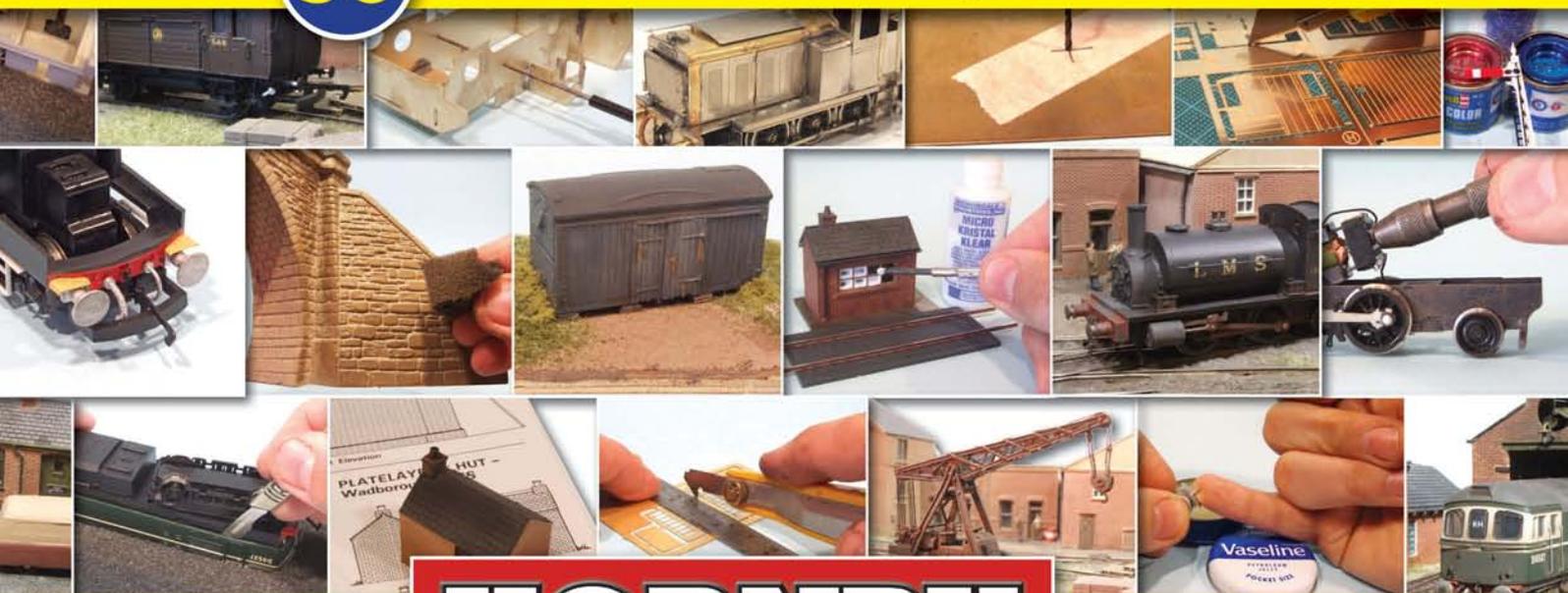


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INTRODUCTION

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A
HORNBY
 magazine
SPECIAL PUBLICATION



It seems a long time since *Hornby Magazine* editor Mike Wild first asked me to produce a few step-by-step articles building kits. Since then, a lot of models have been across my workbench, so many in fact that we thought it might be a good idea to compile some of them into a single volume. For good measure, I've produced eight brand new projects too.

"Why do you bother?", people ask me, "we don't need to build kits any more."

Let's face it, you can buy pretty much anything you want for a model railway ready to use. Locomotives, rolling stock, buildings and even complete layouts can be purchased off the shelf. Why should anyone want to mess around building things?

My answer is always the same – satisfaction. I'm perfectly happy to buy models that suit my purpose but I don't get anything like the satisfaction from simply owning something that I experience when I've built it, or at least modified it, myself. Maybe it's not quite as perfect as what a man with millions of pounds-worth of injection moulding equipment can produce, but it's mine. Unique and special to me.

"But I don't have the skills".

That might be true but you can

acquire them. I didn't benefit from an engineering apprenticeship or a school that showed much interest in practical subjects. What I had was a Dad who encouraged me to have a go and taught me a few basics. If something doesn't work out, it doesn't matter. We are talking about model railways and not brain surgery after all. You probably learn more from mistakes than successes, or at least that's my excuse for not feeling guilty when it all goes wrong.

These guides show the process of building a model. If all you see is the finished product you have no idea of the effort that went into it or the bodge carried out along the way. Not every HM project goes to plan but we usually find a way of fixing things to get a result. I'd argue that the most important skill any model maker needs to acquire is a decent level of bodging or making things look right, even if they aren't exactly perfect.

Remember, this is a hobby. An activity or interest pursued for pleasure or relaxation. Don't let anyone tell you what you can and can't do. I always say, "it's my train set, I'll do what I like on it", so don't be scared to try. Have a go. Get your hands dirty. And enjoy it!

PHIL PARKER



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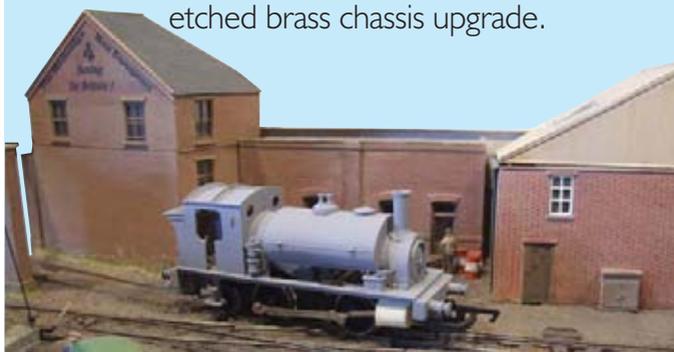
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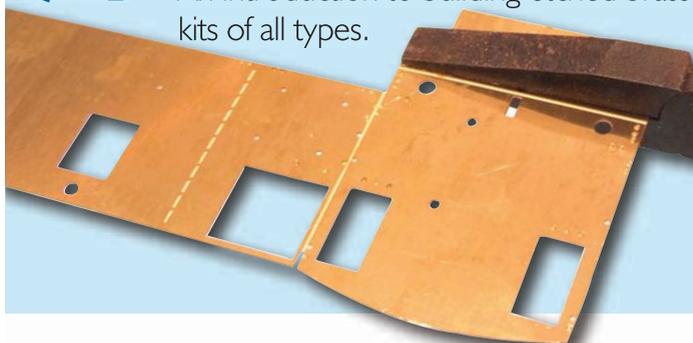
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Wills' Viaduct

Plastic kits are easy – take the bits out of the box and stick them together until the model looks like the picture on the lid. Sometimes though, a kit has to be designed to be more adaptable and therefore requires a little more thought. In extreme cases you treat the parts as nothing more than raw material to be fashioned into the result you require.

This was the case with our viaduct. Mike Wild had built the baseboard for 'Topley Dale' and on one side of the layout the track ran across a chasm.

"That's where the viaduct goes" he explained. It didn't matter if the kit parts fitted, my job was to use them to make the track appear to be supported by more than just a plank of wood.

Laying the arches on the board it appeared that there was just enough in the box to do the job. If there hadn't then Wills sell extension kits with extra piers to accommodate. The trackbed width was going to need to be reduced to 100mm. From sleeper bottom to the top of the board was 165mm, slightly less than the height of the pillars and arches combined.

A fan of over-engineering, Mike wanted to use the 6mm thick plywood already installed to support the track rather than the 2mm plastic sheet in the kit. If the wood extended beyond the viaduct it would make blending the scenery around the structure a lot easier. Fortunately, the ply was only screwed in place (four screws, was he expecting an earthquake?) so I left with this as well as my kit.

I suspect this scenario won't be unfamiliar to many people and it could be argued that this is the correct way to build a model. We should be making kits conform to our needs so the result is a unique model. Mind you, if we had planned ahead, perhaps I wouldn't have needed to do quite so much work building this thing!

Thanks to some clever design from the people at Wills, the process wasn't too difficult. Our wooden track bed could be squeezed in where the plastic one was intended to go. Narrowing the pillars worked okay once I worked out where to measure from. I didn't entirely follow the instructions as there are two layers of decorative stonework to top each one and I thought a single length looked better. It also saved a bit of chopping as you'll see from the photos.

With the work completed, the model returned to the layout and was screwed in place. I'll admit that my fingers were crossed at this point in case I'd made it too tall. A handy hint for anyone faced with a similar job, make the piers a bit shorter than required – you can always slide a few bits of card under each and then bury them in scenery. As it happened, my measurements were spot on and trains were soon thundering across the top. All we had to do then was bury the ends in the hillside and it looked superb.



Set in the scenery, the viaduct really looks the part. Around it the hillsides are built up with polystyrene covered in plaster bandage before the greenery is applied on top.

MATERIALS LIST

Wills Kits SS80 Three Arch Viaduct - £23.85

If you need a longer viaduct

Wills Kits SS81 Extra Arch & Pier - £9.60

Wills Kits SS83 2 Stone Piers - £10.70

Slater's embossed plasticard - £2.00 per sheet. Two required for this model.



STEP 1



Before the viaduct, there was a length of plywood screwed down over a gap in the baseboard.



STEP 2

These are the basic mouldings for the kit, multiples of each fill the box. You get a lot of plastic for your money.



STEP 5

Our trackbed is 6mm plywood already cut to size for the layout. It just fits in place although I did remove the highest supporting nib for the under-arch brickwork.

Each of the pillars is topped with some fancy stonework which was too wide for the intended location. Cutting at the joints between blocks hides the worst of the joins but since they are under the arches, they won't show too badly if sanded smooth.

STEP 6



STEP 7

Three sheets of flexible brickwork are included for under the arches but since it has to be narrowed, doing the job with Slater's embossed plasticard is easier. Cut it exactly the length of the Wills item. Any more or less will make trapping it along the top of the stonework difficult. It only took me two goes to work this out.

Each pillar had to be narrowed by cutting along the edge. Remember when marking that these parts taper so measure the cut from the side and not the middle. If you get this wrong, the plastic can be re-joined surprisingly well without showing the damage too much. Don't forget to chamfer the edges to 45 degrees, once you've finished cutting, for neat corners.

STEP 8

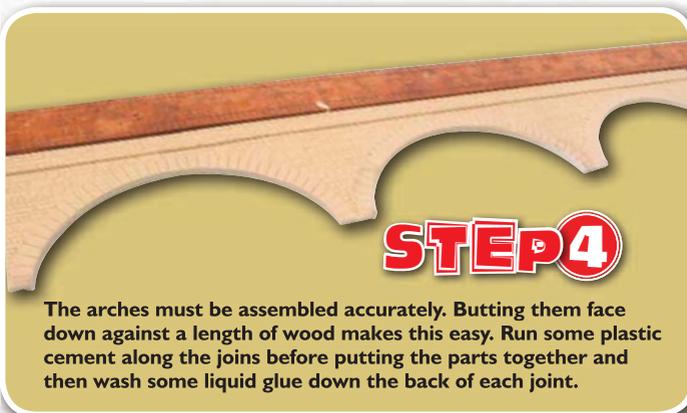


STEP 3



Since I wasn't using the plastic track base, the ridge to support it had to be removed. This can be achieved with a knife but an old pair of flush wire cutters are handy for getting rid of the worst of it. The remains are then quickly filed away.

STEP 4



The arches must be assembled accurately. Butting them face down against a length of wood makes this easy. Run some plastic cement along the joints before putting the parts together and then wash some liquid glue down the back of each joint.

STEP 9

Above the parapet there is an inner wall moulding and then capping stones to fit. If your wood is too thick, the wall might need to be trimmed, so dry-fit everything before getting the glue out. 6mm ply just fits without alteration.

STEP 10

Painting was simple. A coat of Humbrol pale stone (121) followed by some dark stone (187) splodged on to the surfaces of the stones with a piece of sponge. You could use a brush but I prefer the more random nature of the results done this way.



STEP 11



The pale stone carried on over the brickwork which once dry was coloured with a selection of brown pencil crayons to highlight the bricks.

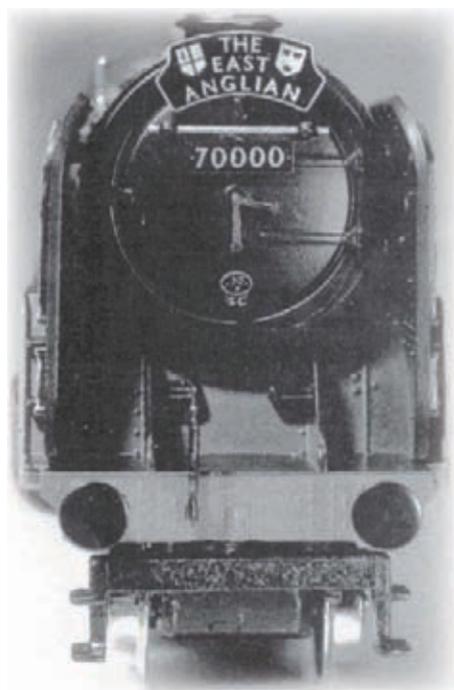
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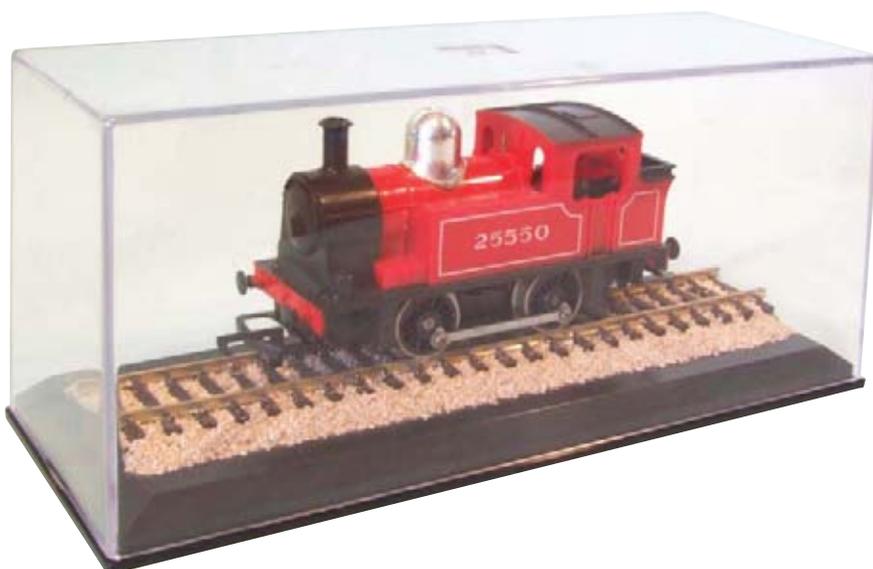
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Display Case

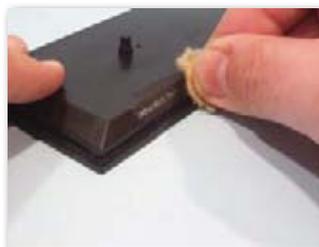
Why do so many models spend their lives stuck in the boxes they arrived in? Dust.

