westinghouse pump in Part 1.



Photos: Tim Shackleton

Right: The cylinders have also been Gunmetalled and await polishing (fingertip or cotton bud). Real locomotives, however well-weathered, are always a mixture of matt and shiny surfaces – and all stages in between – and one area that always has an oily gleam is the motionwork. This is simply gloss varnish, the viscous stuff from a tin that is half empty and starting to turn distinctly gloopy. Despite appearances it will level itself off as it dries.



Left: With the end reasonably in sight, I decided the matchboarding didn't after all have quite the level of sheen I wanted so I overpainted it with a thinnish coat of Johnson's Klear floor polish. You can apply a second or even a third coat but I felt one was sufficient here. I've been using this stuff for years and while much has been said of the recent new formulation, it seems to do exactly the same job as it always has.



Right: The engine unit – or rather, the red-liveried parts – had always looked a little flat so I brushed some Klear on to these areas too. The polish goes over the weathering, to give the impression of blackened paintwork religiously polished. Remember that the colours of red, green and dark blue-liveried locomotives becomes darker over time as oil and dirt are rubbed in.

Photos: Tim Shackleton



Photo: Tim Shackleton

Above: Using the airbrush once again, I misted some Charcoal Grey over the roof vents to bring them into line with the rest of the bodywork. I took advantage of the Iwata's extraordinary delicacy of control to add further false shadows to the bodyside panelling to intensify the effect.

So there we have it – a portrait of a steam railcar in everyday service, cleaned from time to time (if not very well) but still showing clear signs of being a working machine, every bit of weathering exhibiting an obvious cause and point of origin. We've come a long way from

the box-fresh Ixion model but the techniques involved are far from esoteric and the skills equally undemanding. As ever, observing and understanding what happens with the prototype is a good 80 per cent of the battle.



Ixion's delightful little Australian railcar has obvious echoes of British engineering practice on railways at home and abroad. Leaving aside the fact that it's modelled to 2ft 6ins gauge, what kind of alternative setting would look most appropriate? I thought of something colonial – Jamaican perhaps – but perhaps we needn't go so far afield. Although the Welsh NG lines are clearly a non-starter, and the Southwold a bit too folksy, something a bit more grown-up like the Campbeltown & Machrihanish or the Leek & Manifold would be far from implausible as the owner of a unit such as this. Robert Gratton's consummate history of the latter railway (RCL Publications) provided a shot of the level crossing and underbridge between Wetton Mill and Swainsley, from which starting point a little creative image-making produced this intriguing result.



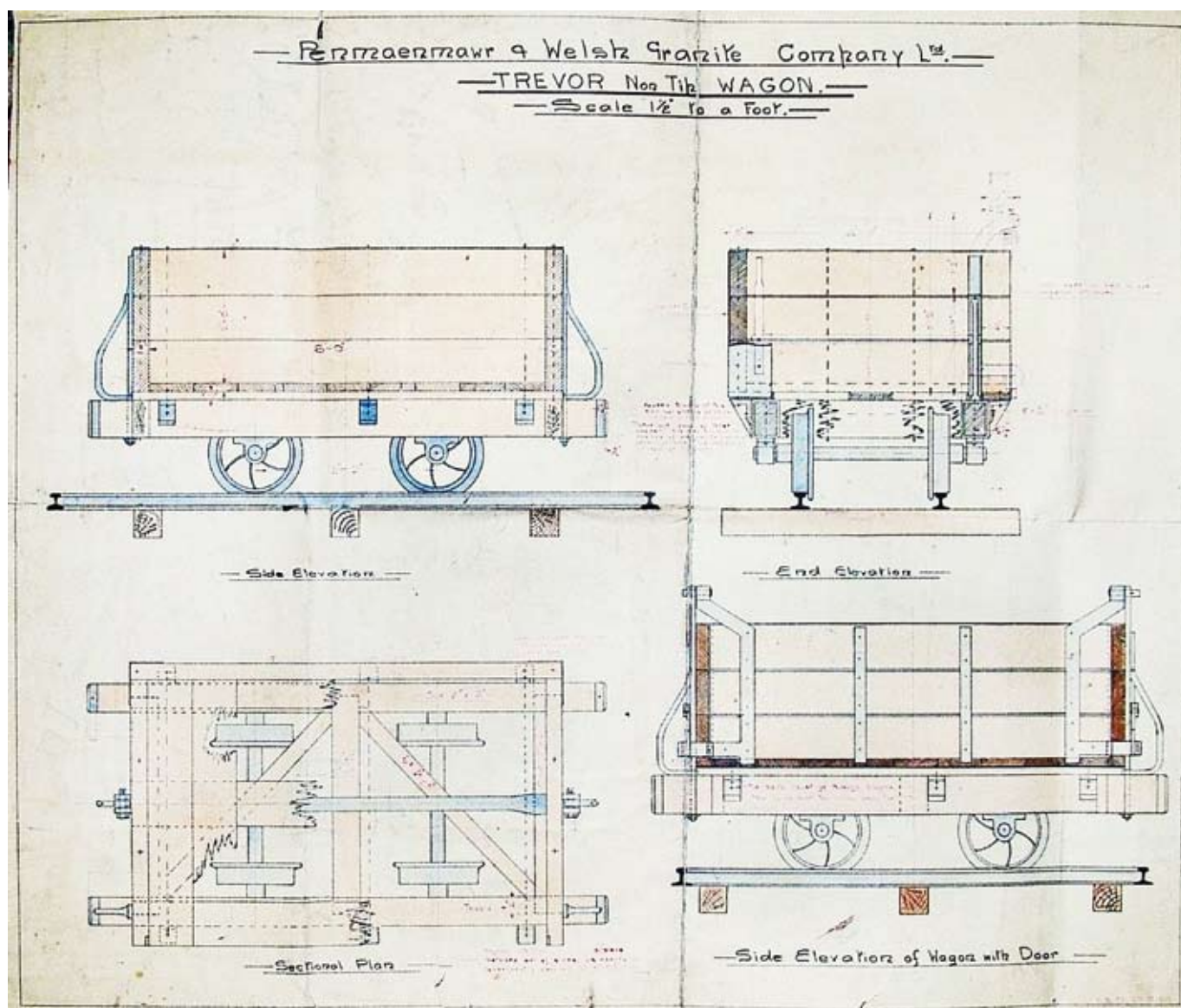
Photo: Collection Philip Hindley

TREVOR QUARRY IS SITUATED in the Lleyn Peninsula of North Wales on the westernmost of three peaks that form Yr Eifl Mountain, also known by its anglicised name as The Rivals. The stone at Trevor is granite and occurs in different colours of pink, grey and blue-grey, the latter being very suitable for monumental and architectural work. Among the more unusual applications for the stone were the production of curling stones and rollers for paper and paint mills and cocoa grinders.

The origin of Trevor Quarry lies in the proposals to establish a port for the Irish mail service to Dublin in the early years of the 19th Century, when nearby Porth Dinllaen on the Lleyn Peninsula was proposed as an alternative to Holyhead. Samuel Holland, better known for his involvement in the Festiniog slate industry, foresaw the need for large quantities of stone for the new harbour works and opened the Gwylwr Quarry, close by the proposed site at Porth Dinllaen. The harbour scheme was of course not proceeded with,

but Gwylwr Quarry remained in production for about 90 years. After opening Gwylwr Samuel Holland also noted that Yr Eifl Mountain, some 5 miles to the northeast, contained a source of equally good stone and he hired some settmakers from Penmaenmawr to start a quarry, which was named after his foreman Trevor Jones. The quarry opened in 1850 and subsequently developed in a series of levels, or banks, eventually totalling nine, all connected by rope-worked inclines. In 1855 Samuel Holland sold the quarry to Messrs

Above: Tipping stone from mill wagons into the mill chute on I Bank. Prior to the early 1950s breaker wagons carrying stone hand-loaded at the quarry faces would have been tipped here, but by this date the mill wagons were used to carry stone which had passed through the primary crusher. There is another tippler on the right of the photo; there was a total of three tipplers on each side of the chute. Note the derrick alongside the Hunslet diesel locomotive, probably used to recover any wagons which accidentally followed their loads into the chute!



Drawing: Collection Philip Hindley

Hutton and Roscoe, trading as the Welsh Granite Company. In 1911 the Welsh Granite Co. Ltd. was amalgamated with the Darbishires and Brundrit Quarries at Penmaenmawr to form the Penmaenmawr & Welsh Granite Co. Ltd.

Stone was despatched from the quarry by sea, the boats being beached and then loaded at low tide. The beach nearest to the quarry must have been too steep and exposed to the prevailing westerly winds for this operation, so a 2ft gauge railway approximately 1½ miles long was constructed from below the quarry to a loading point on the less steeply-inclined and more sheltered beach to the northeast, where the tracks extended onto the beach below high water to facilitate the loading of boats. Later a stone pier was provided where the setts could be stacked ready for loading. The quarry was connected to the railway by an incline worked by chains, which were constantly breaking and damaging the wagons. In 1866-7 a new longer ropeworked incline was constructed from the quarry to connect with the railway, and this reduced the length of the level section by more than half. At the foot of this incline were later established the quarry offices and workshops. In 1873 a De

Winton 0-4-0 vertical boilered locomotive was acquired to replace the horses used on the railway, a second similar locomotive being acquired in 1876.