You might like to show off those lovingly built, or expensively paid-for models but dusting around the detail is a nightmare. Recently produced models are covered in exquisite additions vulnerable to over-enthusiastic poking with small brushes. For most of us, it's not worth the risk so models live safely in boxes, tucked away from view.

This seems a shame. Most of us have seen display cases for sale but they aren't cheap. However, for smaller models such as tank engines, why not use a plastic case originally intended for a die-cast road vehicle and fit it out with some track? These cases can often be picked up from swapmeets for pennies. Add a little leftover track and a couple of spoonfuls of ballast and you can produce a case that looks like it cost a lot more than it did and save your model from the cupboard.



STEP 1: Picked up from a model shop for a pound, this plastic case used to contain a die-cast bus. Leftover sticky labels need to be removed with a little white spirit on a cloth.



STEP 2: Along the edges are printed the details of the original model. A quick rub with Brasso removes these and polishes the plastic at the same time. You might have to do all the edges of the base for a consistent look but at least tiny scratches will vanish at the same time.



STEP 3: Various fittings were on the base but these can be prised away. Don't worry too much about the surface if you need more than a screwdriver, it's going to be covered up.



STEP 4: I like a nice ballast shoulder so a strip of mounting card is fitted that is fractionally wider than the track. A cork off-cut would work nicely here or even a few layers of cereal packet.



STEP 5: A length of Peco track is fitted. Use a Tracksetta or ruler to ensure it is straight.



STEP 6: I ballasted with Slater's limestone chips as they look pretty. It's carefully poured on and then fixed with a mix of PVA and water. Adding a drop of washing up liquid breaks the surface tension.



STEP 7: Even with the washing up liquid, some ballast will work its way on to the sleepers. For a display, clean them with a cotton bud dipped in water once the glue has dried.



STEP 8: The last task is to place your pride and joy on the track, put the cover back on and display in a prominent place.

CLASS 33

detailing



Every month my local model shop seems to have a shiny new locomotive to tempt the customers. Modern models provide terrific detail and prototype fidelity and cause us to look at our existing stud and think about replacing the older models with newer ones in a quest for perfection. When funds allow a new box appears and the contents are placed carefully on the track. Compared to the new arrival, our old model we were once so proud of looks poor and so it's consigned to a cupboard.

But, think about it. The plastic bodies of our models will last practically for ever. Should they end up in landfill, archaeologists of the future will be digging them up and exclaiming they have found something from the early Lima period. What a waste.

Fortunately, history teaches us that it is possible to bring our locos up to scratch. Back in the days when Lima were the big thing in model railway, a whole industry sprung up to provide detailing components. These are mostly still available and often for very reasonable prices. All you need is a suitable base model and some bits and off you go. Much of the old Lima range has been

upgraded mechanically and now appears in the Hornby Railroad catalogue, or you can dig around second hand stalls and swapmeets to pick up bargains, good news if you are on a tight budget.

The class 33 is a well regarded prototype and is available from two different manufacturers with a third on the horizon. From Hornby Railroad we have one of the older Lima tooled bodies priced around £38 whilst Heljan make a more detailed version retailing at around £60 - 70. Standing the two models side by side, you can see what a difference a couple of decades makes. The price gap might make you think that it's not worth the effort of upgrading the plainer model, but if you have an old version lurking in a cupboard (there are plenty of them out there) then there is very little to lose.

My plan was to use a Craftsman detailing kit to bring the Railroad model up to something approaching modern standards. The kit provides buffer beam detail and a roof grille. Handrails and lamp irons would be replaced and then the whole model had to be flush-glazed as the deeply recessed windows were the most objectionable part to my eye.

What I didn't plan on was repainting the

SUPPLIERS

Craftsman Models

01926 428530

www.craftsmanmodels.co.uk**DK5 – Class 33 detail kit - £6.50****Howes Models***Unit 2C/D Station Field Industrial Estate, Rowles Way, Kidlington, Oxon, OX5 1LA*www.howesmodels.co.uk**Lima Class 26/27 and 33 diesel Flushglaze kit - £2.15****Eileen's Emporium***Unit 19.12 Highnam Business Centre, Newent Road, Gloucester, GL2 8DN*www.eileensemposium.com**BSW040F – 0.45mm brass wire - £2.50**

REFERENCES

There are lots of places to find out about Class 33 diesels, here are the ones I used

British Rail Fleet Survey Volume 4 – Production Diesel-Electrics Types 1-3
by Brian Haresnape

Railway Modeller Magazine, October 1992

MATERIALS LIST

Detailing kit £6.50
Flushglaze £2.15
Wire £2.50
Rail white paint £2.65
Malachite Green paint £2.65
Underframe dirt paint £2.65
Weathering powder £3.40
Total £22.50

SPOT THE DIFFERENCE

A borrowed Heljan locomotive (left) gave me an idea of the differences between the two models.



body or replacing any transfers. Nor was I going to make significant changes to the body. This means I have to leave the roof alone despite the profile being too pronounced. This shows up at the front where the horn boxes are too tall but the correct width. Changing that would be far too much work, indeed I doubt it's within most people's capabilities.

This is a conversion where you can pick and chose how much you do. At its simplest, painting the handrails silver, and the front window surrounds black, followed by some re-glazing, will give you quite a nice model.

Going further, the detailing kit can be applied which improves the buffer beam and roof grille. I also beefed up the cab steps with microstrip and added some missing brackets. An option here is to use etched steps from PH Designs but that will push the budget a bit.

When tackling a job like this, the aim should always be firstly not to make anything worse. I always look at a task and consider if I can really improve on what is already there. This means tiny changes that are difficult to achieve neatly get ignored. For example, I left the bodyside windows alone despite knowing the corners should really be squarer. I reason my fiddling would probably end up looking worse than what is there already and even if it didn't, the improvement would be very slight.

An important lesson I learnt many years ago yet keep reminding myself of is that while you work on the model in isolation, you will normally see it as part of the layout. It's good to strive for perfection but if the thing is going to be batting by at speed then no one will be able to measure it up!

Another lesson is that a decent coat of weathering can hide a multitude of sins. When I removed the model's handrails, some touching up of the paint seemed prudent. Precision Paint rail white and malachite green are the correct colours, but since I didn't have any of the latter, brunswick green with a splash of black gives a reasonable match. Once dirty, I defy anyone to spot my subterfuge. If the model was to be dirty enough, I wonder if I needed to bother at all.

Considering layout use, I originally decided the model would be more use if I left both couplings on. Should your trackplan allow for models that only work in one direction, then cut off a tension lock and go to town on the buffer beam. At the end of the day, remember, it's your model and you can do what you like with it, which is why I later changed my mind and fitted the full buffer beam detailing kit.

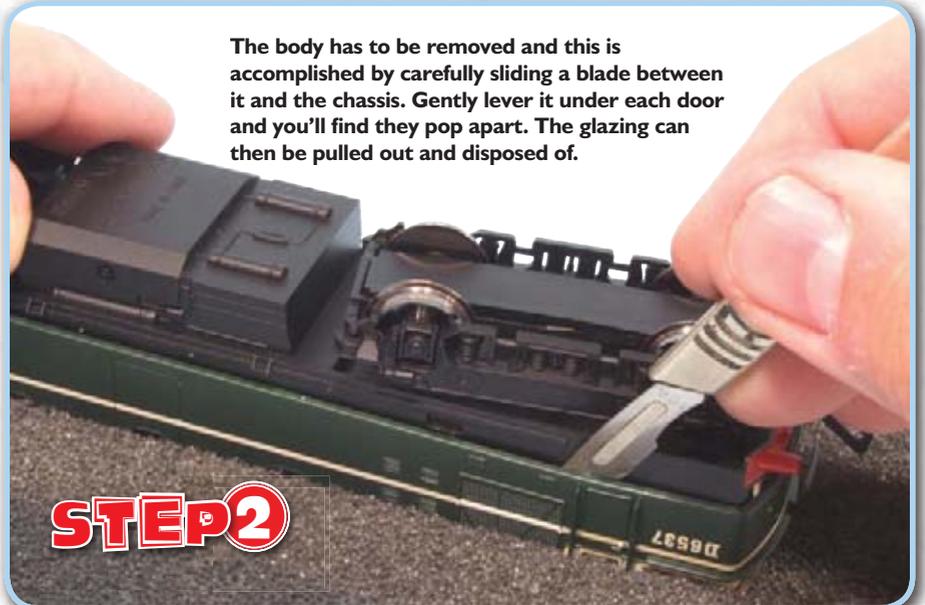
STEP 1



Detail was to come from a Craftsman Models kit. This provides new whitmetal buffers and pipes, for the roof an etched fan grille, wire for handrails and phosphor bronze strip to replace the moulded lamp irons.

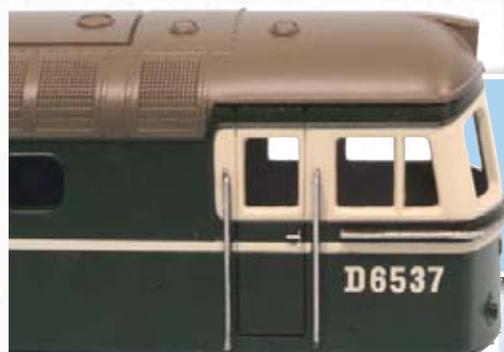
The body has to be removed and this is accomplished by carefully sliding a blade between it and the chassis. Gently lever it under each door and you'll find they pop apart. The glazing can then be pulled out and disposed of.

STEP 2



STEP 3

One of the simplest ways to improve the model is to paint the moulded handrails silver. The result is probably 80% as effective as replacement, but for 20% of the work.





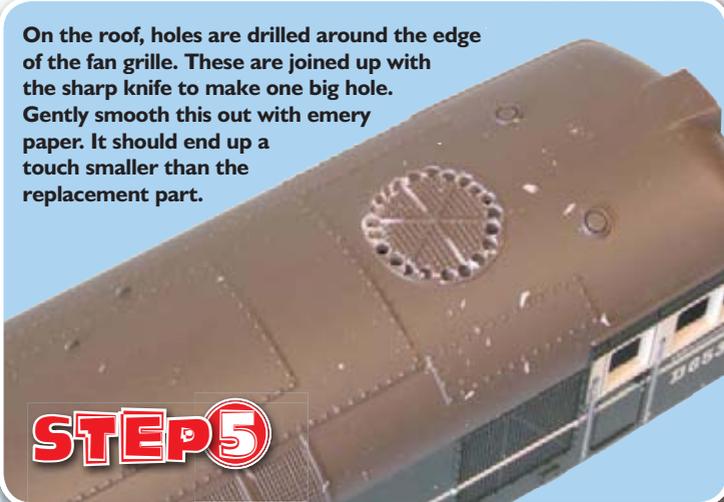
STEP 4

Being a glutton for punishment I decided on replacement wire handrails. With a sharp blade, the moulded ones can be pared off. Careful work now will save a lot of effort touching up the paintwork.

DOWNLOADS

Route indicator blinds and the Headcodes can be downloaded from: www.pagenumberone.co.uk/downloads

On the roof, holes are drilled around the edge of the fan grille. These are joined up with the sharp knife to make one big hole. Gently smooth this out with emery paper. It should end up a touch smaller than the replacement part.



STEP 5

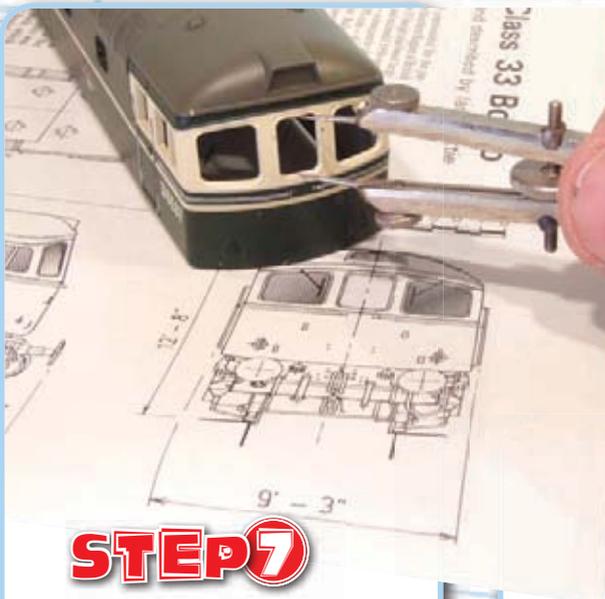
The roof is covered with catches that are missing from the model. According to a friend who worked on these locos in the past, if they weren't there then the panels would fall off. I positioned them according to the plans and photos using 2mm lengths of 1mm wide microstrip glued in place. Take care to keep them as square and regularly spaced as possible.



STEP 6

Moving on to the chassis, the buffers are easily removed as the plastic is pretty soft.

STEP 8



STEP 7

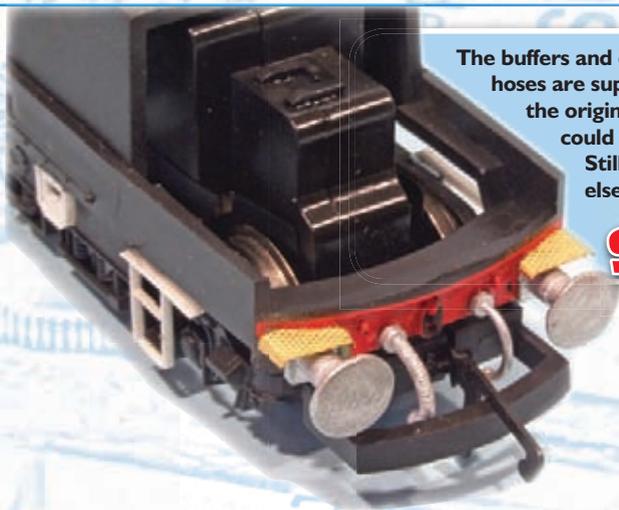
Looking at the cab, the windows appear to be too small. Compared to a plan however they are pretty much spot on, or at least not far enough out that I would worry about changing anything.

The bogie steps were given some depth with scraps of microstrip fixed with superglue. In the centre of the bogie, but attached to the chassis, are some brackets. 5mm by 4mm rectangles of 1mm plasticard with a square hole in the centre, which make reasonable representations. Once glued in place, I braced them with a smear of Araldite on the back.



STEP 9





The buffers and end steps glue easily in place. Plenty of hoses are supplied but as I planned to hang on to the original couplings, was limited to the ones I could fit and still get the loco around curves. Still, the left overs will come in handy elsewhere!

STEP 10

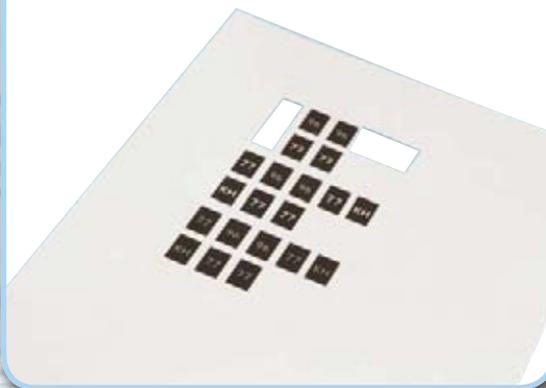
All the handrails were replaced with 0.45mm brass wire. I don't think there is enough supplied in the kit to do the sides and front so you need to source some more.

STEP 11



STEP 13

The middle cab window should be filled with a route indicator blind. Lacking suitable transfers I knocked some up on the computer and printed then on photo paper. You can download the sheet I made from my website. The digits chosen were copied from photos, can anyone explain what they mean?



STEP 12



Flush glazing is achieved using a Wills Flushglaze pack. All the windows, including spares, are supplied vacuum formed in clear plastic. To use them, just cut out each window and glue it in place with PVA type glue. Ideally use 'Canopy Glue' but anything that dries clear will do. Don't use superglue though as you will probably fog the glass. Paint the edges of the cab windows black to represent the rubber seals. Finally fit the etched wipers.

The finished model received a wash of dark brown to muck up the crevices. Once dry, weathering powders completed the job.

STEP 14



STEP 15

Adding a full set of buffer beam details from the Craftsman pack improves the face of the loco but would limit its use on the layout a little as you have to lose the tension lock coupling.



Making Holes

We all have to make holes. A lucky few will have been brought up in the rarefied world of the engineer and understand the tools and techniques, but most will have learnt at our Father's knee as he bludgeoned his way through a DIY exercise. Sadly we then go on to learn through trial and error with the much smaller holes to be made in all areas of model making. That leads to lots of broken drill bits, always on a day when a replacement can't be easily found, and frustration.

Fortunately this hole making business isn't as hard as it looks. Pick the right tools and understand how to correct mistakes and the hobby becomes relaxing again. In this guide I'll show you what you need and give an idea how to use it. Obviously practise makes perfect and I can't promise you'll have no more broken drill bits, but I'll try.

One thing to understand is that drilling is not the be all and end all. Sometimes, especially when kit building, you need to make a hole just big enough for some wire or a bearing to fit into. With etched kits, the holes are designed to be undersized for the builder to do this as the manufacturing process can't produce holes accurate to a tiny fraction of a millimetre.

All the tools shown are mine, you can judge how much use they get from the state they are in and all were purchased from normal modelling suppliers, the sort you meet at shows or place orders over the phone from their fat catalogue. So, please read on, this is one article I hope doesn't bore you!



YOUR BASIC HSS (HIGH SPEED STEEL) DRILL BIT

Sold by the thousand in DIY sheds up and down the country, although this packet was picked up for a song at a model engineering show. It's an ideal all purpose tool for drilling metal, plastic and wood. Usually available in multi-packs containing useful sizes, which you will break eventually, and the other ones that end up in an old tobacco tin on a shelf. The pointed end will have an angle of 118 degrees and there is a spiral running up the side to carry away the waste (swarf in engineering terminology).



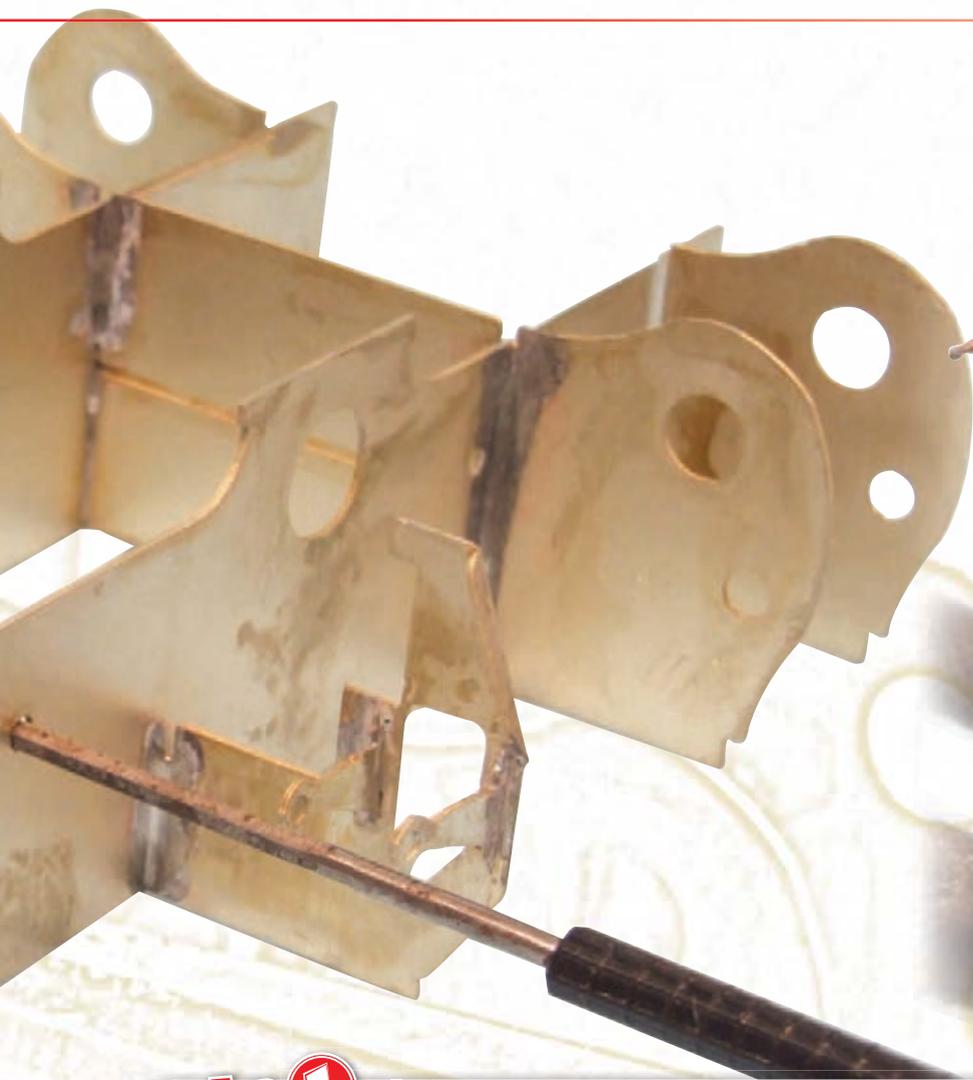
MODEL MAKING BITS

Really these are just smaller versions of the HSS bit although they can be made of a variety of materials. Usually we tend to buy them in packs containing a range of sizes. Like their larger brothers, you'll break the useful ones but these can be replaced individually. Hint: If you break a particular size, replace it with several of the same diameter. I find the 0.45mm particularly useful for 4mm modelling as it's the same size as handrail wire.



WOOD BITS

These differ from the HSS bits in that there is a central spike which can be pushed into the timber to start the hole and keep the bit from wandering. The main body of the bit then makes the hole. Ideal for baseboard work, but not much use for any other modelling jobs. Do not be tempted to try these on metal.



TIP 2

To use a pin vice, fit the bit in with as little showing as you can get away with while still drilling a hole deep enough. The less bit sticking out, the less it will flex as you drill and the lower the chances of breaking it. Pin vices should only be used between fingers, don't do what I did the first time I encountered one and put it in a hand drill because I knew no better.

TIP 1



TIP 3

If you drill a lot of holes then some modification to the end of the pin vice is a good idea to stop blisters as it rubs against your palms. The smaller vices can have a cotton bud stuffed in the end but for bigger ones I find the end from a cheap jewellers screwdriver can be modified and fitted. Just cut off the last 5mm including the swivelly bit and file it down until it goes in the end. If you don't fancy this, pin vices are available with a wooden ball in the end and are nice to use if, in my hands, a touch bulky.

A selection of pin vices. If you want your tiny drills to last you need something to hold them in. A pin vice is a small chuck designed to close up on really tiny bits. Several sizes and designs are available. I find that the black single ended ones are best, they last forever whereas multi ended versions tend to be made from softer metal and eventually won't grip the smaller drills.

All this drilling can be hard work, In fact there are some jobs such as making holes in lost wax castings, where hand drilling is impractical. Most modellers acquire a mini drill at some point and they can be a most valuable tool. If you can, get an adaptor to turn it into a pillar drill and you'll reduce your breakage rate as the bit won't be trying to move horizontally as well as vertically.

TIP 4

For some jobs, portable power is required. Your big DIY drill is probably overkill but I have found an electric screwdriver fitted with a



TIP 5

chuck is very handy for putting holes down to 1mm in various materials. The advantage of the screwdriver is that it runs slowly and is easier to get into tight spaces.

You might wonder why I have ignored hand drills. Well I don't find them a lot of use for them in small scale work. The DIY version doesn't take small enough bits and even the modelling version struggles to hold anything much under 0.75mm. There is a lot of bit flexing when using one too which leads to breakage and bad language.

TIP 6

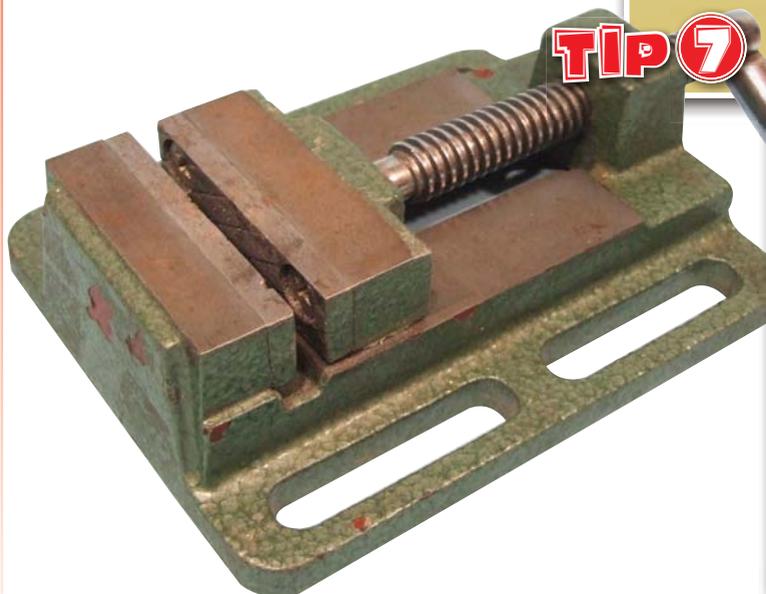
If you are going to use a power drill, please don't hold the item you are making a hole in with your fingers. Clamp it in a vice and then if the drill binds (jams in the work piece) the part doesn't whirl around taking your skin off. This is a machinists vice which sits on the bed of the pillar drill and keeps my fingers away from the moving bits.

TIP 7

TIP 8



Now for the obligatory safety note. When using a power drill, protect your eyes. Goggles or safety glasses are cheap enough, usually costing under a fiver. That's a lot less than a replacement eyeball and even less than getting scratched glasses fixed.



TIP 9



If the hole we have made isn't big enough, the first thing to do is to use a bit of the right size. Sometimes though, that isn't possible and we have to resort to a round file. Gently twisting and working the point in the hole is a time-honoured way of enlarging it and can work well. The biggest problem is that you are very unlikely to end up with something perfectly round with the centre in the same place it was when you drilled. Sadly, for much of our work, egg shaped holes aren't a good thing so we need something better.

TIP 10

Most jobs are a lot easier when you have the correct tool and in this case it is called a tapered reamer. These pointed devices have cutting edges running the length of the spike. To make a hole bigger you put the reamer in the hole and rotate it, gently pushing as you go. The hole gradually opens but remains round and centred in the same place it started. Reamers come in different sizes and sometimes have a T-bar handle for extra grip. Check the tool will go in the hole you want – not all will fit in a Romford wheel bearing for example yet they are ideal for easing these slightly when building a chassis.



TIP 11



A more subtle way of doing the same job is to use a cutting broach. This is a slightly tapered long spike, again with cutting edges running along the metal. Used in the same way as the reamer it is easier to open a hole out precisely and the sides stay closer to parallel than the more tapered tool. Available in a wide range of sizes, the finest appear very delicate but survive an astonishing amount of abuse. I've managed to open out the holes in 3mm scale handrail knobs with these – handrails that are only 0.33mm in diameter!

TIP 12

If accuracy is essential, you don't want the bit wandering around the surface of whatever you are drilling. That's not normally a big problem with wood where the bit can be pushed into the surface, but on metal making an indentation to guide the drill helps a lot. For most modelling work, simply pushing a scriber in will make enough of a dimple. For heavier jobs, a centre punch lined up and bopped with a small hammer does the same thing. Don't hit it too hard though, you aren't trying to make the hole this way!

TIP 13



If a scriber or punch isn't available, try putting a piece of masking tape on the spot to be drilled. This is rough enough to hold the drill while it starts. If using a power tool start slow and build up speed to improve accuracy.

TIP 14



Once your hole is made, the edge often has a bur around it which can prevent things like bearings seating properly. A quick twist with a countersinking bit will sort this out. Not too hard though as you don't use this tool to make the hole bigger.

TIP 15



Sometimes accuracy isn't essential so don't overlook a punch of some sort. A decent leather punch will offer the ability to make a variety of different sized holes, while even the office hole punch can be handy.

Coal Wagons

“Why?” That’s the question I’m usually asked when I talk about kit building to visitors at shows, “Surely you just buy everything ready made? There’s no need to bother building stuff up any more”. Well, in many ways, for the ‘OO’ modeller, this is true. Thanks to modern manufacturing we are incredibly well supplied with nearly everything required to stock a

layout ready to place on the track. Wish lists now feature requests for ever more obscure classes of locomotive. Models of the quality on sale now would have won gold medals in competitions 20 years ago. Even so, I and many modellers like me, still like to get our hands dirty building things.

It might be that we are just awkward and won’t move with the times. However there are good reasons to have a go at building a few kits. First, while modern RTR is good, in order to manufacture things and have them survive clumsy owners, certain compromises have to be made. Compare the sides of a kit built wagon to even the best ready made item, the kit is more delicate, the sides are a bit thinner. In the context of a large layout that might not worry you too much, but on smaller schemes with less rolling stock, small improvements matter. Not

everything is available out of the box either despite the efforts of Hornby et al. There

are still holes in the range, especially if you want something a little esoteric or are modelling the early parts of the last century.

Finally, and for me this is clincher, railway modelling is a craft based

hobby. You can’t buy an entire layout out of the box and if you could it would be boring. There is a huge amount of satisfaction to be found taking a kit and turning out a finished model. If you don’t try then you’ll never understand just how much you are missing. Okay, so there will be some frustrations and there is a learning curve, but hopefully I can help with this. Parker’s Guides navigate you through some of the worst problems – I’ve made the mistakes in the past and you might as well learn from them and not repeat my errors. Make some of your own!

Now, lets look at one of the simplest pieces of rolling stock you can build – the coal wagon. For the enthusiast there are a huge variety of these and one not produced ready to run is the French doored version. This looks a bit like the standard 16 ton steel wagon and would have run in the same trains, but will introduce a little variety into endless lines of identical wagons. To make this I’ve used a Parkside Dundas plastic kit, number PC22. When anyone mentions wagon kits someone will always profess a love for the Airfix mineral version, so I’ve built one of those as well to see the difference 40 years makes in kit design terms.

A couple of cautionary points: This isn’t going to be a cheap way to increase your rolling stock collection. Parkside will relieve you of £6.95 for the mineral wagon, only a pound or so less than a similar RTR one. Second, before anyone starts moaning they don’t have time for building things – a wagon kit takes a couple of evenings, three if you are new to this, and can be built anywhere, even on a tray in front of the telly – watching glue dry is more interesting than most programmes!