Originally the main production was for paving setts, which were dressed by hand on each quarry level in long rows of open-fronted sheds before despatch down the inclines. However as the use of setts for road making declined production turned to crushed stone and a crushing mill was constructed circa 1914 on the bottom level of the quarry, known as 0 Bank, with stone fed in from 1 Bank above. To transport the crushed stone from under the mill hoppers a new arrangement of the main exit incline was required. As constructed in 1866-7 this extended from 1 Bank down to the pier line, a distance of approximately 1000 yards, with access to 0 Bank being by turnouts off the incline. This incline was now split into two separate inclines with a new brake drum part way, appropriately named New Brake, and a new incline constructed from New Brake to 0 Bank alongside the existing incline. From the top of this new incline tracks led directly under the mill hoppers where the wagons were loaded, and it also served a stone factory which was later

Right: A rather battered example of a breaker wagon photographed on 5th August 1967 on the last remaining few yards of track, possibly the last wagon ever used in Trevor Quarry. The missing top end plank reveals the two tie bolts which run vertically through the planks and headstock. Note that this wagon has holes in the disc wheels.

Page opposite: Trevor Wagon drawing dated 1920.



Photo: Philip Hindley

established on 0 Bank with stone saws and polishing machines. To handle the increasing output of crushed stone, a new timber jetty was built at right angles to the existing stone pier in 1914 and this enabled the loading of ships up to 1,200 tons. In 1925 a 3000-ton reinforced concrete storage hopper fed by an inclined conveyor from a wagon tippler was built on the stone section of the pier, to speed the loading of ships. Three tracks ran under the hoppers for loading wagons, which were then run out through some rather complicated trackwork at the right-angled bend onto the timber jetty. Loaded wagons ran along tracks on the outside edges of the jetty to moveable chutes running on rails to direct the stone into the ships' holds and empty wagons were returned to the hoppers on tracks in the centre of the jetty.

All stone was hand loaded at the quarry faces into rail wagons until about 1950. Mechanical loading was then introduced with a diesel-powered face-shovel and Aveling-Barford dump trucks, and all stone production concentrated on 5 Bank. The dump trucks fed the stone into a new primary crushing mill, built on 5 Bank in 1950-52, which reduced the larger size stone loaded by the face-shovel into a size that the existing mill could accept. Initially stone from the new primary mill was transported to the existing mill by rail down the inclines. However in 1953 a new system was introduced in which the stone travelled down by gravity in a system of chutes to a loading station on 1 Bank, from where the stone was taken the short remaining distance to the mill by rail transport. This continued until 1961, when dumpers replaced rail haulage on 1 Bank from the loading station to the mill. Rail transport was retained for a time after 1950 on 5 Bank for stone required for monumental work. A new stone sawhouse was built on 5 Bank at the same time as the primary mill and sawn blocks of stone were then transported down the inclines to the stone factory on 0 Bank.

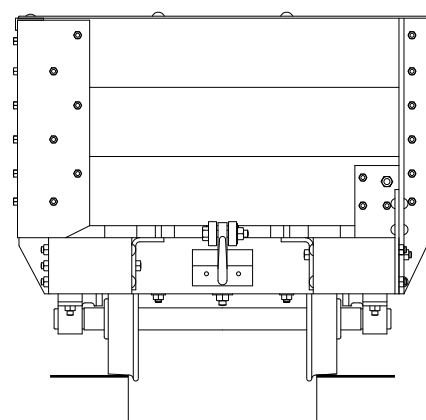
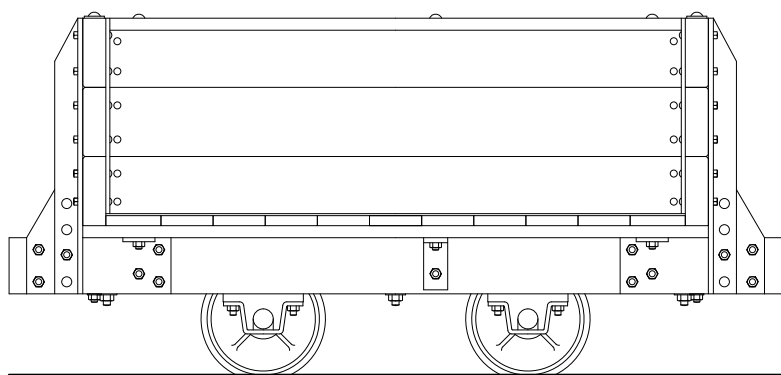
In 1959 the inclines from the mill hoppers on 0 Bank to the office yard and the railway to the pier were converted into a road. This resulted from the successful demonstration of a Foden dump truck

on the 1 in 3·7 gradient of the inclines. Rail transport remained for the short distance from under the pier hopper to the pier until that was replaced by a conveyor belt in 1962. Most of the remaining track in the quarry was removed about 1961. By 1967 the only track left was a short length below 1 Bank used for moving equipment in and out of the mill.

THE WAGONS

An inventory of the quarry lists a total of 242 wagons of four main types in 1952, about the time that mechanical loading was introduced at the quarry face which marked the start of the contraction of the rail system. The majority of the wagons listed in the inventory were Breaker Wagons, totalling 138, which were open wagons with fixed ends and one fixed side, the other side being open. Similar wagons were used at Penmaenmawr Quarries on the 3ft gauge, although with wheels outside the frames instead of inside as at Trevor. They were used for hand loading stone at the quarry faces and carrying finished setts, the open side facilitating easier loading. In the earlier years when production was mainly setts the smaller size material produced at the quarry faces would have been regarded as waste and carried directly to the tips on each level in rubbish wagons. However when production turned to crushed stone more of this material would have been taken to the mill in the Breaker Wagons and the method of loading was to pack the larger size stones across the open side of the wagon, then load decreasing sizes of stone behind, finally loading the smaller material in the remaining space up to the fixed side. The second most numerous wagons were the Mill Wagons, totalling 60, which were basically a Breaker Wagon with a top hinged door on the open side and used to carry the crushed stone from the mill. They were emptied at fixed tipping points by means of a hinged section of track, which tilted the wagon through about 40 degrees to discharge the load.

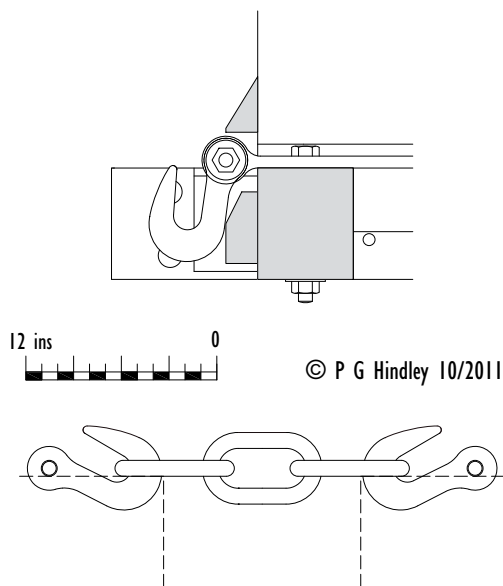
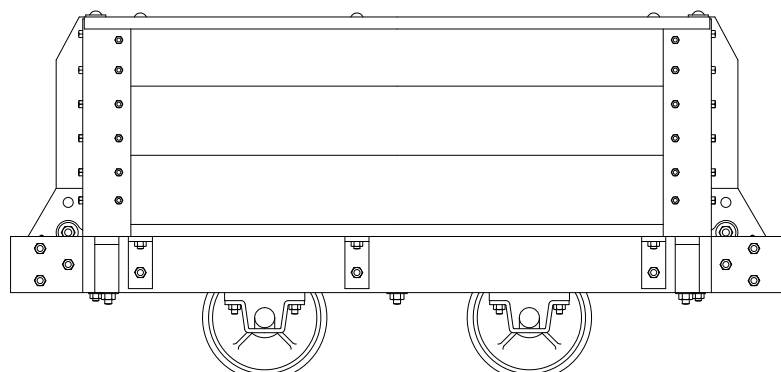
Early wagons were somewhat smaller than the wagons existing at the closure of the system, and note that in the photo on page 311



TREVOR QUARRY BREAKER WAGON

SIDE & END ELEVATIONS

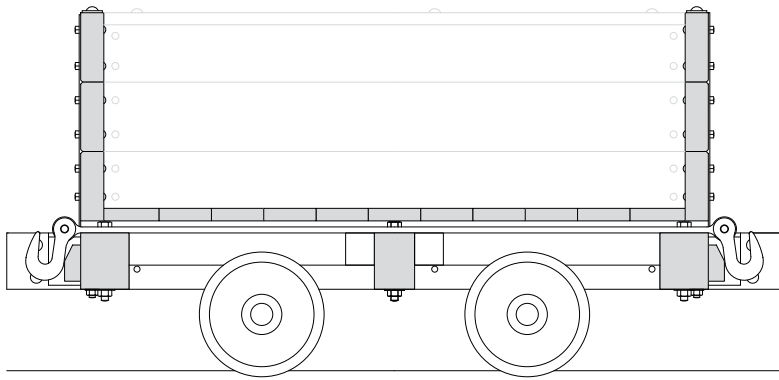
© P G Hindley 9/2011



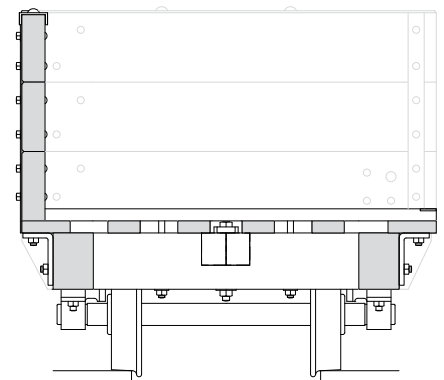
TREVOR QUARRY WAGON COUPLINGS

of REVIEW 87 the wagons behind ISABEL have bodies no wider than the frames. A drawing, unfortunately undated, shows a wagon with 8in deep x 6in wide timber frames 7ft 6in long and 3ft 9in wide overall; rather large 18in diameter wheels on a 2ft 9in wheelbase and 3plank bodies 6ft long x 2ft 2in high x 3ft 9in wide. The optional side door is shown as a sheet of $\frac{3}{16}$ in thick steel plate edged with 2in x 2in angles all round. A later quarry drawing of 1920 (see page 34) shows a somewhat larger wagon with provision for a side door in timber rather than steel plate. Frames were 7in deep x 5in wide timber 7ft 10in long and 3ft 7in wide overall. Wheels were now 14in diameter still on a 2ft 9in wheelbase, and bodies were 6ft 6in long x 4ft 3in wide x 2ft 3in high overall. 12 sets of ironwork were supplied in 1920 and 50 sets in 1922, so presumably some of these wagons were built at the quarry or in the company's much larger workshops at Penmaenmawr.