TOOLS NEEDED

A sharp knife – I prefer the Swan Moreton Scalpel with a retractable 10A blade but any small craft knife will do the job. It must be sharp though.

Glue – Both liquid (Slater's Mek Pak or Humbrol Liquid Poly) and tube cement. For the latter I've used Revel Contacta as it comes in a nice bottle with a thin metal spout. This has to be cleaned out every so often by stuffing some thin wire down it but does allow the placing of small amounts of glue. Tubes are okay but difficult to control, especially when full, as my youthful Spitfires with clouded cockpits attest! I use the cement to tack parts in place while I adjust them and then wash liquid glue over the joint. This thins the cement and welds the parts together. Do try and be sparing with both as a neater job will result, and you'll save a bit of money!

A round swiss file – For this work one from a cheap set will do.

Emery paper – Fine grades from a mixed pack.

Tweezers.

Modelling board – Either one of those rubbery self healing types or at least a nice flat bit of wood.

Something flat – Glass is the traditional material but an old CD works just as well and is probably easier to get your hands on.

PARKSIDE FRENCH DOOR MINERAL WAGON

STEP 1



The kit as it arrives. For the 'OO' modeller, Parkside kits have the advantage of coming complete with Romford metal wheels. The only things not included in the bag are paint, glue (which would be a bit messy!) and transfers. The latter tend to be bought in sheets allowing you to do many wagons. I don't worry about this as will be explained later. Instructions are included along with useful prototype details.



STEP 2



Parkside tell you to build the wagon body and then attach the underframe parts but I prefer to get the chassis working first and then plonk the body on top. First the solebars are freed from the sprue with the knife, not fingers twisting the part. Examine them carefully for flash and remove, there won't be much if any on a modern kit. The mould line along the centre will need attention especially along the top. Scrape the knife sideways whilst holding it upright along the line and a nice flat surface will result.

STEP 3

Put a drop of glue into the bearing holes and then poke the axle bearings into the hole. The glue softens the plastic a little so there is no need to drill out the hole. These 'top hat' bearings will seat themselves so don't press too hard and don't use a hammer or other blunt instrument. I find a push with a pen or pencil in the centre works nicely.



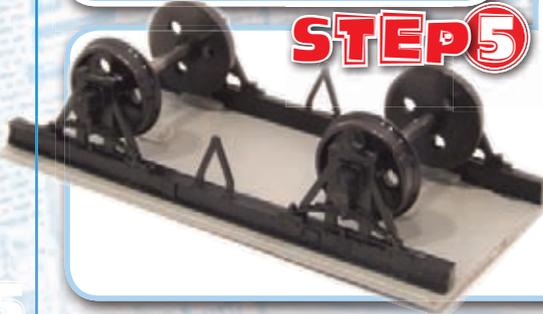
You might need three hands for this bit. Fit the second solebar with cement and then trap the wheels between the two. Slide the part back and forth so that the axles are at 90 degrees to the side and rotate freely. A few dots of liquid glue will fix it enough to test the chassis on a bit of track. Also test on the flat surface and make sure all the wheels touch. If needs be, twist the chassis to achieve this. When you are happy let things dry properly. Trim the solebar ends flush with the end of the floor.

STEP 4

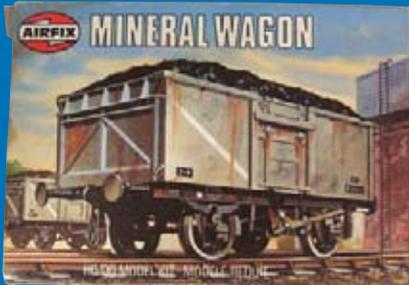


Attach one sideframe to the chassis. It will be a bit too long, a result of some shared mouldings across the range I suspect. Allow about the same amount to overhang each end and we trim them back later. This is the reason I do the chassis first. The solebar butts up against the lugs moulded in the floor to aid positioning. Let this side dry fully and make sure it is either vertical or leaning in a touch but not splayed out.

STEP 5



AIRFIX MINERAL WAGON



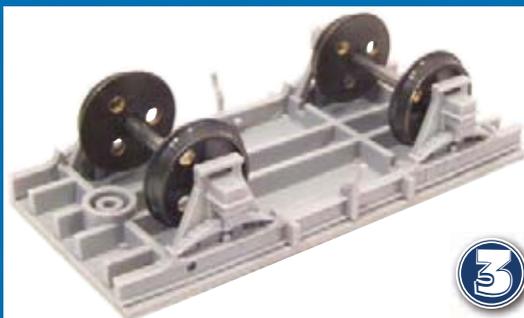
First produced in 1961, the kit I built dates from the early 1970s and features an atmospheric, if slightly inaccurate, Roy Cross painting on the box. The parts are noticeably chunkier than the Parkside kit. You get transfers as well as an offer to join the Airfix club once fronted by Dick Emery (as your Dad). Millions of these kits were produced and you'll find them on pretty much every second hand stall and in the back of most modeller's cupboards. Of course Dapol still make the



One thing that has changed since the kit was first issued are the wheels. The originals may have been okay in their day but now we like to roll on metal treads. To this end I'll be using a spare set of Romfords and fitting the chassis with bearings. I think a set of Hornby wheels will fit if you want to save a bit of cash.



Sadly the new wheels don't just drop in. To fit the top hat bearings I drilled out the top of the slot provided for the axles in the axleboxes using a 2mm drill. These were then fitted and one sideframe attached to the floor in the same way as the Parkside kit. Testing the second side a problems popped up – the axles were too long. Maybe if I'd used place bearings (without the top hat 'rims') I might not have suffered this but it was too late. Engineers will want to look away but my solution was to remove the wheels and file most of the pinpoint axle end away. Once this fitted I restored the point with a file. It's not pretty but works surprisingly well.



The wheels went back on the axle and the back to backs were checked with a gauge (compare them with another reliable wagon if you don't have a gauge). Unlike the Parkside, the solebars locate very positively in the floor so you don't need to worry about positioning.

STEP 7



The buffers come from the grey sprue. The shanks go through some rings before plugging into the housings on the beam. Before cutting the rings off the the sprue, check the buffers fit and open out the holes with the swiss file as required. Assemble the parts dry and wash over with liquid glue, capillary action will draw the glue where it's needed.

STEP 6

Remove the body parts from the sprue and test fit one end. Make sure this is going to fit properly with the same amount poking out of each side of the floor. If it doesn't, remove a little plastic from the back of the buffer beam to allow the end to be slid sideways. Once happy, stick in place. Then go and have a cup of tea while the glue hardens, it makes fitting the sides and other end a lot easier. Test fit all these parts before introducing glue. Blu-tack can be invaluable at this point if you find you need more hands.

STEP 9



The brake gear can be improved by replacing the safety loops with parts bent up from staples held in place with superglue. This isn't vital and if it's your first wagon I'd leave well alone. Whatever, flip the wagon on its back and glue the brakes in line with the wheel treads. The brake lever fits on the outside – test this without glue as I had to trim the back of the V hanger a touch for a good fit.

One word of advice. Never use the tension lock couplings that come with plastic kits, they are usually hopeless, it's far better to use the real thing. Parkside sell a pair of Hornby couplings along with nice adaptors that simply glue in at the end of the vehicle. Bachmann couplings and adaptors are also available. If you've some spare couplings of course you can just pack these into position with some bits of plasticard.

STEP 10



The finished wagon ready for paint. At this stage I'll be inclined to test it on the layout as it will need some weight underneath the floor. Sheet lead or fishing weights are best for this held in with superglue. Try to match the weight of your other wagons. There will also be some bits left over on the sprue which you might like to remove and squirrel away in a box. The buffers and brake levers are certainly worth saving for future projects.

4



Buffer beams are sperate from the body so once you've decided the chassis is flat, they are glued in place. I also fitted the brake gear at this point having replaced the safety loops with staples again.

5



Due to its age the kit comes with Anita type couplings – great if you want to connect with Hornby Dublo stock but a bit useless for most of us. A spare pair of Bachmann ones were fitted by glueing plasticard packing to the underside of the floor and supergluing the coupling to this. Check the height of these against your other rolling stock before the glue is set too hard to adjust them.

6



The body assembles easily enough but if you plan to run the wagon empty then you will need to remove the part numbers moulded into the inside faces of the sides and ends. Airfix decided to make the doors work so you need to keep the glue out of the hinges. Of course if you prefer a slightly more scale appearance, glue the doors up and trim the hinges – as supplied they are a triumph of function over form and do nothing for the finished model.

Painting and finishing. Nothing exciting here – Humbrol number 64 for the body and matt black (33) for the chassis. Try and keep the paint off the wheel treads and if any does get on, remove it when dry. You will notice if you don't!

Airfix supply transfers with their kit. The ones I had were a bit thick and modern versions would be a better bet. Lots of suppliers can help here. Remember that the white stripe indicates the end with the opening door. The wagon number always sits on the left hand side as you look at it – not on the right as the box art shows!

The French door wagon throws up an interesting problem. In BR days the wagons weren't allowed to be used for ballast or other heavy materials, the doors were prone to being clobbered by passing trains if the PW gangs used them. To this end

there was a black patch on the side which had the following text painted on in white: "Not to be used for PW ballast or other engineers materials". I'm not aware of a transfer sheet that includes this text, nor did I fancy my chances at putting individual letters to make up the text.

My solution was to hand paint both this text and the numbering. This sounds scary except that I never worry too much about making this legible. Simply paint the digits the right size with the finest brush you can lay your hands on. Surprisingly this will look pretty good in the context of a layout. With so much for the eye to take in you don't (or at least I don't) notice this subterfuge, especially if the wagon gets a good coat of weathering. After many years of exhibitions, I'm pretty sure most people don't spot this either.

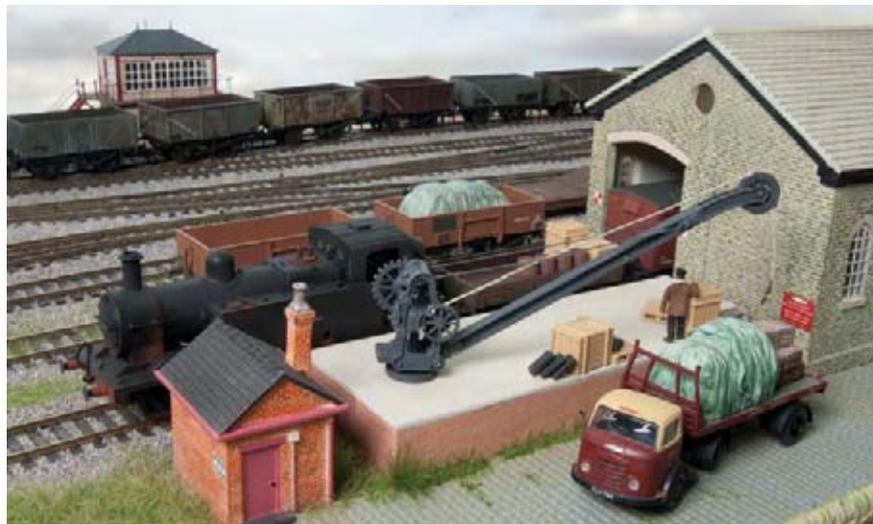
Hopefully this has encouraged at least one person to go out and have a go. If that person is you, I hope you enjoy the process of building a kit or two. Don't rush it, take pleasure in the work and be proud of the end results.

Loading Dock

Since the floor of a railway wagon is four feet above the top of the rails it stands upon, loading and unloading normally takes place with the aid of a platform. In model form, we could use a commercial item intended for a station, but these were usually much grander than those in the goods yard.

You'll often want an odd size or shape to fit a specific space on the layout. Fortunately, scratchbuilding a platform is quick, simple and cheap. With a bit of practise, you can knock one of these out in a hour. It can even reflect the local area – I've used brick sides but you could just as easily cover them in one of the many varieties of stonework available.

Don't forget that people loading the backs of lorries will also need to be raised up in the same way so you may find uses for several models.



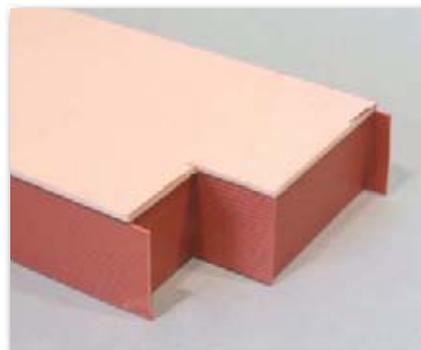
The completed loading dock installed on 'Topley Dale'. Some wooden steps from www.modellingtimbers.co.uk and a Peco crane finish the model off.



STEP 1: The main material used is artists' mounting board. I buy it as Daler Board in big sheets from the art shops but offcuts from picture framers would be big enough for this job. The main parts are a top and sides.



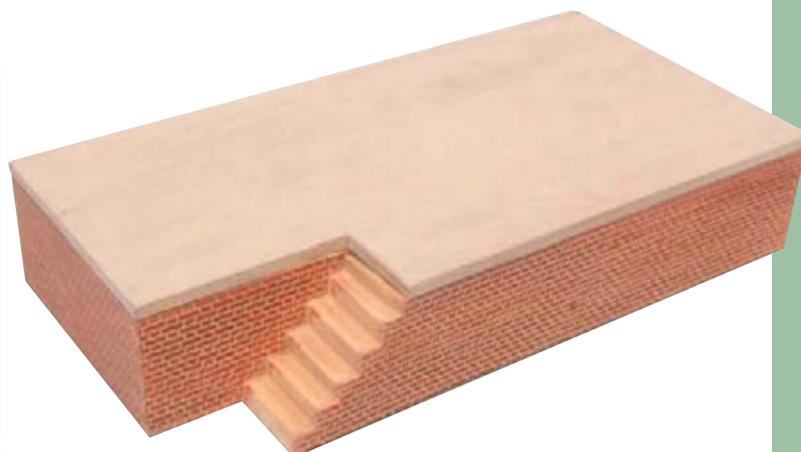
STEP 2: The sides are covered with Slater's plasticard fixed in place with a solvent-free adhesive. This is also used to stick the parts together.



STEP 3: When cutting the plastic sheet, allow for overlaps at the ends. Run liquid glue down the corner, let it dry and then trim for a perfect finish every time.



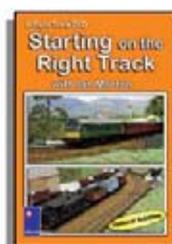
STEP 4: Underneath you can see just how simple a job this is. No bracing is required apart from a couple of card offcuts along the long sides to hold them in place while the glue dries.



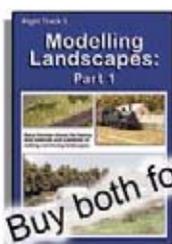
STEP 5: Incorporating steps into the design isn't difficult as you can see on this platform made for a different layout. The treads are just bits of the card laid on top of each other. Overlap the bricks in the same way as on the corners and then trim them back when the glue has dried.