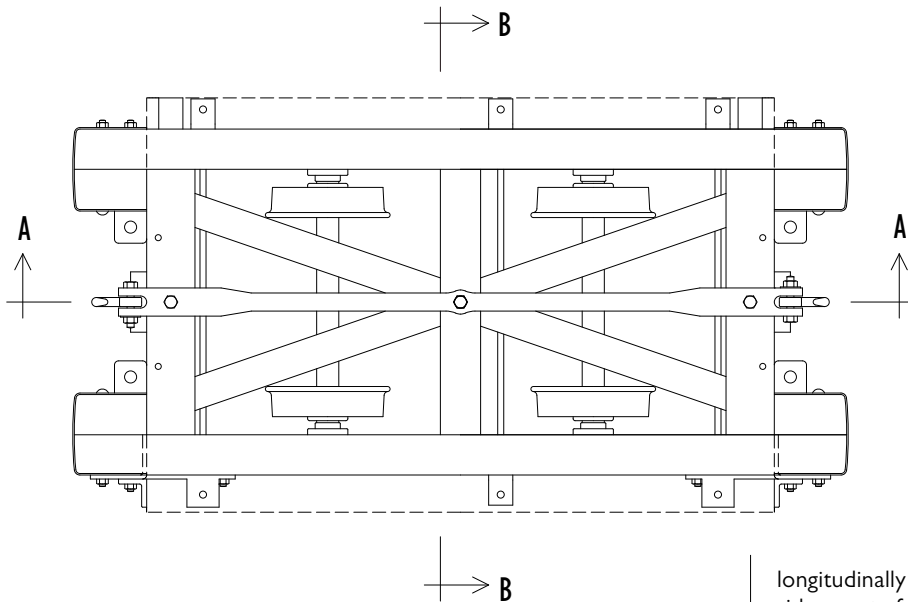
The 1920 drawing seems to have been developed into the final designs of approximately similar size but with detail construction differences in Birmingham Railway Carriage & Wagon Co.Ltd. drawings of the Breaker Wagons dated 1930 and the Mill Wagons dated 1931. Construction details of these wagons, mainly taken from the BRC&W Breaker Wagon drawing, are as follows. Wheels were 14in diameter and of disc pattern, some plain with four ribs on the front face and some with holes, on a $2\frac{3}{4}$ in diameter axle ($2\frac{1}{2}$ in diameter at the journals), and with the same 2ft 9in wheelbase of the earlier wagons. Axles were carried in cast iron bearing pedestals, as illustrated on page 315 of REVIEW 87, and retained with a steel strap. The frames were 7in deep x 5in wide timber, 8ft long and 3ft 7in wide overall, with three cross members – two headstocks 7in



Section A - A



Section B - B



TREVOR QUARRY BREAKER WAGON

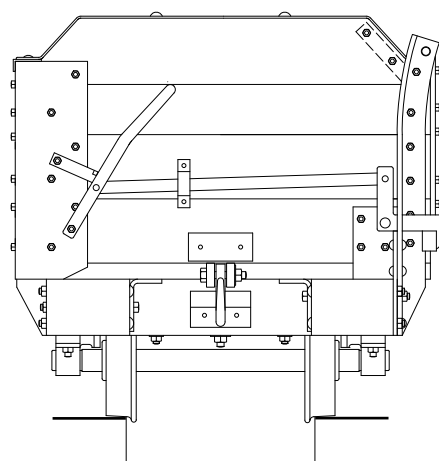
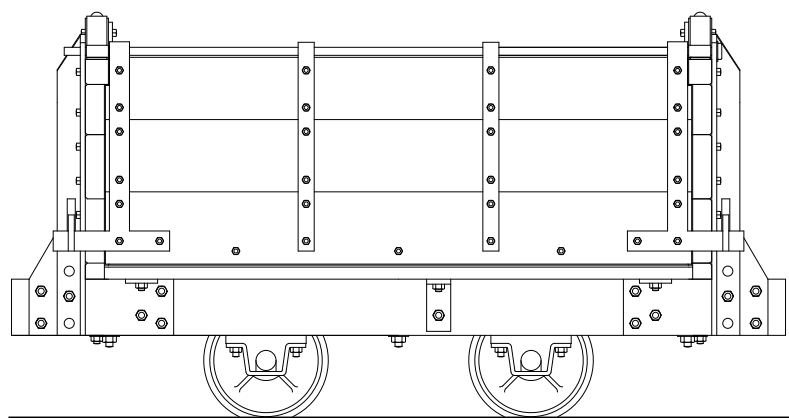
PLAN & SECTIONS

© P G Hindley 9/2011



deep x 6in wide at 9in in from each end and one 7in deep x 5in wide at the centre of the frame. The 9in of frame extending beyond the headstocks was doubled in width to give a 10in wide buffer. In each of the two spaces between the frame cross members were two diagonals of 4in x 4in timber in a V-shape, meeting each side of the centre cross member to form an overall X-shape in plan and the frames were tied together by three $\frac{3}{4}$ in diameter tie bolts passing through the side frames with a steel angle bracket on each end. The drawbar was fixed on top of the frames with outward facing hooks pivotted to each end. Wagons were coupled together with three links of loose chain and this arrangement made coupling and uncoupling quick and easy – with the couplings slack the chain could be dropped over the hooks or lifted off with one hand, especially useful at the top of inclines where the wagons had to be quickly detached from the rope. Also, to aid this operation, a block of wood was fixed to the headstock to keep the hook slightly raised and on some wagons a tapered piece of wood was fixed to the end above the hook pivot to prevent the chain link from snagging on the pivot as it was dropped on to the hook. Wagons were additionally coupled together on inclines with two light chains with hooks on each end, which were attached to angle brackets on the inside face of each wagon buffer. The wagon floor comprised two layers of $1\frac{1}{2}$ in thick planks. Directly on top of the frame were planks running

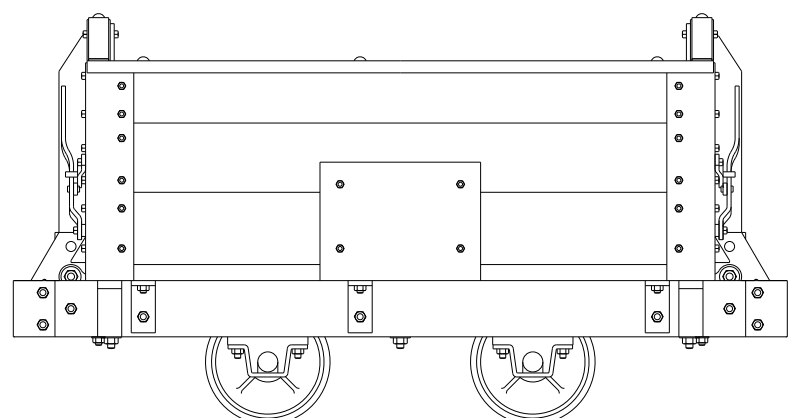
longitudinally the 6ft 6in length of the body – two 6in wide on each side, most of which was overhanging the frame although supported by the angle brackets at the end of the frame tie bars, then four 4in wide with gaps in between. The side and ends then sat on top of these longitudinal planks with the second floor layer of transverse $1\frac{1}{2}$ in thick floor planks inside. Side and ends were formed of three $2\frac{1}{2}$ in thick planks and the overall body width was 4ft $3\frac{1}{2}$ in. The side was capped with a length of $3\frac{1}{2}$ in x $1\frac{1}{2}$ in channel retained by three tie bolts passing vertically down through the planks and connecting with the angle brackets at the ends of the frame tie bolts. The ends were capped with steel strips with two tie bolts running down through the planks and headstocks. Height of the body was 2ft $3\frac{1}{2}$ in from top of end capping to top of frame. To protect the exposed ends of the floor planks on the open side a 2in wide x $\frac{1}{4}$ in thick steel sill plate was rebated into the top edge of the planks. Two tapered wooden blocks were attached to the frame on the closed side near the corners of the body to prevent the incline rope from snagging under the body at the incline landings and on the open side the bottom of the vertical $3\frac{1}{2}$ in x $3\frac{1}{2}$ in steel angle end supports were tapered for the same purpose. These angles were rivetted to $\frac{1}{2}$ in thick steel plates 18in long which in turn were bolted to the frames. An upward extension of the plate was bent through 90 degrees and bolted to the end planks, and a further section was bent horizontal to form the angle bracket at the end of the frame tie rod to support the wagon floor. The finish was specified as two coats of lead colour



TREVOR QUARRY MILL WAGON

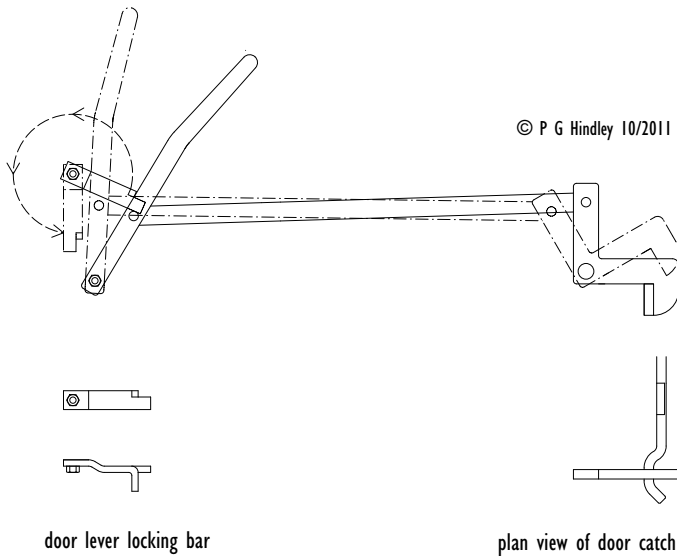
SIDE & END ELEVATIONS

© P G Hindley 9/2011



The door side of mill
wagon No. C-92
photographed on
O Bank 4th April 1963.

Photo: Philip Hindley

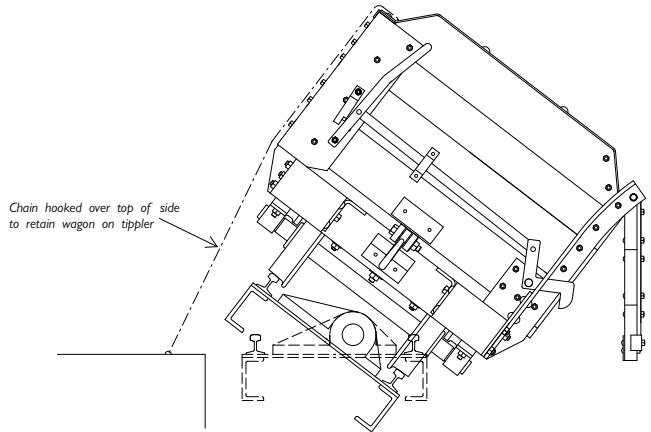


TREVOR MILL WAGON DOOR LOCKING LEVER



with the inside of the body not to be painted and the materials as follows: solebars, headstocks, crossbars, diagonals and buffer blocks to be of english oak; side and end sheeting to be of spruce; floor boards to be of elm or poplar. Contrary perhaps to an initial impression of crude and 'homemade' these were in fact extremely sturdy and well constructed wagons.

The Mill Wagons had a nominal capacity of 2¾ tons and were provided with raised ends to prevent spillage on the inclines, the increased height of the ends from the top of the capping to the top of the frames being 2 ft 8¾in. The door planks were 2in thick and fitted in a ½in recess in the end planks to form a seal at the ends of the door. A strip of steel was fixed along the inside bottom edge of the door to protect the timber when the load was tipped, otherwise the inside of the sides and ends were not lined with steel. They were fitted with a steel floor plate instead of the transverse floor planks of the Breaker Wagons and there was a different arrangement of the first layer of planks on top of the frames with

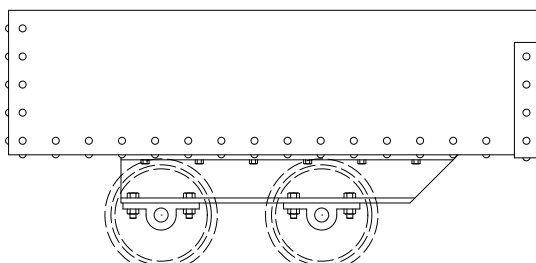


TREVOR QUARRY WAGON TIPPLER



© P G Hindley 10/2011

no visible gaps between them. All the Mill Wagons were fitted with a rectangular steel plate of varying size, some obviously secondhand from other uses, at the bottom of the fixed side. When the wagons were tipped a chain anchored to the ground at the edge of the wagon tippler was hooked over the steel channel capping at the top of the fixed side and this was stretched to its full extent when the wagon reached the fully tipped position, preventing the wagon from overbalancing and following the load. In the fully tipped position, probably reached with an abrupt stop, the chain would be bearing on the bottom of the side planks and thus these plates were provided to protect the timber. Up to the early 1950s these wagons were used exclusively to carry crushed stone from the mill and they were numbered with a 'C' prefix in a rectangular painted area at the top right hand corner of each side, which also carried what appears to be an inspection or repair date. When the new primary mill came into production they were then also used to carry stone from that mill to the existing mill, at first down the inclines then later from the loading station on I Bank. Carrying this larger sized stone which was mechanically loaded would involve rougher usage and from photographs it appears that the wagons used for this traffic were fitted with a steel sheet lining to the sides and ends and received numbers with an 'A' prefix. Some wagons were converted into flat wagons to carry blocks of stone for the masonry works by the removal of the sides and one or both ends but they were not



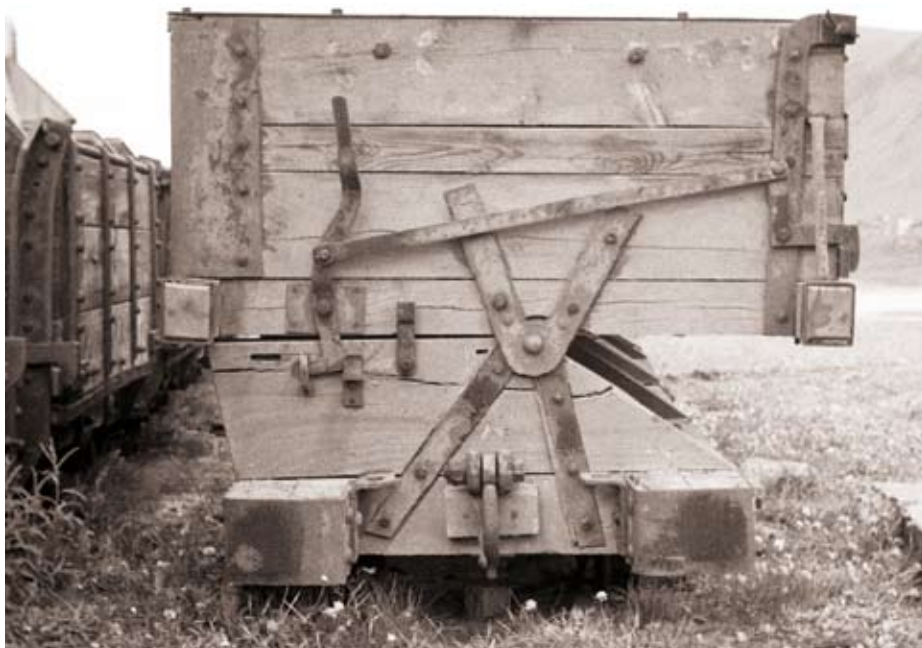
Note: details of wheels unknown

TREVOR QUARRY RUBBISH WAGON



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Right: End view of a tipping wagon photographed on 21st June 1964. This shows how the body was mounted slightly off-centre to the frame. The lever which releases the body and the door was normally locked in position by the hinged bar to the right of the lever, which would be rotated to the left to rest on the bracket, as shown on the wagon drawing.



Below: Mill wagons dumped near the pier after closure of the system, photographed on 21st June 1964. Behind the dump is the stocking area where chippings were stored and beyond that the former course of the railway. This photo shows that the sides and ends of these wagons were not lined inside with steel.