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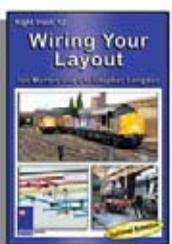
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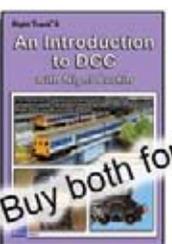
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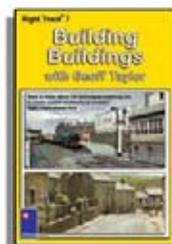
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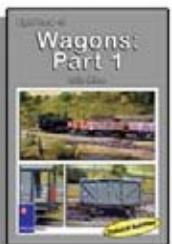
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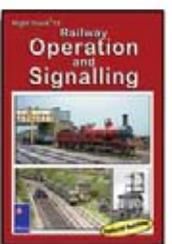
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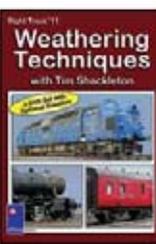
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Killin Pug

Don't fancy getting your hands dirty making models? Well worry not, you can always consider paying someone to do it for you. This project came about because I spotted a finished locomotive on eBay. Despite not being put together very well, it still sold for £130 and there were several bidders. I couldn't believe it and wondered, "How difficult a model is this to build?"

Dean Sidings produce a wide range of resin bodies that fit to ready to run chassis. Sometimes the underpinnings will need a little bit of modification but nothing too difficult. In the December 2009 issue of *Hornby Magazine*, and reprinted on page 50 of this publication I wrote up a Silver Fox kit for a Hunslet diesel shunter. That was a single part body that sat on a Tenshodo SPUD. Essentially Dean's

kits follow the same principle but most importantly, they produce steam engines.

The Killin Pug was an 1885 Drummond design based on the successful Caledonian 0-4-0 'Pug' tank locomotives. These were often paired with small and apparently locally made tenders to increase the engines very limited coal capacity. Extending the frames to incorporate a set of trailing wheels and stretching the body to match seems to have been an attempt to improve this situation so they could be used on the Killin Junction to Killin Pier service. Two locomotives were built, Nos. 262 and 263. These lasted into LMS days as Nos. 15000 and 15001. The latter was still in use in Inverness in 1947 while its brother was withdrawn in the early 1930s.

Opening the box containing the kit, I was pleasantly surprised to find a very nicely cast resin body (the Milky Bar coloured lump) and lots of whitmetal parts, all of which are pretty cleanly moulded. To this I had to add a Hornby Caledonian Pug chassis – anything from that range with outside cylinders will do the job. Mine came from a web auction for a fiver giving me a total cost for the parts of under £40.

Also included are some instructions which extensively cover the chassis modifications with some very nice hand drawn diagrams. Dean Sidings are candid about the resulting

model and point out that what you end up with won't be a perfectly scaled miniature but one designed to look good within the limitations imposed by the incorrect length chassis. Looking at the finished result and comparing it to the picture I have, it's going to keep everyone other than the most fastidious happy. They will have to go and scratchbuild something even though the best plan, from an old *Railway Modeller* magazine, isn't that accurate itself.

With this caveat, the model I produced looks, to me, very good indeed. It certainly captures the essential look of the real thing. It's a pretty looking beast too and the unfinished model sitting on my workbench at a recent *Hornby Magazine Live!* show was very popular with visitors.

Total build time for the model was less than five hours. The only 'special' tools required are a selection of small drills – 1, 1.5 and 2.5mm – and a small saw for the chassis modifications. I used a piercing saw, but a fine toothed X-acto type one would probably be a better bet. Even painting will be easy as the LMS livery was plain black so a spray can from a car accessory shop will take care of that. Mind you, if you want to have a go at the earlier Calley Blue version, then you will need to be a far better painter than me.



REFERENCES

Railway Modeller, October 1966 – Useful plan and history
Back Track Volume 3 Number 5 – Excellent side-on photograph

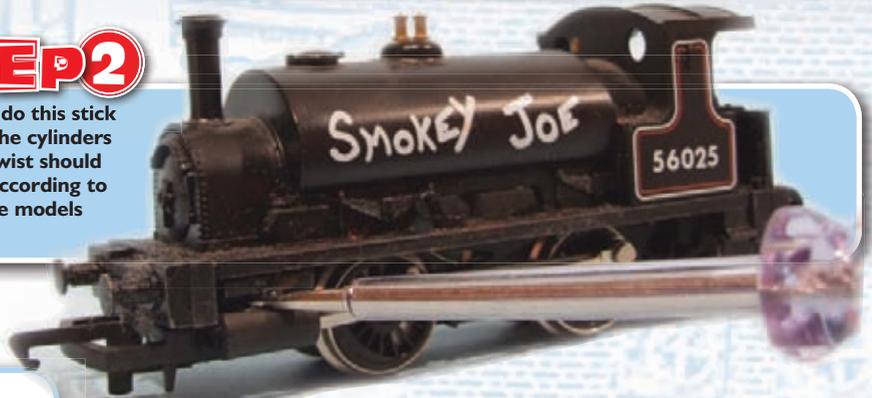


STEP 1

The raw materials, a working but scruffy Hornby 0-4-0ST and the components from the Dean Sidings kit comprising the resin body and cab interior, whitetail detail parts and a set of pony wheels.

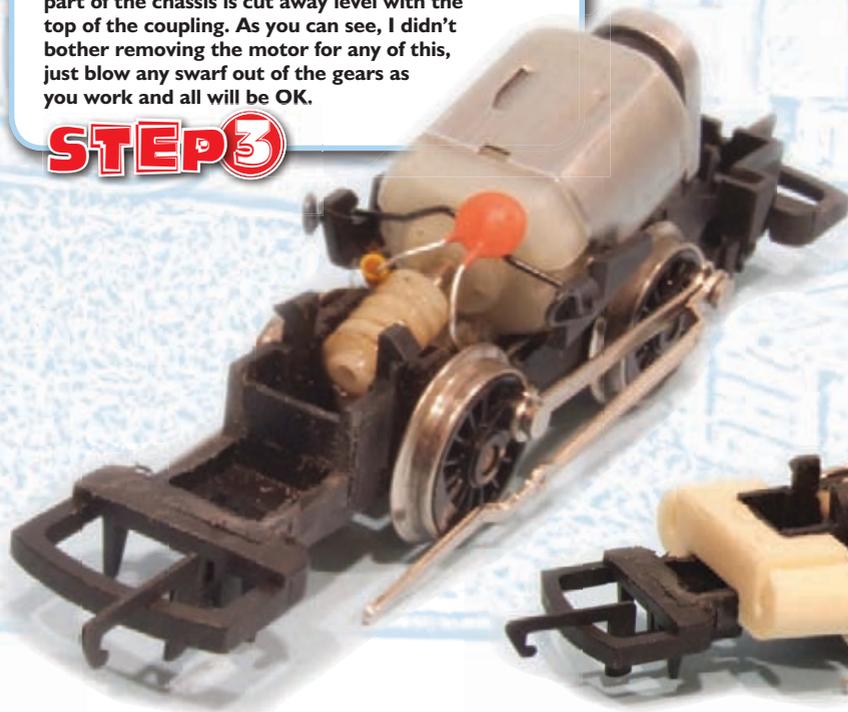
STEP 2

Work starts by removing the body from the Pug. To do this stick a small flat bladed screwdriver between the top of the cylinders and the bottom of the lump above them. A gentle twist should see the body pop off. This is the approved method according to the Hornby service sheets so if you have one of these models and wondered how to get inside, this is how.



Construction begins by cutting the old cylinders off with a saw. The diagrams with the kit make this easy to do. With the cylinders off, the front part of the chassis is cut away level with the top of the coupling. As you can see, I didn't bother removing the motor for any of this, just blow any swarf out of the gears as you work and all will be OK.

STEP 3



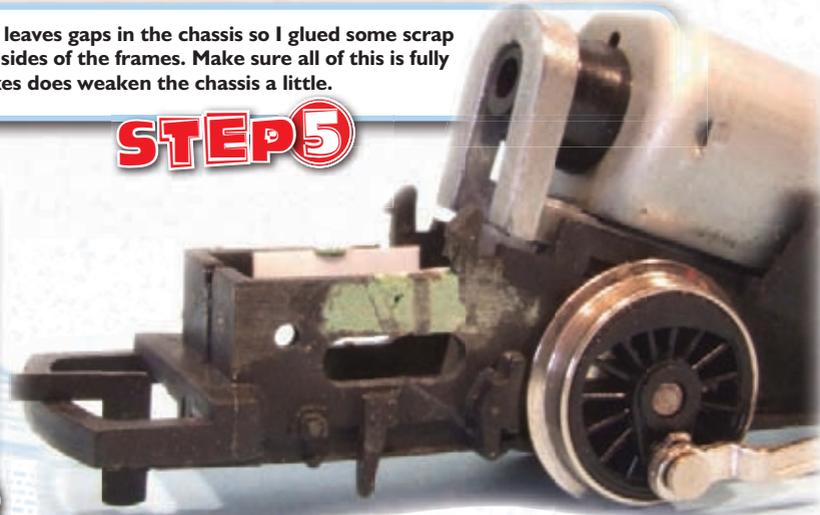
STEP 4

New resin cylinders are superglued in place. The con rods have to be shortened by 4mm (I used a pair of wire cutters and finished the edges off with a file), the bend in them sharpened slightly and the pip on the back filed smooth. There is an intentional slight rake to these new items as there was on the real loco. At this point quickly test the model to make sure everything is still moving freely.



At the back, the sandboxes have to be removed with a saw. This leaves gaps in the chassis so I glued some scrap plastic over the back of these and then used filler to smooth the sides of the frames. Make sure all of this is fully dry before moving on to the next stage as removing the sandboxes does weaken the chassis a little.

STEP 5



STEP 6

The rear coupling is cut away and a slot made to take the trailing wheels. Test fitting the axle should see it slide up and down freely, if not, make the slot wider or the wheels won't rotate.

The wheelset is supplied unassembled. Check the axle end for burrs and smooth with emery paper if you find any. Then push the wheels on carefully, try and keep them at right angles to the axle. According to the Double O Gauge Association website, the backs of the wheels should be 14.4mm apart. I'm using a gauge from SMP to measure this, but you'll probably get an accurate enough measurement by comparing them to an existing RTR set of wheels.



STEP 7

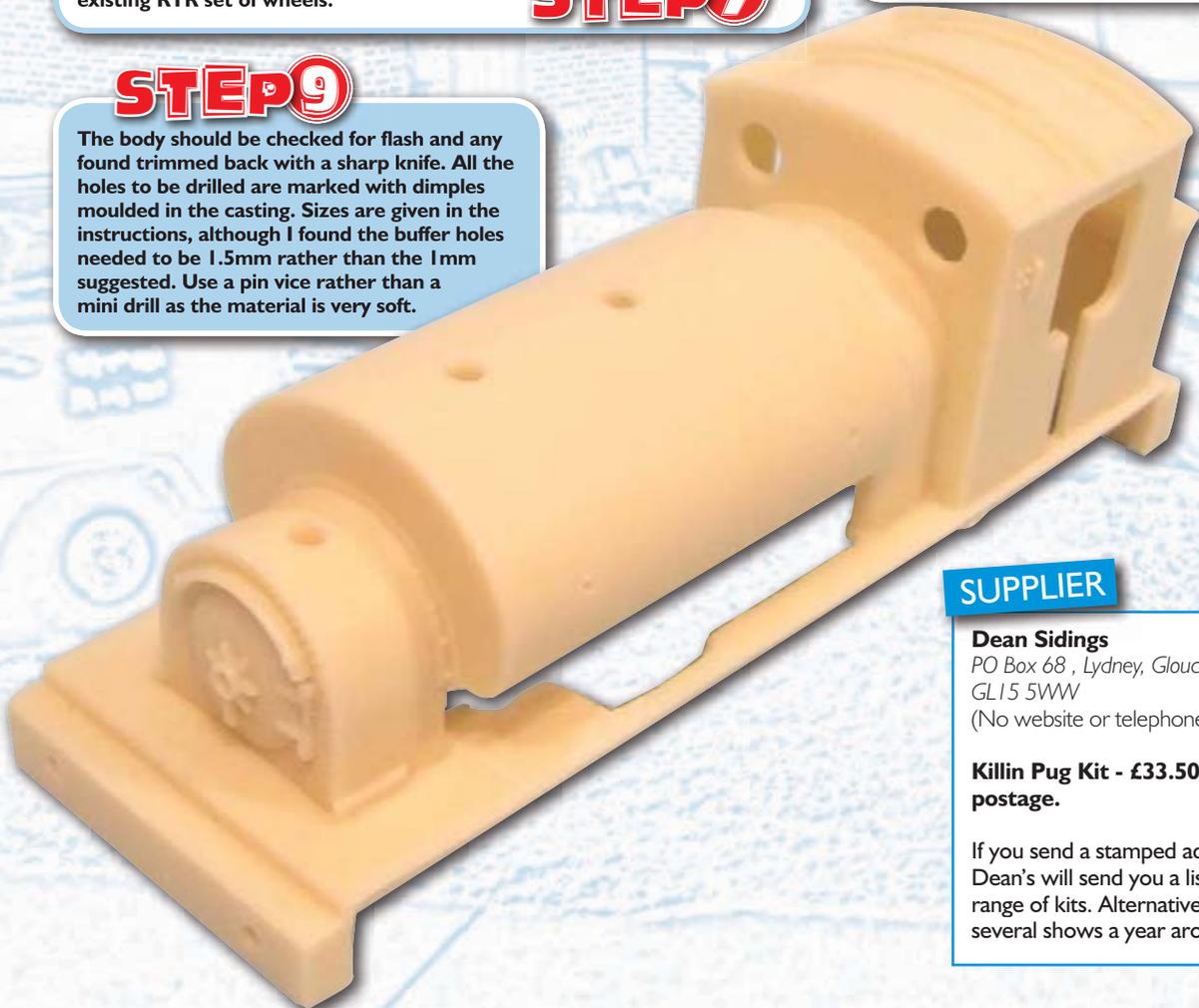
STEP 8

The axle fits in the slot and is retained by a scrap of plastic glued across the bottom. At this point it's worth giving the chassis a spin around the layout to make sure all is well. If the trailing wheels derail on pointwork then try moving them in or out a touch on the axle.



STEP 9

The body should be checked for flash and any found trimmed back with a sharp knife. All the holes to be drilled are marked with dimples moulded in the casting. Sizes are given in the instructions, although I found the buffer holes needed to be 1.5mm rather than the 1mm suggested. Use a pin vice rather than a mini drill as the material is very soft.



SUPPLIER

Dean Sidings
PO Box 68, Lydney, Gloucestershire,
GL15 5WW
(No website or telephone)

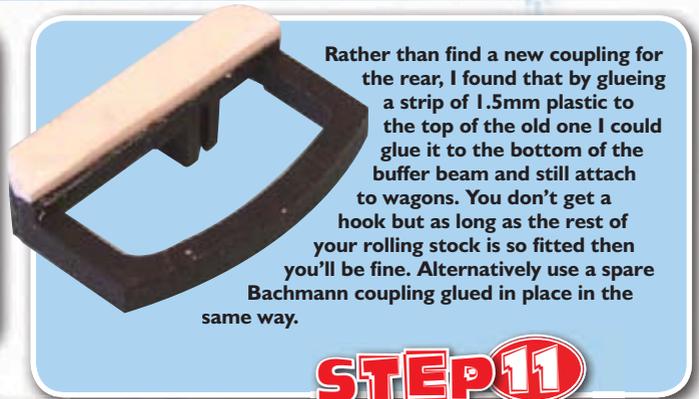
Killin Pug Kit - £33.50 plus £3.50 postage.

If you send a stamped addressed envelope Dean's will send you a list of the current range of kits. Alternatively they attend several shows a year around the country.



The cab interior is a separate item which makes painting a whole lot easier. The excellent supplied crew and steps are glued in place. The latter should be central to the cab door and at the edge of the floor.

STEP 10



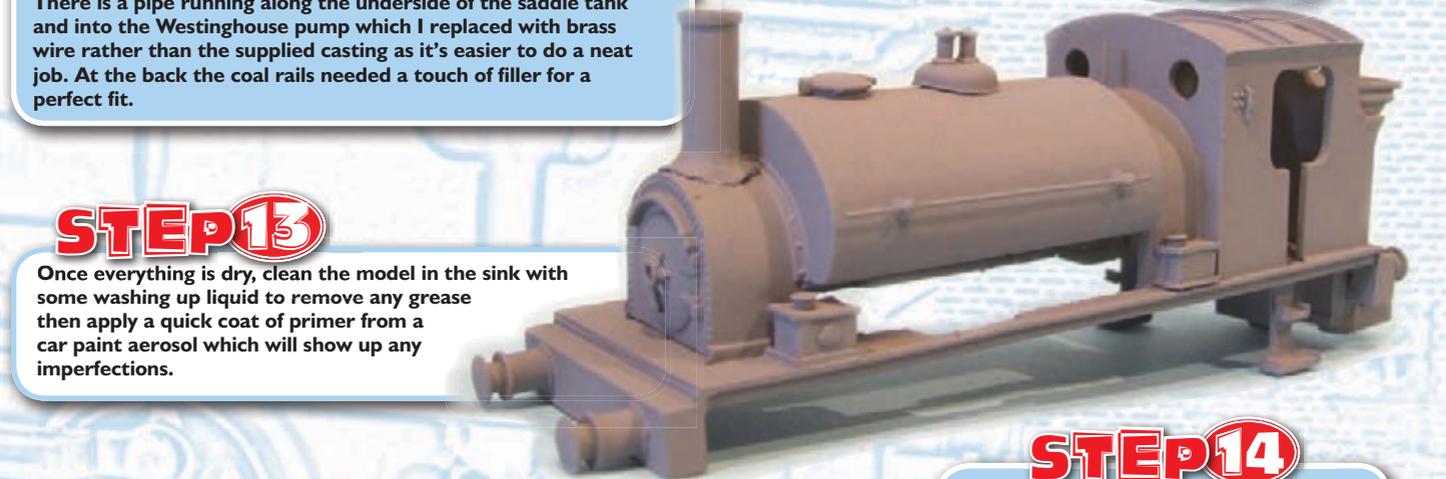
Rather than find a new coupling for the rear, I found that by glueing a strip of 1.5mm plastic to the top of the old one I could glue it to the bottom of the buffer beam and still attach to wagons. You don't get a hook but as long as the rest of your rolling stock is so fitted then you'll be fine. Alternatively use a spare Bachmann coupling glued in place in the same way.

STEP 11



STEP 12

The castings are glued in place with superglue. Two sets are provided so you can build the locomotive in early or late forms. I've used the LMS version which means parallel sides, buffers and a less than pretty stovepipe chimney. Make sure this part is vertical before the glue dries – epoxy resin might be better here as the slower drying time gives opportunity for adjustment. There is a pipe running along the underside of the saddle tank and into the Westinghouse pump which I replaced with brass wire rather than the supplied casting as it's easier to do a neat job. At the back the coal rails needed a touch of filler for a perfect fit.



STEP 13

Once everything is dry, clean the model in the sink with some washing up liquid to remove any grease then apply a quick coat of primer from a car paint aerosol which will show up any imperfections.



STEP 14

Refitted to the chassis, the model looks pretty good. A small plastic part is included to fill in the gap at the back of the chassis behind the rear buffer beam. If you plan to spray the model, I'd take the body off again to avoid getting paint on the wheels. The motor sides and that suppressor could do with a touch of the brush to make them less obvious while you are at it, but to be honest the photo makes these more obvious than they are in real life.

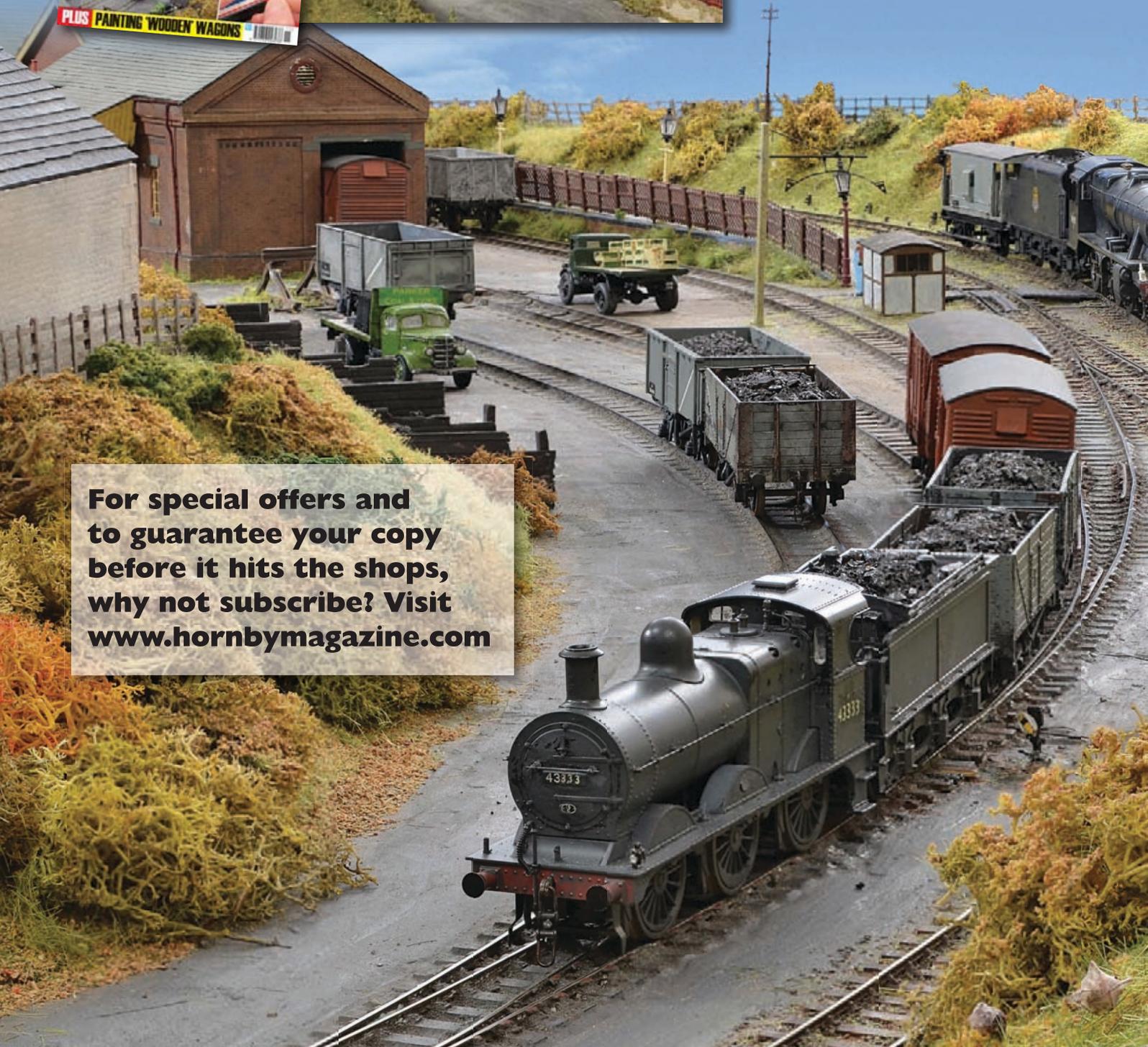
CONT. ON P32

HORNBY magazine



The hands-on magazine for modellers of all ages, *Hornby Magazine* presents detailed shows-you-how articles, tips and diagrams to help modellers get the most from their hobby, whether they are just starting up or re-entering after time away.

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Killin Pug

CONTINUED

So the basic kit for the Deans Sidings Killin Pug was now complete (continued from page 29). While the model looked good, its underpinnings were not as good as those that my other kit-built engines sit on. The Hornby wheels are chunky, the slide bars non-existent and performance a bit too Formula One for my tastes. This isn't a criticism of the original kit which is designed to allow anyone to build the loco and does it very well. The great thing is that it also allows idiots like me to go on and make an even better model on our own.

Anyway, I knew that Branchlines produced a kit years ago to rechassis the Hornby 0-4-0 and wondered if this could help with the shortcomings. It's a good introduction to etched chassis building despite being eight years old. Unlike my normal columns, I don't pretend that this is a beginner's project. If you've never done any modelling at all then soldering the mechanical bits of a loco together isn't a good place to start. However, if you do know which end of an iron gets hot then you could do this as long as you take it carefully. The instructions that come with the chassis kit are excellent. An exploded diagram shows you where everything should go and the accompanying text tells you how to put them there.

If you do decide to have a go, I recommend the purchase of some London Road Models 1/8 Alignment Jigs. £3.50 gets you three aluminium axles with tapered points on the end to help set the chassis up. I've used mine for years and they haven't worn out yet.

I've also made a big compromise on the wheels. Should you want a truly accurate model then Branchlines will sell you some Gibson plastic centred wheels that are a perfect match for those fitted to the prototype. If you can use these then you probably don't need these then these instructions! I've employed Romford's excellent metal centred wheels that automatically quarter using their square ended axle. Being metal you can take them on and off as much as you like when fiddling with the chassis, something not possible with plastic centred wheels. You do pay a small premium for this convenience but I've always felt it worth it.

The finished model has been painted in black and lettered with some pressfix transfers followed by a light weathering with a waft of brown, rust and dark grey from the airbrush.



STEP 1



Branchlines produce a kit designed to fit underneath the standard Hornby Caledonian Pug locomotive. You can buy as little or as much of this as you require. In my case I ordered absolutely everything including motor, wheels and gears.

CONTACTS

Branchlines
PO Box 4293, Westbury, BA13 9AA
Tel/Fax: +44 (0) 1373 822231
Chassis kit - £22.00 plus postage. Also needed are motor, gears and wheels.

London Road Models
PO Box 643, Watford, Herts, WD24 5ZJ

www.scalefour.org/londonroad/

STEP 2



The first step in building any steam locomotive chassis is to make up the coupling rods. Like most kits you are required to laminate two parts to produce a nice chunky rod. In this case the designer has made things easy – simply fold the two parts against each other and run some solder around the edge. The connecting rods are made up in the same way.



The chassis is made up of sides that are joined with spacers. Because the Killin Pug is longer than the standard version I had to make an extension out of nickel silver sheet. You can see this on the extended version at the bottom compared to the standard version at the top.



STEP 3

Solder the appropriate (OO, EM or P4) spacers to one side of the chassis. Then attach the other. The actual soldering isn't any harder than anything else you've seen in these pages so far, you just need to keep checking everything is square and the top of the chassis is flat. Tack the parts in place and lie it on a flat surface to make sure all is okay.



STEP 4

Put the bearings in and then to make sure everything is accurate, I use the London Road Models aluminium axles. Push these in and then slide the coupling rods over the tapered ends. Then solder the bearings in place. This ensures the wheel centres will be the same spacing as the rods leading to good running.

Romford wheels come in insulated and uninsulated versions. Make sure you use two identical ones on each side, it's easy to get wrong and frustrating I can tell you! The insulation shows as a ring between the spokes and the rim. They are screwed to a square ended axle using the clever round nut shown. A proper slotted Romford screwdriver is invaluable for this. It also screws the crank pins into the faces of the wheel. Of course, because all of these parts are metal, you can fiddle around as much as you like without damaging them.



STEP 5



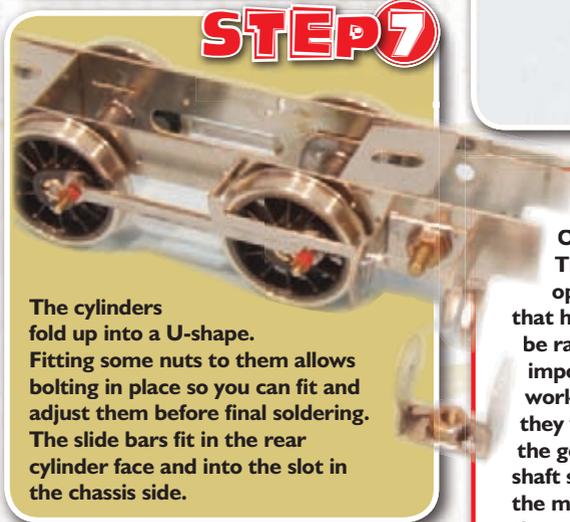
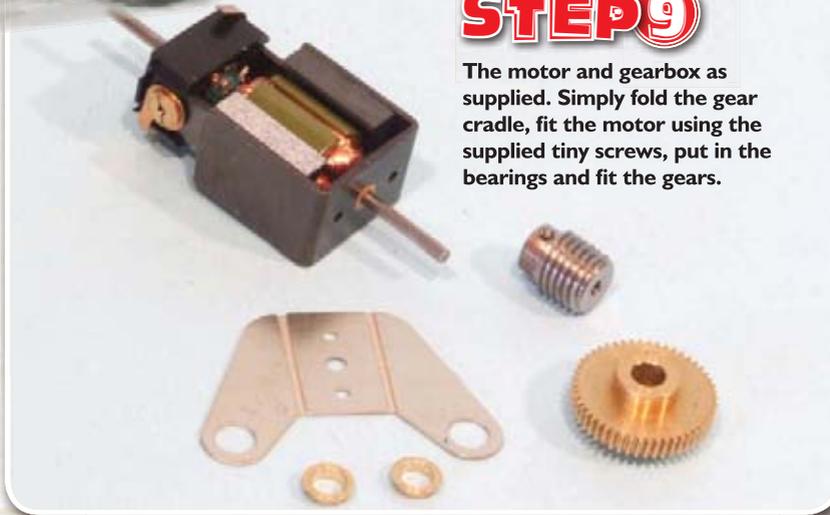


STEP 6

With the wheels in the chassis (the rear set came from the Dean Sidings kit) you can put the rods on and see if everything is moving freely. I retain the rods with some insulation stripped from wires so I can take them off if the holes need to be enlarged very slightly to stop things binding.

STEP 9

The motor and gearbox as supplied. Simply fold the gear cradle, fit the motor using the supplied tiny screws, put in the bearings and fit the gears.

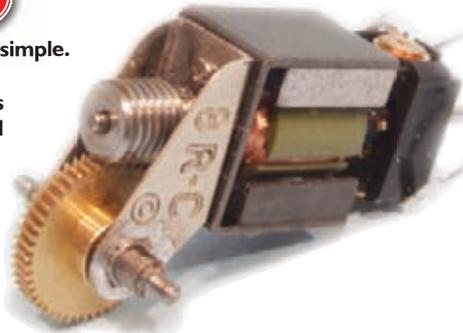


STEP 7

The cylinders fold up into a U-shape. Fitting some nuts to them allows bolting in place so you can fit and adjust them before final soldering. The slide bars fit in the rear cylinder face and into the slot in the chassis side.