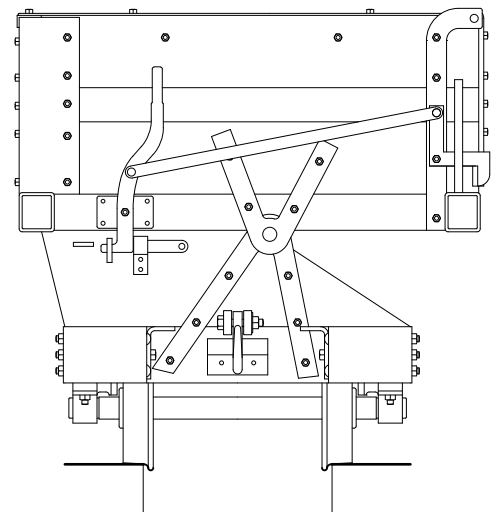
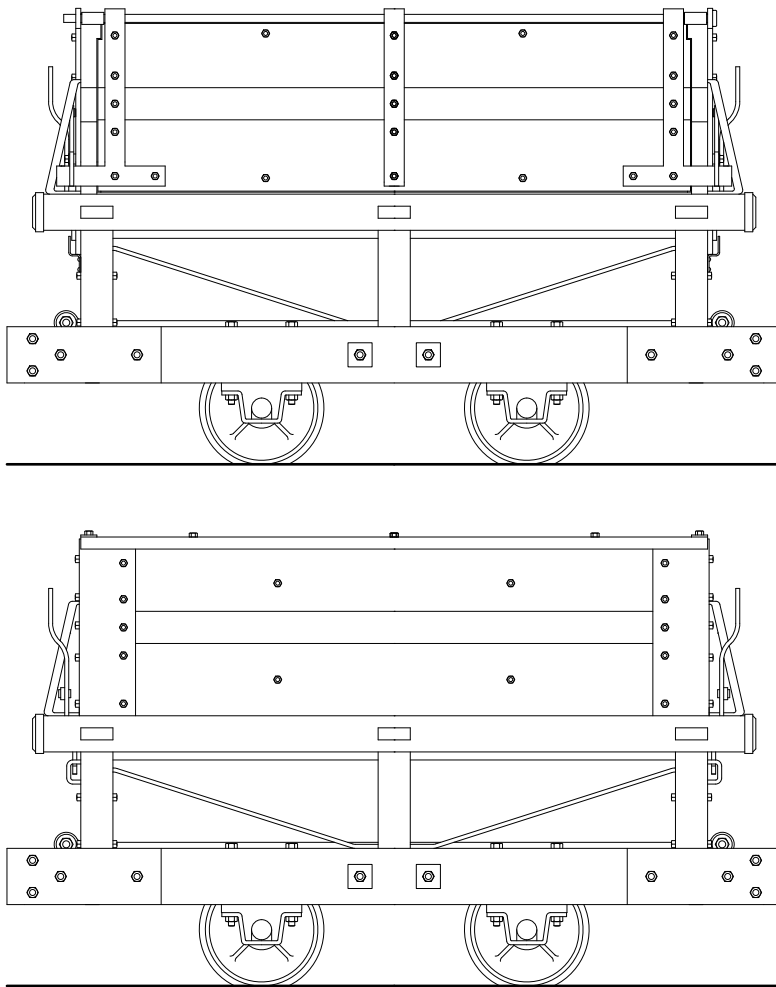


Photos: Philip Hindley

separately identified in the inventory so I assume they would be included in the total of Breaker Wagons. No doubt many of these would have been the earlier wagons predating the BRC&W design.

The third type of wagons listed in the 1952 inventory were described as Rubbish Wagons with a total of 36. Many years ago I found the remains of a wagon at Trevor Quarry which can best be described as a typical slate quarry rubbish wagon, i.e. with an open ended steel body on a very short steel channel underframe with no buffers or couplings. Presumably it would have been fitted with

single flanged wheels rather than the double flanged type usually found in slate quarries, but these were missing from the remains. There would have been several of these wagons on each level for disposal to the tips of the smaller material not required for stone production. After the main production of the quarry turned from setts to crushed stone less material was rejected as waste but the finest material would still have been classed as dirt and disposed of on the waste tips. When mechanical loading was introduced all material passed through the new primary mill on 5 Bank where the



TREVOR QUARRY TIP WAGON

© P G Hindley 10/2011



dirt was screened out and disposed of to the tip by conveyor. These wagons would thus have no further use and, being all metal with some scrap value, most were probable disposed of at that time. Presumably these were the Rubble Wagons listed by J I C Boyd in 1909 as steel end tippers.

Finally the fourth type of wagons were the Tipping Wagons of which only 8 were listed. The frames had the same dimensions as the Mill and Breaker Wagons although there were some detail differences in construction, e.g. four tie bolts across the frame rather than three. The body was 6ft 6in long x 4ft 9in wide x 2ft 3in total height, comprising the 4½in high (x 4in wide) body frame and 22½in high planking, and sat 12in above the top of the frame. The floor was a ¼in thick steel sheet resting directly on the body frame and the 2½in timber sides and ends were also lined with steel sheets. Like the Mill Wagons, the door fitted in a ½in recess in the end planks to prevent material leaking from gaps at the ends of the door. The body pivot was 4in horizontally off the frame centreline towards the tipping side and 11½in above the top of the frame; and to position the body, the horizontal distance from the body pivot to the fixed side was 2ft 7in – thus the body was slightly off centre to the frame with a larger overhang on the tipping side. I am not certain exactly what these wagons were used for but can offer some suggestions. On the inside of the curve alongside the pier line where it turned away from the shore was an area used

as a stocking ground where chippings were stored in piles. Several sidings served this area alongside the piles but there would have been no fixed discharge points were the non tipping Mill Wagons could have been emptied. The Tipping Wagons could therefore have been used to bring stone from the mill to this area where it would then be tipped where required and stacked into piles by a small diesel excavator. The stone would then be re-loaded into Mill Wagons by the excavator when required for transport to the pier hoppers or for loading ships at the pier. Another possibility is they were used to supply the brick and coated stone plants in the Office Yard which may not have had wagon tipplers. Whatever their use it is apparent from the small number of these wagons that they only handled a small part of the quarry rail traffic. Finally, amongst the stock stored near the pier after the closure of the system were two steel V-skip wagons which may have been used for clearing spilled stone under the pier hoppers but it is not known whether these were included in the total of tipping wagons or rubbish wagons, or maybe acquired after 1952.

REFERENCES

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Narrow Gauge Rails in North Caernarvonshire Vol.1 – West, J I C Boyd
Mine & Quarry Engineering, October & November 1953
Moving Mountains, P&WG publicity brochure 1950s

Festiniog Railway Bolster Wagon in 16mm Scale

Alan Kidner forgot what he learned at his mother's knee and built half a pair of FR bolsters:

“WHAT'S WORSE THAN a maggot in an apple?” goes the opening of a cautionary riddle my mother taught me as a child. The correct answer is “half a maggot.” In the case of this model, it could be “half a pair of bolster wagons.” Heaven knows why I only built one and not a pair. It's not much good on its own!

Prompted by Stuart Baker's article in REVIEW 85, I sent two snaps of my solitary wagon to our then editor who promptly requested some text to accompany the pictures – and this is it. The wagon was constructed from Slater's Plastikard and it's scary to realise that it was more than 30 years ago. Indeed, I described the techniques employed in an article in *Merioneth Mercury* No.18 of November 1979.

BODY

The whole body of the wagon, except fittings, was constructed from .080in Plastikard laminated together using Plastic Weld. As anyone who has cut or carved Plastikard will know, the blade throws up ridges either side of the cut. When scribing detail these have to be removed. I do this by drawing a curved knife blade sideways along the ridge. The scribed lines dividing the planks need to be deep and fairly wide at this scale. One way of widening the lines is to draw the point of a knife sideways down the slot; the knife is then turned so the blade is on the other side and the process is repeated. When you scribe the planks on one side, you will find the plastic warps; if you scribe the other side to a similar depth the plastic will become flat again.

BOW ENDS

The bow ends/buffer beams were made by cutting four pieces of .020in sheet to the correct profile. Smaller oblong pieces of Plastikard were then placed between each pair to achieve the correct spacing. Plastic Padding filler was then used to fill the gaps.

TIMBER TEXTURING

The next step was to give all those parts representing wood a suitable grained texture. I used two methods to obtain the grain. For the wagon floor, I laid the Plastikard on a sheet of very coarse

glass paper, (grit No.36) and pushed it back and forth two or three times, pressing hard as I did so. This produced a pleasing and quite realistic effect very quickly. The second method involved taking the smoothness off the plastic, firstly by rubbing with glass paper (grit No.120) in the general direction of the grain, and then working in the main 'contours' found in wood grain by scribing with the point of a craft knife, dragged sideways. Both graining methods tend to throw up ridges of plastic, which I remove by pushing a curved blade diagonally across the surface of the plastic so that it strikes the ridges from the front with sufficient pressure to sheer them off without damaging the rest of the surface texture.

STRAPPING

The metal strapping was cut from 0.010in Plastikard. Where this had to go round a corner I stuck it to one side, and then put a good

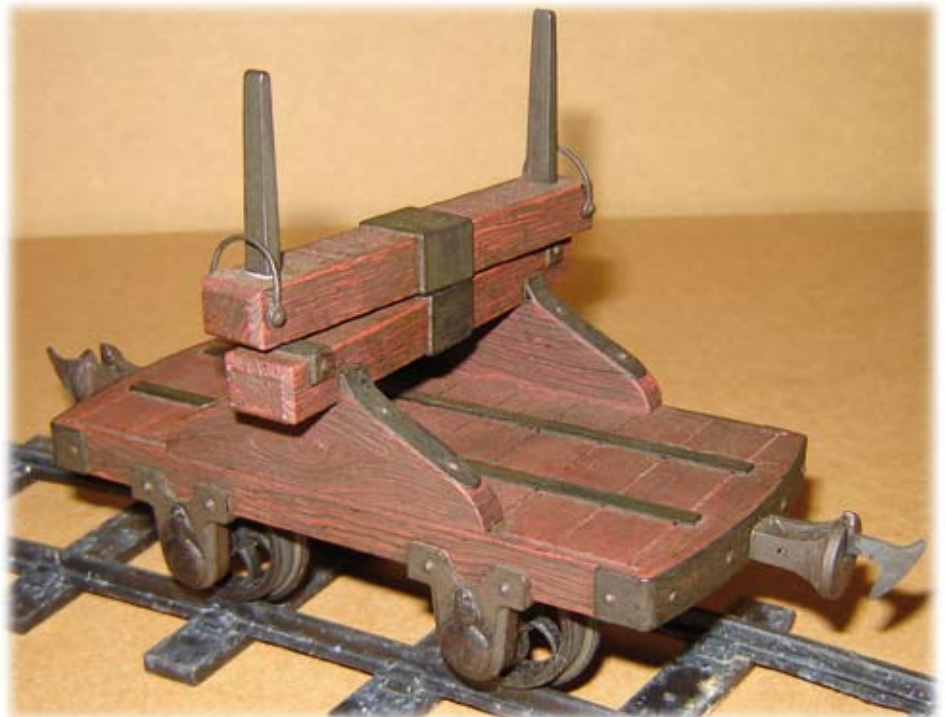


Photo: Alan Kidner

dose of Plastic Weld on both sides of the strapping where the bend was to be. The softened plastic was then carefully bent round the corner, and the loose side stuck down. Coach bolt heads on the model are represented by using track pins with a suitable head. I drilled holes to accept the pins, which were cut down to a suitable length. Some modellers heat sink the pin into place by touching the head with a hot soldering iron. I countersunk the hole very slightly with a larger drill and stuck the pins in with cyanoacrylate superglue. The couplings are my own castings – clearly not prototypical but they allow easy connection to other stock. Axleboxes and wheels were from Spooner's Foundry. Axles are silver steel in bearings from Slater's.

PAINTING

Painting was undertaken using Humbrol matt No.70, thinned slightly with enamel thinners to make sure it would not hide the wood grain. Humbrol paints take well on plastic but sometimes tend to get rubbed off metal surfaces, so I degreased these with methylated spirits. Having painted the woodwork and allowed to dry thoroughly, the metal strapping and bolt heads were painted dirty black. The wagon was weathered with Windsor & Newton peat brown ink, two coats being brushed on. This ink tends to dry fairly quickly so it is important to work methodically. To avoid 'tide marks' one has to make sure one starts and finishes inking each area of the model



Photo: Alan Kidner

at a suitable edge or joint. I expect the appearance of the model could have been improved by varying the shade of the ink. The final process was to apply a coat of Humbrol matt varnish. Although this doesn't look like it needs stirring, the secret of getting a matt finish from it is to stir it very thoroughly.

I don't claim to have invented the techniques mentioned here; I was following basic instruction given to me at the time by William Breakwell of the Alumwell Narrow Gauge Group.

Dear Mabel – don't you wish you were here?

The 3 men you see in the picture are the only officials on the line, driver, stoker & guard. The guard gets out at each station to collect tickets. The booking office is on the rear compartment of the train. We travelled 5 or 6 miles by it on Sat & visited some waterfalls. The scenery was as beautiful as any I have seen. I wish you were able to come.

E.H.



Sent to Miss M Williams, Rusholme, Manchester – postmark Merioneth, dated 28th July, 1915. Valentine's Series postcard – collection Roy C Link

UNDER REVIEW

PRODUCTS OF INTEREST TO NARROW GAUGE MODELLERS



4mm Scale Londonderry/Seaham Harbour chaldron wagon kit

RT Models, 141 Wenlock Road, Shrewsbury, Shropshire SY2 6JZ

Email: info@rtmodels.co.uk Website: www.rtmodels.co.uk

Prices – in text

RT Models produces an interesting range of kits and accessories in 4mm and 7mm scales for both narrow and standard gauge, with a heavy industrial bias.

This latest addition was spotted at Warley, a 4mm scale standard gauge chaldron wagon of the type that ran at Seaham Harbour and Londonderry. The distinctive chaldron shape and running gear, so redolent of the industrial North East and earlier railways, is well captured in what is a relatively simple kit comprising mainly whitemetal castings and some etched details. Split-spoke wheelsets are available at extra cost.

Robert Thompson – the RT of the name – recommends a dry run or two when building the body, as keeping the complex body shape all square can be tricky. In addition, the underframe has been designed for EM and P4, with the result that a small amount of filing of the bearers may be necessary to achieve sufficient clearance for 16.5mm/00 gauge.

Price for single wagon kit with wheels is £10.30, or £47.50 for a batch of five. A single wagon without wheels costs £7.60, or £35.00 for five. Postage and packaging in UK is £1.00 for orders below £15, £2.20 for orders between £15 and £49.99, and £3.20 for orders over £50.

All scales – Paint Stands

Shere Products, Progressive Engineering Solutions Ltd.,
8 Betts Avenue, Martlesham Heath, Ipswich, Suffolk,
IP5 3RH

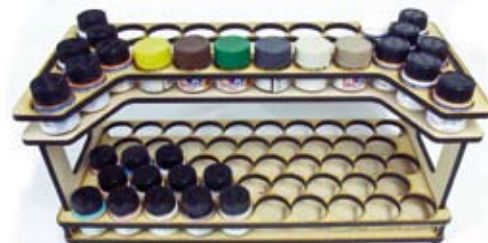
www.proeng.co.uk – also on Ebay

Prices - in text

Like many modellers, I have a large and varied collection of paints and similar products. Over the years they get progressively more difficult to store and these laser cut self assembly kits are an absolute boon. Besides keeping all your paints easily accessible – you can sort them into groups depending on how you like to work.

What you get is a set of very cleanly cut MDF parts, a bag of nuts, bolts, washers, an Allen key plus four soft feet. Assembly is very easy if you follow the instruction sheet provided and we had no problems with any of the parts – the fit of the laser cut pieces being very precise indeed.

The small rectangular stand costs £15 and accepts up to 21 Humbrol tinlets, 'Com-Art' containers – or anything that will fit into the 31mm dia holes. Other sizes are available, the two-tier large rectangular stand shown (price £35.00) has holes 35.5mm dia – and will hold Railmatch and Tamiya (10ml) jars, plus 'Life-color' and similar sized pots. A great way to tidy up your workbench.



BOOK & VIDEO REVIEWS



Aspects of Modelling: Weathering Locomotives

Tim Shackleton

Pub: Ian Allan, 28cm x 21cm paperback – 96 art paper pages illustrated throughout with colour photographs. ISBN 978 0 71103656 7

Price: £14.99

In the first part of his weathering article in the last issue of Review (No 88 – and see second instalment in this edition) Tim Shackleton confessed that the three years it took to produce a book and films about painted weathering effects had taught him more about the processes involved than he had learned over the previous decade. The challenges of painting models for others to judge had concentrated the mind, he suggested, forcing him to re-evaluate proven techniques and explore new ones. Well, this immensely practical book is proof of that evolutionary process. Tim has taken an irritation that all editors and readers will recognise – the article that ends with a frustratingly terse: “The final stage was to weather the locomotive, using Humbrol enamels” or worse – and has answered it resoundingly.

The book begins with a well-written and sometimes amusing chapter, covering not just the ravages of weather on the prototype but some modelling autobiography that explains the author's development and drops plenty of names. The next chapter is a portfolio of loco examples, including some very attractive industrials, and then we get down to business, with chapters on how and why engines weather, the equipment needed to replicate these effects in miniature and the techniques available. Best of all, in our view, are chapters 5 and 6 which cover the practicalities of using an airbrush and applying powders and then go on to detail some beautiful worked examples. And they really are detailed, covering every nook and cranny. There's valuable stuff in there, too, about the availability and worth of ready-made, canned weathering effects by the likes of Testors, and a useful discussion on compressors, one of those expensive chunks of modelling kit that still awaits a full and thorough evaluation in print. *Weathering Locomotives* is lavishly illustrated and at an affordable £15, deserving of a place on any serious modeller's bookshelf. BB



RAILS TO GLYN CEIRIOG

John Milner & Beryl Williams

Pub: Ceiriog Press, PO Box 85, Chester CH4 9ZH. Hardback, 272 x 216mm, full colour jacket, coloured end papers, 308 pages, 358 photographs, 20 maps etc., 47 previously unpublished original plans. ISBN: 978-1-900622-14-1

Price: £58.00 plus P&P

Long awaited, this is part one of a new comprehensive history of the Glyn Valley Tramway and volume two covering the industrial history of the Ceiriog Valley. We reviewed volume one in REVIEW Issue 75, where we noted the new page layout, which is carried on with this new book and expanded upon. Author John Milner has been pursuing his chosen subject for some 50 years and is assisted here by fellow researcher Beryl William who shares John's exacting standards.

There is a wealth of new material compared to previously published histories of the line – Including John's earlier work published back in 1984. Compiled from official sources and hitherto un-published archive material, the book places on record a lifetime of research. Part one covers the background to the establishment of the early horse tramway, construction and history. The conversion to steam and history up to 1903 is covered in fascinating detail. Eight appendices provide much extra data for those who like traffic figures and the like. The illustrations are a joy to peruse and the whole work an essential addition (as was volume 1) to the narrow gauge bookshelf.

Well printed, the book represents good value considering the quality of presentation and binding, particularly in view of the relatively low print run of 1000 copies only. RCL



Modelling Trees

Part 1 – Broadleaf Trees

Gordon Gravett

Pub: Wild Swan Publications Ltd, 1-3 Hagbourne Road, Didcot, Oxon OX11 8DP.

Softback with glazed covers.

21cm x 28cm – 92 artpaper pages, profusely illustrated with colour photographs and line drawings.