STEP 10

Of course things aren't quite that simple. The gear mesh was very tight so I opened up the holes for the screws that hold the motor in place so it could be raised very slightly. This is an important stage as the unit should work without any tight spots, they won't 'run in' and you'll ruin the gears. I removed most of the shaft sticking out of the back of the motor using a needle file to cut through it.

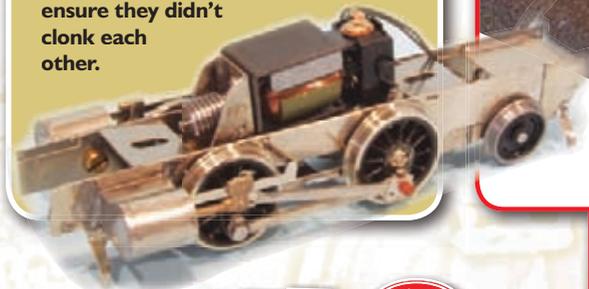


I couldn't resist test fitting the chassis to the body at this point. It shows that something will need to be fitted to fill that space under the boiler. At this point everything was looking pretty good though.

STEP 8

STEP 11

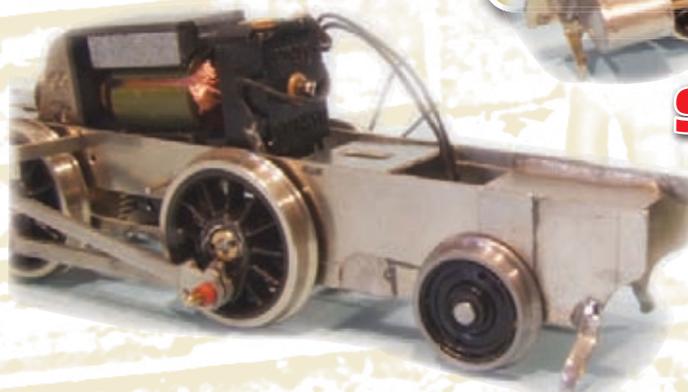
The power unit fits to the front axle and the chassis can then be tested using power leads from a controller to the motor. Any tight spots need to be ironed out now. I found the space behind the slide bars and front crank pin to be very tight and filed them down as much as possible to ensure they didn't clonk each other.



STEP 13



Under the saddle tank I filled the gap with some 2mm thick plasticard. To this was glued 20mm diameter brass tube split in four – a job that would have been a lot easier if I'd had some plastic tube instead. The gap left allows the motor to slide in. This means that the boiler is wider than it should be but you can't tell from looking at the side of the loco.



STEP 12

At the back end some guard irons were made up from bits of scrap etch. The wheels are just slopping around in the slightly oversize holes, but I have wondered if I should put a springy wire on top. It seems to work okay on the track though.



STEP 14

At the front the moulded smokebox handrail was replaced with some 0.45mm brass wire and a couple of handrail knobs. The smokebox handle is made up using an etched wheel from Bill Bedford and a couple of bits of wire. The extra relief doing this sort of job provides does improve the locomotive's 'face'.

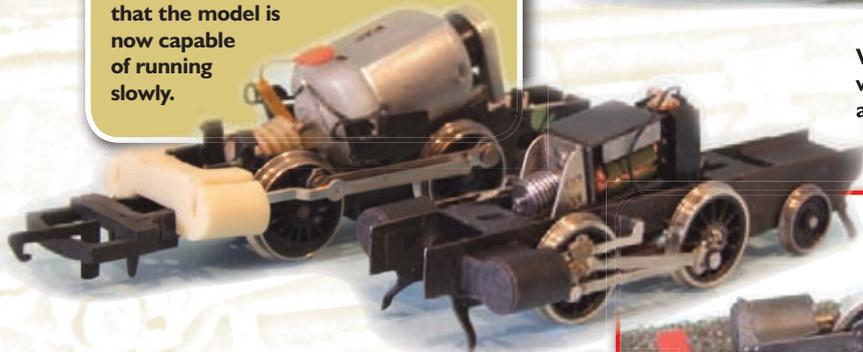
STEP 17

The chassis has to be stripped of mechanical components for painting. Mask the slide bars and stuff paper in the bearings then spray with primer. Precision weathered black and a little dry brushing look good next. Then it must be left to dry fully before re-assembly.



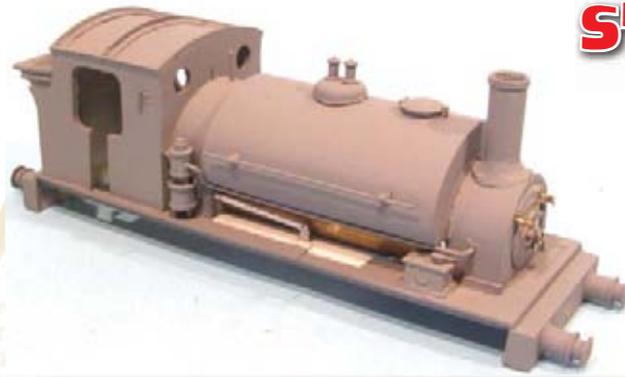
STEP 18

The modified Hornby chassis on the left compared with the finescale version on the right. The biggest visible improvement is the slide bars and proper connecting rod arrangement. What you can't see is that the model is now capable of running slowly.



STEP 20

Power is picked up from the uninsulated side by soldering a lead to the chassis. On the other, a piece of veroboard is screwed to the bottom and a phosphor bronze wire bears into the wheel rims. You can use something similar to add pick-ups to older RTR locos.



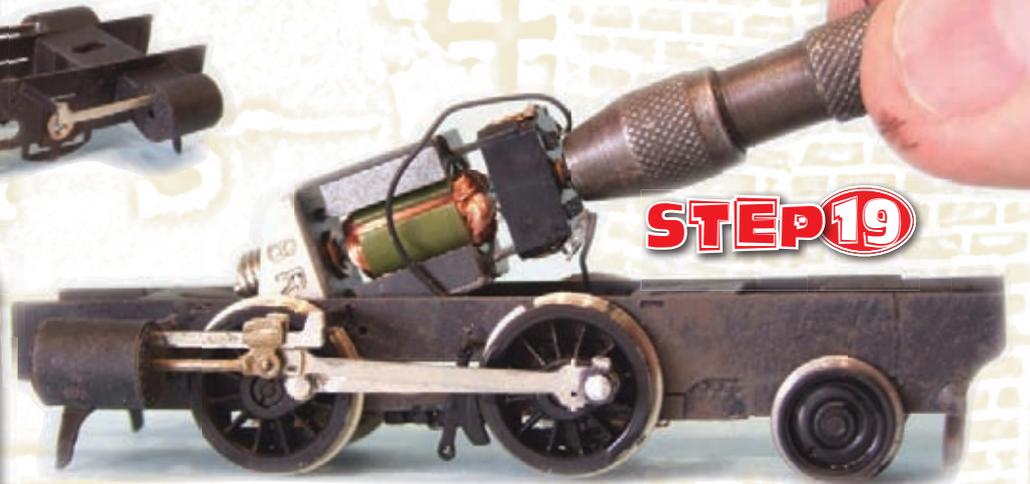
STEP 15

An etched reversing rod is provided in the kit and I glued it into place following the plan. Before this the footplate is extended with plasticard as I don't need the enormous gap required to slide the Hornby retaining clip through it.

Putting the model together and it's really looking good. On this side there is a white metal sandbox from the original kit – the Westinghouse pump got in the way of it fitting on the footplate – like all the others on the prototype.



STEP 16



STEP 19

When testing the chassis, turning the motor slowly by hand will show up problems far better than having things whirl away under power. Using a pin vice on the end of the shaft makes it easier to do this.

Once upon a time it was traditional for model makers to cut their teeth on a fleet of Airfix Spitfires before realising that railways were a much better subject. Those skills picked up were what are described in modern business parlance as 'transferable' to the new hobby. Today's youth, don't seem to want to fill their bedroom ceilings with a tiny air force so when tempted by a plastic wagon kit of the sort I have written about, are nervous about tackling it.

This is nothing to be ashamed of, we all have to start somewhere. While I enjoy a wagon kit, if the assembly isn't reasonably good then the resulting running won't be satisfying. Whilst you can take the underframe off a van and use it as a grounded body, none of us need that many of them.

With this in mind, I'm covering basic plastic model construction using a couple of building kits as my examples. As long as the finished products look building-shaped they can find a home on the layout. Any dodgy joins can always be hidden with a bit of plant life – model ivy hides a multitude of sins!

The first subject is a Coopercraft weighbridge. The prototypes were found in goods yards all over the steam age railway so that the tonnage in a wagon could be checked in case someone had supplied a little less than they claimed on the invoice. With a little modification (scrape the rail chairs off and fill in the resulting holes) you can also use it for a lorry weighbridge.

The second kit is the Wills platelayers' hut. Every layout needs one, just make it look more dilapidated if your tastes tend towards modern image, there are still plenty of hut remains on the lineside even today.

Most people's problems with plastic kits occur when glueing them together. In the old days we would wave tubes of plastic cement around, applying it like toothpaste and then being surprised when it squigged out of the joins. The trouble with tubes are that they allow the glue to flow too freely and nowadays there are much better alternatives. Both Revell and Humbrol make very nice cement in bottles with fine metal nozzles. I've used Revel Contacta here but both work well. If the nozzle blocks, push some fine wire down it to clear.

The alternative is a liquid glue. For many years modellers have favoured Slater's Mek Pak, although other alternatives are available. Applied with a brush into a joint, the solvent softens the plastic so that when the joint is made the material fuses. The joint is made very fast and wonderfully cleanly.

The speed of the liquid glue is also its undoing sometimes. Whilst a dry run with plastic parts is a good idea to make sure they fit, you often need to make tiny adjustments which are harder if your solvent has already set. Also, if you are not the fastest worker in the world then the glue can 'flash off' before you get the bits together.

What we need is a third way. Stick the parts together with a tiny amount of cement and then once you are happy, introduce some liquid glue into the join with a brush. Capillary action will draw it into the join, thinning the

A tale of

TWO HUTS



thicker glue and speeding up setting time.

Finally in glueing, if the stuff does squidge out, leave it alone. Let it dry and you'll find the excess will smooth away pretty cleanly. Try this when it's wet and the result will be horribly messy. I have the ruined Spitfires to prove this...

Of course building a kit isn't just about glue, you need to paint too. One way of producing bricks is to 'dry brush' the surfaces. This technique involves picking up paint in the normal way on an old brush and wiping it off on a cloth. Then work the bristles over the model and the paint will be pulled from them on to any raised areas. It's a very valuable technique but requires practise. A couple of

small huts will make you pretty good though.

Finally, break out the weathering powders and 'dirty' the models before you take them near any of your precious rolling stock. Buildings have an extra advantage in that if you want to wash the muck off, you can usually stick them under the tap with less worry than trying the same trick with a locomotive.

Basically, I've tried to use a few of the techniques that I employ on rolling stock to complete these little buildings. A few evenings' work and you too can have glue and paint covered fingers with delicate dusting of rust coloured powder. And a couple of little huts to be proud of!

STEP 1



On the left, the Coopercraft weighbridge kit and on the right, the multi-coloured Wills Platelayers hut.

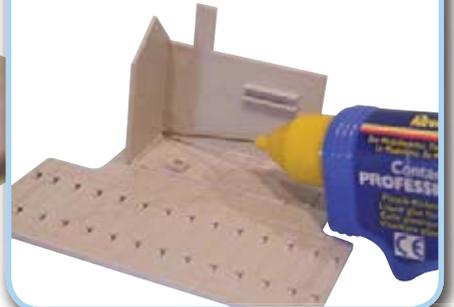
STEP 2



Kit parts should be cut from their sprues with a sharp knife such as a scalpel but sometimes there are thick moulding pips to be trimmed away. For this a pair of flush wire cutters is ideal. I use a set that are a bit too worn for wire but will still cut the softer plastic.

STEP 3

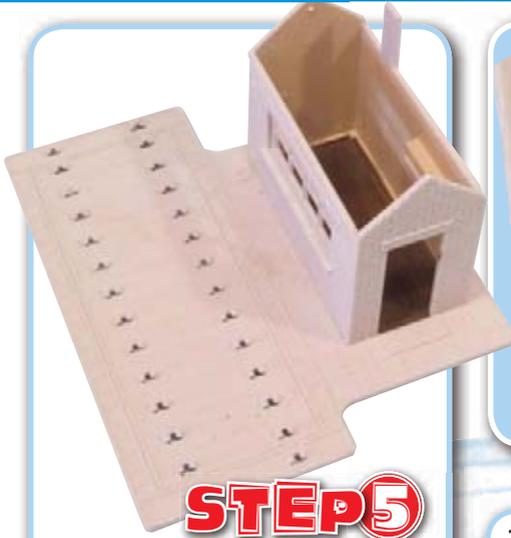
Glue, step 1. The Contacta cement holds the parts together so they can be fiddled with for perfect alignment. Left long enough it will fix them permanently, but if you are impatient like me you move on to...



STEP 4

Glue, step 2. Slater's Mek Pak is dribbled into the joints with a fine paintbrush. This thins the cement and sets the joint pretty much instantly.





STEP 5

Once the roof is glued on, the interior will be inaccessible so it's a good idea to paint it now. A pale colour on the walls and something dark brown for the wooden floor are enough to give the right impression. Fitting the weighing machine needs to be done now, after this is painted white.



STEP 6

When the moulds were mastered, someone didn't leave enough space for the chimney so the manufacturer has added this instruction on the underside showing that you have to enlarge the hole with a sharp knife.



STEP 8

The Wills hut is a little trickier to assemble so check the accuracy of the corners with a small square. Use the cement again until you are happy and then run some Mek Pak into the joins to set it quickly.



STEP 7

Test the fit of the roof without glue before sticking it all together. If you are left with a gap around the chimney, stick a strip of paper over it and later paint it to look like lead flashing.



STEP 9

The chimney is a separate part. Along the edges of the front and back face are stuck the sides, which have to be bent along marked lines.



STEP 10

I found getting the brick courses to line up a little tricky and in the end stopped worrying too much. It is possible to re-carve the lines with a file but the results aren't entirely satisfactory so I wouldn't worry. Chimneys like this are sometimes seen on the railway in real life, standing in splendid isolation once the hut has rotted away.



STEP 11

The roof is fiddly to fit, the sides are fine but lodging the capping along the top needs care. Since the cement allows adjustment for a few minutes, you can slide the parts around for a good fit.

Painting the brick parts starts with a wash of mortar colour. Pale beige works very well but if the building is very old a mid-brown is acceptable. Next, dry-brush the brick faces with a nice reddy-brown carefully. It is great practise for this important technique.



STEP 12

STEP 13



The wooden hut starts with some dark brown (Precision underframe dirt is good) which I washed over with thinned black paint when it was partly dry. This allows the colours to merge in a random way which looks nice. A final dry-brush of Humbrol gunmetal finishes the job the next day.