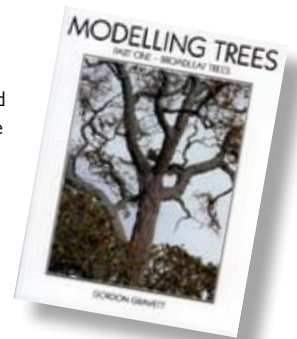
ISBN 978 1 905184 88 0

Price: £19.95

Even though it doesn't make such claims, if any book could be said to have been written by popular demand, Gordon Gravett's *Modelling Trees*

is it. Those of us who have seen and loved Gordon and Maggie's layouts over the years, from 'Ditchling Green' and 'Abergynolwyn' to 'Pempoul', will adore this first volume exploration of the art of creating supremely realistic trees in miniature. As well as being a practical guide, it offers an insight into what makes modelling so enjoyable: observation, experimentation, love of the subject and a sheer sense of achievement.

While no two full-size trees are the same, which means that thousandths-of-an-inch don't need to matter to the modeller, their very diversity and complexity makes them notoriously difficult to represent realistically – and it is these two sides of the same challenge that are dealt with so comprehensively here. Well-written, superbly illustrated and bursting with the pleasure of the hobby, *Modelling Trees* examines some innovative ideas and techniques, not least the extensive possibilities of electro-static fibre dispensers. As someone steeped in the finescale ethos, Gordon also looks at representing various bark patterns, birds' nests and parasites like mistletoe. No publisher handles this sort of material quite as wonderfully as Wild Swan, who are responsible for mould-breaking books like *Landscape Modelling* by Barry Norman and *The Art of Weathering* by Martyn Welch. *Modelling Trees* falls into the same classic niche. The full title of this little volume is *Modelling Trees Part 1 – Broadleaf Trees*, which means we have at least one more title on the subject to look forward to. It can't come soon enough. BB



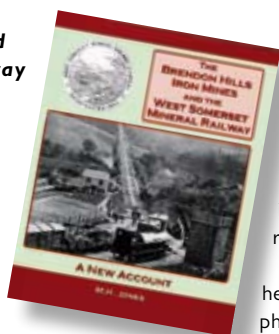
The Brendon Hills Iron Mines and the West Somerset Mineral Railway – A New Account

M H Jones

Pub: Black Dwarf Lightmoor,
120 Farmers Close, Witney. OX28 1NR
Hardback, glazed paper jacket, 21cm x
27.5cm – 416 artpaper pages, profusely
illustrated with photographs, line drawings
and maps.

ISBN 978 1 899889 53 2

Price: £24.99



The industrial history of Great Britain records numerous enterprises which failed to fulfil expectations and have since vanished almost without trace. Few can have involved so much expenditure, for so little reward, as the opening and development of the iron mines on the Brendon Hills in West Somerset and the construction of the standard gauge West Somerset Mineral Railway to carry the ore to Watchet harbour for shipment to Newport. The 1 in 4 incline, more than a kilometre in length, which carried the line to the summit of the Brendon Hills was perhaps the most significant standard gauge incline in the country and makes this little railway unique.

Today, traces of mineshafts and adits, of miners' housing and chapels are evident, and through the upland landscape winds the trackbed of the former railway, uniting the eastern portion of Exmoor National Park to the coastal plain. Much of this hidden heritage has been revealed not only through documentary research and analysis but also

by measured surveys of almost all the extant remains of the mines, both on the surface and underground, and of the railway's infrastructure, including locomotives and rolling stock.

Also included herein are many historic photographs and examples of contemporary ephemera, as well as an extensive and

accomplished description of the lives of the men who lived and worked within and alongside the mines, and on the railway.

Michael Jones, with the considerable help of the late Roger Sellick and the late John Hamilton, has here produced a definitive, fully documented, highly readable account of this 19th century failed enterprise, which nevertheless lingered on into the 20th century, when attempts to revive the mines failed in a similar manner. Your reviewer recalls vividly, finding a copy of Roger Sellick's 1962 book *The West Somerset Mineral Railway* in a Midlands bookshop while still a teenager. The single photograph therein, of the W G Bagnall IST

spawned a whole series of models in various scales.

The little 2ft line which ran from Brendon Hill incline top to Coltonpits on which the loco ran is very well described in this new volume, with better reproductions of the known photographs, plus some new ones - which how both the Bagnall and the more elusive Kerr Stuart 'Sirdar' class 0-4-ST. There are detailed photos of the mine - which had an incline of its own.

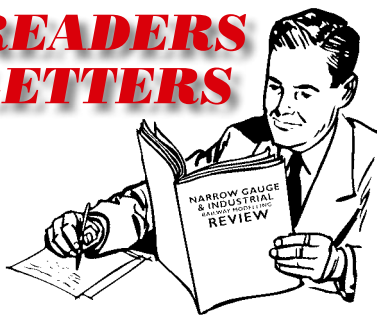
Mining and railway historians, railway modellers, students of Somerset history and the people of West Somerset will all find much of interest and value within these pages.

The book is produced in conjunction with the Exmoor National Park Authority and has been made possible by grants from both the Heritage Lottery Fund and from the West Somerset Village History Society - which accounts for the bargain price.

RCL



READERS LETTERS



NWNGR Cleminson wagons

Stuart Baker is a brave man to attempt drawings of early NWNGR wagons. At least one - and in one case, two - of the pitched roof wagons appear in no less than five published photographs, one of which includes a distant but complete view of the Cleminson coal wagon as well. None of the five photographs are particularly clear but, taken together, they provide the basis for an

educated guess as to both the dimensions and the use of these unusual wagons.

Three of the photographs show a single wagon in mixed trains in the early 1890s, in one case as the only wagon, and in the others coupled to the similarly-sized coal wagons. The other two show the wagons parked outside the goods shed at Dinas. This all strongly suggests that they were what other railways would term "station trucks" or "road vans", used for miscellaneous goods items which were too bulky to be carried in the passenger brake compartments. It is relevant, perhaps, that the Pickering carriages of 1907 included significantly larger brake compartments than the four earlier brake carriages. Typical traffic would probably have included barrels of beer, cement and even gunpowder, and quite possibly small livestock, chickens, pigs and sheep. The lifting roofs may have facilitated crane access within Dinas goods shed and/or ventilation for livestock. The adjacent main line L&NWR had some

small 7-ton vans with roof hatches over the doors which were used in a similar way.

Stuart's end elevation appears to be reasonably correct, although it lacks a central small strap, possibly a lamp iron, on the seventh plank up, and what may be a short vertical handrail at the left hand end of the fifth plank up. The roof should have a ridge cap much in the style of that fitted to Mike Cowley's corrugated iron shed model described earlier in the same REVIEW issue. The lifting flap, which is probably an iron or steel sheet, has a strengthening strap, clearly visible in the photograph reproduced in the REVIEW, which is positioned approximately on the centreline of the left hand of the two doors in order to clear the middle hinge. My own interpretation is that the hinges are much shorter than Stuart depicts, but the photographs are insufficiently clear to be certain.

Stuart's side elevation is distinctly foreshortened as the wagon body should be



A cruel blow up from a Victorian postcard entitled LLYN GADER LOOKING TOWARD MOEL HEBOG provides this useful study of a train at the Snowdon (formerly Rhyd Ddu) terminus of the NWNNGR. By plotting the geographical features visible in the complete view it has been possible to determine the position of the photographer to within a few metres and, since the precise dimensions of some of the buildings and of the locomotive MOEL TRYFAN and the carriages depicted are known, to establish the lengths of the wagons and the size of the gaps between them. The scene depicted is intriguing, the shadows can only have been cast by an early morning sun and, because of the presence of the Snowdon mountain range directly to the east, the photo must have been taken close to, or on, midsummer's day. The cottage and refreshment room complex was only built in 1893, while cosmetic changes were made to the loco in 1894, so the photo must have been taken in one of those two years. The presence of almost all of the railway's older carriage stock in the sidings is puzzling and must have been very short-term as it totally blocades them. Usefully, though, analysis of the placement of these carriages effectively confirms the contemporary track layout at the station, which had changed c1892 (to provide a run-round loop) and was to change again c1895 (to further lengthen the loop and to change the siding layout). Photo courtesy: Welsh Highland Heritage Group

approximately 8ft 6in (instead of 7ft) long and the wheelbase approximately 5ft (instead of 4ft). The coal wagons shared these dimensions, and the body width of 5ft, and were mounted on similar underframes, but their bodies were quite different, much closer to the Cleminson vehicle in general style. I would suggest that the two doors had vertical planking the same width as the horizontal body sides, which would make the double-door opening approximately 2ft 6in, leaving approximately 5in to be added either side of the doors. The REVIEW photo shows a clasp, apparently to fasten the roof down, to the left of the doors and this needs to be added to the drawing.

The underframe depicted is significantly wrong, quite apart from the foreshortened wheelbase, as the wagon had substantial axleboxes, probably not dissimilar to those fitted to the passenger carriage bogies. In addition the V-irons were bolted to the inside of the solebar, although the corresponding bolt heads appeared on the outside, and I suspect that the second V-iron was suspended from an internal chassis frame member rather than the other solebar, it certainly was on the coal wagons (including the Cleminson vehicle).

The coupling head should be perhaps 2-3in longer as the wagons coupled with their main bodies approximately 2ft apart. A contemporary report indicates that 15 NWNNGR wagons were fitted with through brake pipes c1891, and one of the Dinas photographs shows that these wagons were among those 15, with the upright brake pipe fitted to the left of the coupling head. One

can surmise, perhaps, that the 15 included two pitched-roof wagons, 12 four-wheel coal wagons and the Cleminson coal wagon (which would, therefore, have been fitted with passenger-style couplings despite the Metropolitan drawing depicting otherwise).

Finally, it is worth noting that the Dinas photo which depicts two wagons shows that they were opposite ways round: one, as with the coal wagons, with its brake handle on the west side, the other, as in the REVIEW photo, with its brake handle on the east side. This rather suggests to me that, apart from the brakes, they were not handed, both sides being identical.

The NWNNGR's official returns suggest that it acquired extra wagons c1891 and withdrew many c1907. One of the Dinas photos pre-dates 1891 so all these wagons were part of the original stock of 1877/8. The NWNNGR general goods, as opposed to slate, wagons which survived into the WHR era were all a little larger (and not specially equipped to work with passenger stock), and it seems likely that all of the earlier wagons had been withdrawn by 1907. It is not impossible that some of the ironwork was reused, as the later goods and goods brake vans had a distinctly home grown appearance about them.

I am sorry to have so mauled Stuart's work, and I fully appreciate how difficult his task was, but I feel certain that, had he had access to the other photographs, he would have come to similar conclusions to mine.

David Woodcock

Champlon, Belgium

Stuart Baker comments:

Regarding Mr. Woodcock's letter, it is very reassuring that my drawing has generated interest and indeed he has obviously studied the available photos very carefully. I would be interested in his list of published photos of this wagon as it means I have missed finding some; and obviously without these I cannot come to similar conclusions.

The actual length of the wagon is difficult to determine, and having tried not very successfully to proportion from the perspective view concluded that it was probably about 7 ft long to match the NWNNG 2 plank merchandise wagons, although I do agree it makes for a short vehicle. Boyd states the large coal wagons to be 10 ft long over body, so I am not sure where David gets 8ft 6in from – have I missed information from somewhere? However 8ft 6in for this particular wagon would certainly make more sense with a 5ft width, and I like his logic regarding the door planking and its resulting width.

I am not convinced as to the type of axlebox as from viewing the e-mailed perspective on my PC the axleboxes are round-bottomed. However, I concur with David's thought on the second V-iron, this would make mechanical sense. It is such a pity that more of the underframe cannot be seen.

Now the roof. The strap David talks about is what I believe to be the middle hinge, hinge length being loosely based on such wagons as the Tallylyn gunpowder van. Nor am I convinced whether the roof is metal or inside framed wood, though logically a metal roof would be longer lived and stronger. There is obviously a ridge but whether it had a separate roof cap would surely depend on its construction – I have assumed the weathering cap is integral to the construction. Having checked various standard gauge pent roofed salt wagons on the web I note that they mostly have a vertical wood section or metal strap mounted vertically below the ridge – I believe that is what shows on the end view and would make more sense than a lamp bracket or similar as it would support the end of a ridge beam.

Finally, I am in the process of drawing the various stages for the Sanford brake van on the Penrhyn Railway. So before I reach a conclusion would anyone with either a works drawing of Sanford or site dimensions taken from the brake van at Penrhyn please contact me via the Editor? Many thanks.

Our thanks to David W Evans for related information on this matter – Editor

Festiniog Railway Bolster Wagon

Please find enclosed a photo of a model I recently completed, based on the FR wooden bolster drawings in REVIEW Issue 85. It is shown unpainted as I have not found details of livery and wagon number for the 1925 period - which I model in 16mm scale. Should anyone wish to follow I bought the wagon floors/chassis from Binnie Engineering and scratch built the bolster from the drawings.

Frank Welland

Surrey



Photo: Frank Welland

Jottings – news, notes and nothings, in brief...

EAST ANGLIAN NG GROUP

A new regional group has been formed for anyone interested in all forms of narrow gauge railways and modelling NG in any scales smaller than 1:1, with the aim to build layouts to run for pleasure or for exhibition, as well for members to show and share.

The group will be meeting in March, Cambridgeshire, on a fortnightly basis to start, with the first meeting being Tuesday January 10th 2012. As the region is geographically quite wide the idea is to have a members' newsletter supported by organised meetings, presentations, lectures, demonstrations, talks and attending exhibitions (with the ultimately aim being to hold its own East Anglia Narrow Gauge Model Railway Exhibition).

For more details contact Alan Thornton on 01354 650987 (between 10.00 am and 9.00 pm) or at eangmrg@modelcollectors.co.uk.

NARROW GAUGE NORTH 2012

This is the 19th annual show organised by the Narrow Gauge North Group. Funds raised go to the Sue Ryder Care charity centre at Wheatfields, Leeds.

The show will be held on Saturday 10th March 2012 at Benton Park School, Harrogate Road, Rawdon, Leeds LS19 6LX. Opening Hours are 10.00am to 5.00pm and admission costs: Adults £5.00, accompanied child £1.00, families (2+2) £10.00. The site offers good access for disabled visitors, free parking and refreshment facilities. Contact details: 01937 573149 – www.narrowgaugenorth.org.uk

Once again, the organisers have brought together an excellent array of layouts and traders from around the UK.

Layouts

Annascaul, A flavour of Abhainn an Scail – 00n3

Big Cat Mine – Gn15
Boggarts Leap – 009
Borth y Gest – 4mm finescale
Corris – 1:48
Cressington Light Railway – 009
G-Wizz Garden Railway – G
Ghylldale – 009
Llandido – 0.16.5
Mount Dowd – 16mm scale
Pont Gelert – 009
Redwood Lumber Company – 0n30
Steintalbahnhof XI – H0/H0e
Timpdon Lake Railway – 16mm scale
Tor Farm – 7mm
Whitehill Cement Works – 0.14/0.16.5
Zorba's Mine – 0n30
7mm NGA layout - 0.16.5

Displays

7½inch Gauge Society
Slim Gauge Circle

Miniature Railway
7½inch gauge ride-on railway

16mm GARDEN SHOW

The Association of 16mm Narrow Gauge Modellers is holding the National Garden Railway Show on Saturday 31st March at the East of England Showground, Peterborough. The full-size 'guest loco' this year will be Penrhyn Quarry engine LINDA, now a mainstay of the Ffestiniog.

Full details from www.16mm.org.uk

SQUIRES ANNOUNCEMENT

Oliver Lewis has let us know that he is to ensure the continued supply of Squires' famous ranges of Modelling Tools, Materials and Electronic Components by Mail Order and from the well know Squires Trade Stand, at

many Model Shows and Exhibitions throughout the UK.

Squires Tools Shop is closing in Bognor Regis. Oliver is pleased to have secured new business premises where he will operate the Mail Order and Exhibition Teams.

Oliver is also very pleased to announce that he is launching a new online store, (www.squirestools.com) which he hopes will be ready to go live on the 1st January 2012.

Squires Tools will have new telephone and fax numbers, which will be advised as soon as numbers are confirmed. Web address www.squirestools.com and email sales@squirestools.com will remain the same.



We may like to think that Britain's traditional red telephone kiosks are a distinctive national identifier, but other countries have call boxes that are uniquely their own. Reader George

Morris in Sweden sends this photo of a 'pagoda' phone box, which shouts Sweden just as loudly as our K-series boxes, designed by Sir Giles Gilbert Scott, shout UK. This model, built by George, is from TecknoBygg, a Swedish specialist in kits, bit and vehicles in both HO and continental O (1:45) scale. The pagoda kiosk is whitemetal and etched brass. TecknoBygg is well worth a look, and the website has a small English-language section: <http://wb616757.bahnhofbredband.se/>

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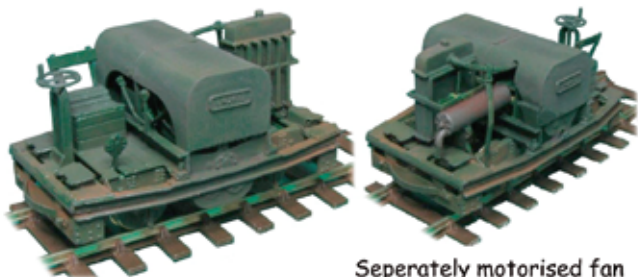


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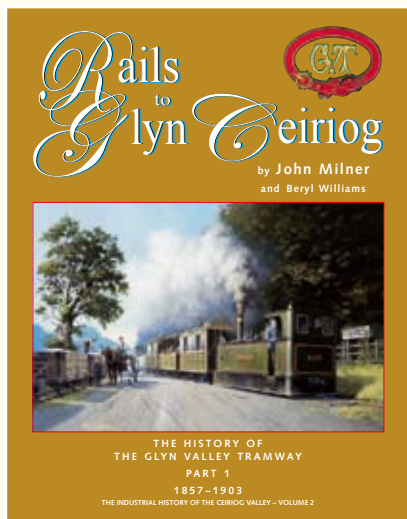
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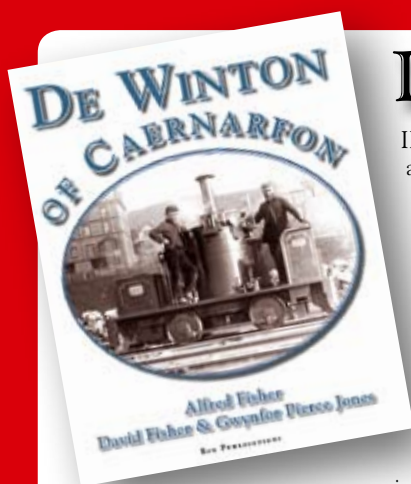
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