The weighbridge needs some rails and while Code 100 will slide into the chairs, code 75 is more appropriate and a whole lot easier to fit. A couple of dabs of superglue holds it nicely and then the rail sides are painted rust colour. As a finishing touch I notched the rails where they crossed on to the weighing section.

STEP 14

STEP 15

Glazing was courtesy of Micro Krystal Klear. This is applied on the end of a screwdriver. First rub around the outside of a frame and then form a skin across the whole. Leave to dry and the result is flush and slightly opaque 'glass'.

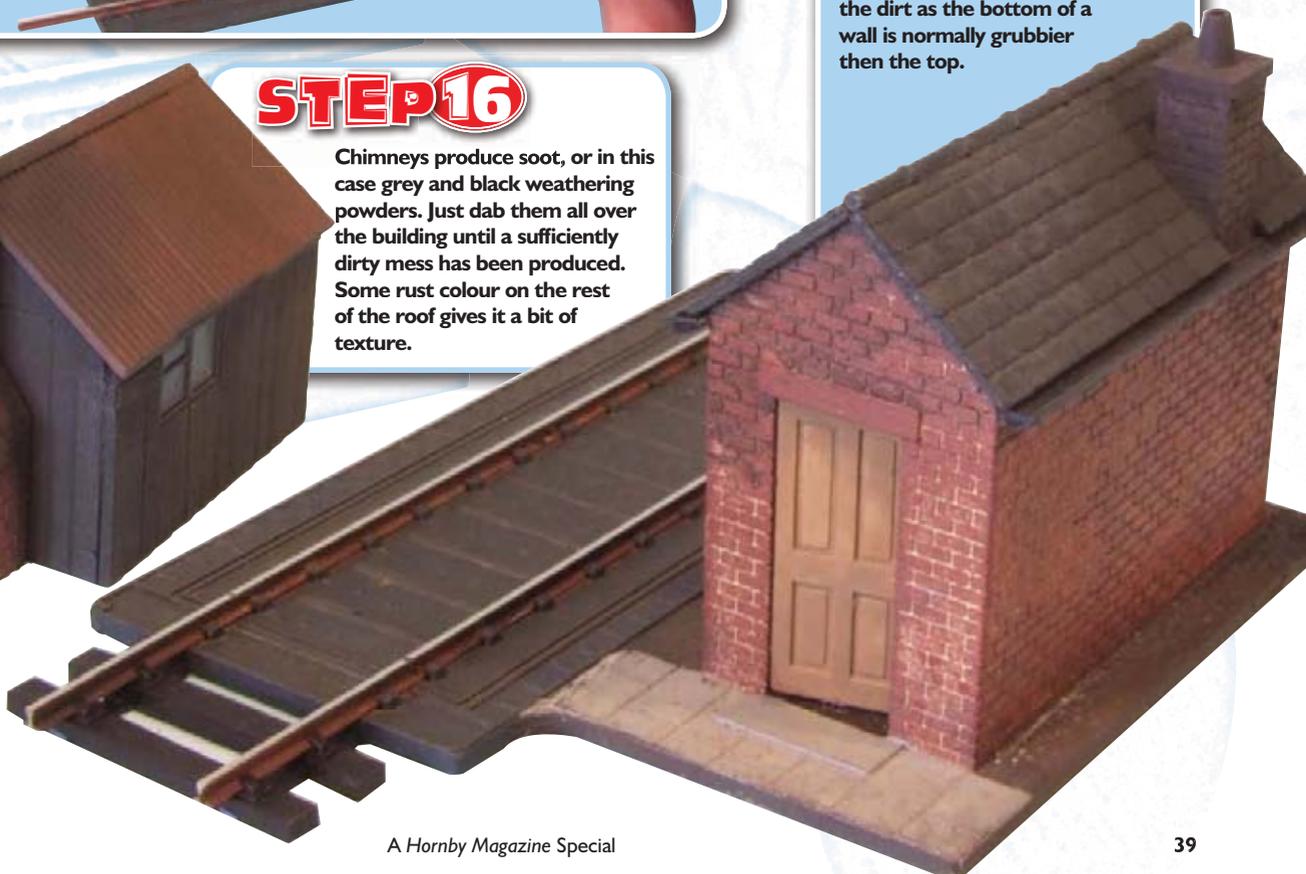


STEP 17

The weighbridge benefits from a good dusting of dark brown powders. Don't spare the dirt as the bottom of a wall is normally grubbier than the top.

STEP 16

Chimneys produce soot, or in this case grey and black weathering powders. Just dab them all over the building until a sufficiently dirty mess has been produced. Some rust colour on the rest of the roof gives it a bit of texture.



Repainting

DIECAST MODELS

When not playing trains, *Hornby Magazine* editor Mike Wild and myself spend our spare time (and money!) tending to the needs of vintage Volkswagens. During a conversation about these he wondered what would have happened if British Railways had decided to try some of these foreign vehicles in place of the more traditional British marques. This sounded interesting and since I had a few suitable models to hand I thought I'd try changing the paintwork.

The first step as always is to carry out a little research. Looking in *Railway-owned Commercial Vehicles* by SW Stevens-Stratten & WJ Aldridge it was obvious that road vehicle liveries varied a bit. Possibly the local sheds that looked after them had rather more say in the colour schemes than they did with rolling stock. This is great news for modellers as it gives us a great deal of modeller's licence to do what we want. With this in mind I found my models and broke out the paint.



STEP 1

Fresh from their boxes, two Cararama Split screen vans either side of the later Oxford Models 'Bay Window' version. The shot shows the slight difference in scales as the older vans produced in 1:72 should be slightly smaller than the later design which is the correct 1:76. It's probably only VW anoraks like me who will spot this though and they are very nice models.

Repaints are easier if you dismantle the models. For most diecasts you need to remove a couple of big rivets and for this I find a wide drill bit in a slow running electric screwdriver, NOT a power drill, takes the head off nicely. You don't need to drill a hole, just remove the overlap that holds the parts together.

STEP 2



Final Line-up



STEP 3

After dealing with the rivets, the model splits into its component parts. As you can see, the panel van uses the same interior as a mini bus. In the picture I've yet to remove the headlights but these just push out from inside the body.



STEP 4

The materials to finish the models: Paint stripper, aerosol primer and some paint. Humbrol makes some very nice railway colour acrylics just right for this task. BR transfers came from Fox.

STEP 5



All the metal parts need to be stripped of paint. Nitromors took this off very quickly. Do wear rubber gloves for this task and read the instructions and safety advice on the side of the can. Don't use it on plastic bits, there are special strippers for these but as all the parts were self coloured I didn't bother doing anything with these.

The split screen vans handily separate along the lines I wanted the colours to change so it was easy to paint without needing to mask anything. I used an airbrush, thinning the paint with water, but working by hand will give results just as good if you apply several thin coats.

STEP 7

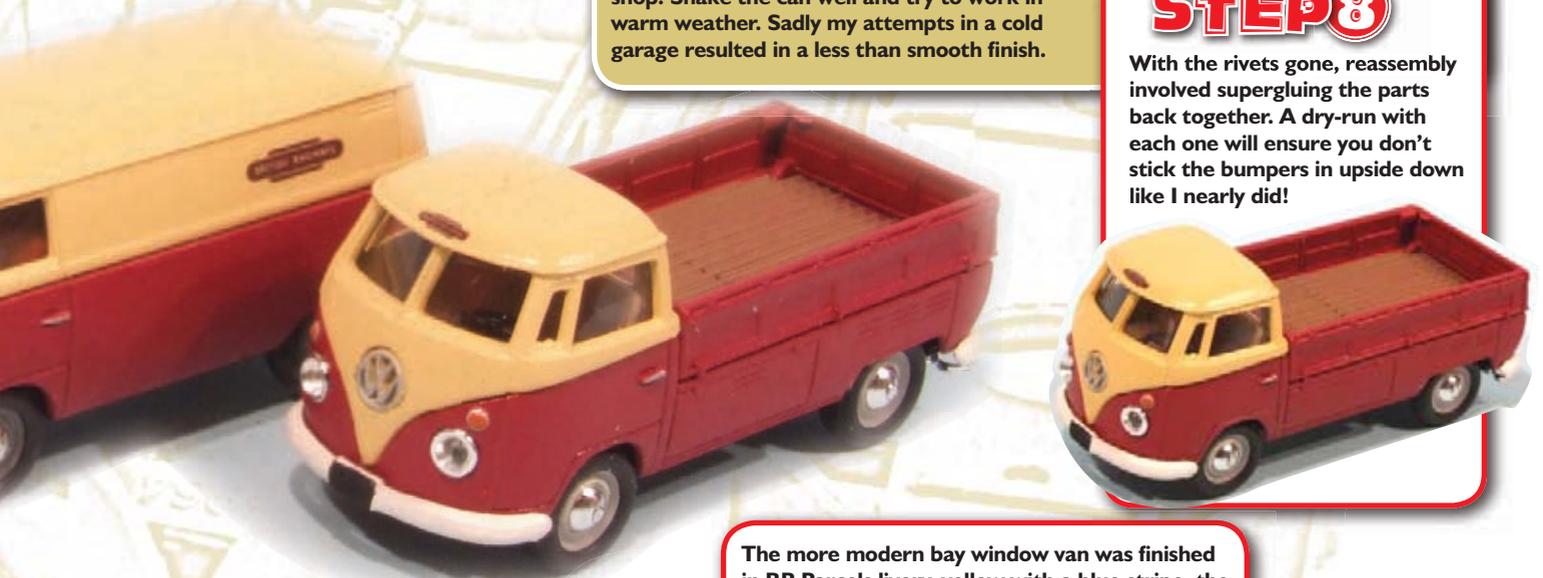


STEP 6

Both metal and plastic body parts were given a thin coat of aerosol primer purchased from a motoring accessory shop. Shake the can well and try to work in warm weather. Sadly my attempts in a cold garage resulted in a less than smooth finish.

STEP 8

With the rivets gone, reassembly involved supergluing the parts back together. A dry-run with each one will ensure you don't stick the bumpers in upside down like I nearly did!



STEP 9

Looking rather nice in its 'blood and custard' livery, the split screen panel van is finished with BR totems. A spray of satin varnish just finished the job nicely and will protect these from handling damage. I don't think the last step is essential though if the model is to be glued down on a layout.



The more modern bay window van was finished in BR Parcels livery, yellow with a blue stripe, the latter did involve some masking for spray painting. Brush painting can just follow the panel lines. Transfers were dry-print for the logo and a slightly unsuccessful attempt with a 'print your own transfers' pack.

STEP 10



GWR Horsebox

On pages 20-23 I did my best to encourage you to dip your toe into the world of kit building with a couple of coal wagons. Cynically, I expect that some of you will have decided that you'd got enough coal transport and so won't have dirtied the workbench. Well, this time our subject is very different – a horsebox.

Parkside's GWR Horse box N13 (Kit number PC79) is one of their newest kits and as such will produce an extraordinarily well detailed model that could grace any layout set from the 1920s to '60s. The prototypes were built by Swindon Works and many lasted into BR days.

Each 'box could hold three horses along with grooms, tack and food. They would be attached to the back of passenger trains and ventured far and wide across the country. If you imagine a country squire lives just off stage on your layout, or better still there is a local racecourse, then you can use a horse box or two. This certainly adds a bit of variety to the coaching stock and detaching the 'boxes from the back of the train and leaving in a siding adds another realistic shunting move.

From the outset I should warn you that this is a reasonably complex kit with lots of fiddly small parts. The instructions are pretty good and you should read them before starting off and then throughout the build. That way you won't make the mistake I did and have to remove a couple of major parts to refit them in the correct place. And no, I'm not telling you which ones...

The tool kit needs to be slightly expanded from for this one. As well as knife, files, emery paper and something flat, I recommend a couple of small drill bits, 0.45 and 2mm, along with a suitable pin vice to hold them. The liquid glue required needs to have a bit of bite too – Slater's Mek Pak worked very well for me – some of the parts are moulded in ABS, a strong plastic that resists most solvents. You also need a small pair of pliers to bend wire and cutters to trim it to length.

KIT FROM

Parkside Dundas

Millie Street, Kirkcaldy, Fife, Scotland, KY1 2NL
(01592) 640896

www.park-sidedundas.co.uk

GWR Horse Box N13

Product Code: PC79 - £14.45



The kit as it arrives from Parkside.

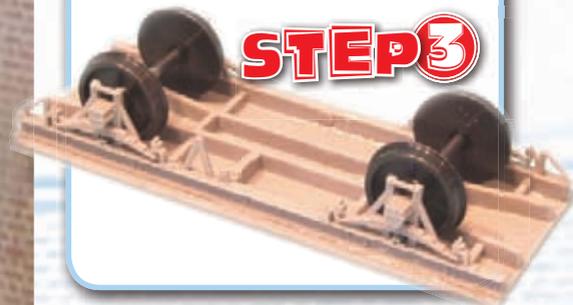


The kit parts spread out. The grey ones are moulded in styrene and the black ones ABS. Romford wheels and bearings are provided. These are larger than wagon wheels so the vehicle can run at passenger train speeds. You also get some plastic rod and a bit of wire.



One of the V-hangers has to be removed and then the solebars fit to the chassis. Attach one, let it dry a little and then fit the other. Ensure the axles are square to the sides and parallel to each other. The wheels should spin easily and when the chassis is sat on something flat, all the flanges touching the ground. The solebars are exactly the same length as the floor so make sure they don't overhang at either end, it will make a difference later.

STEP 3



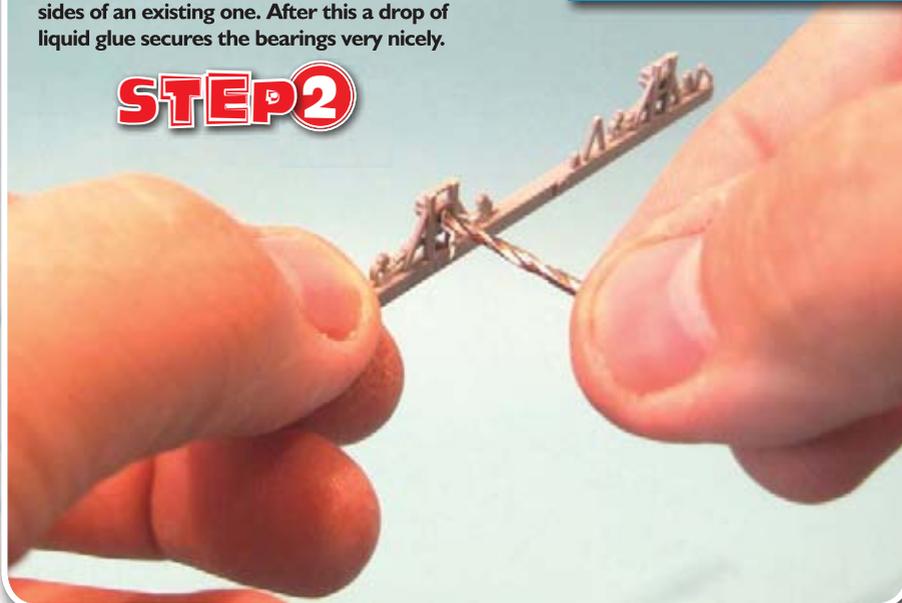
The brake shoes are a touch fiddly to attach and hang commendably close to the wheels. On the real thing the distances between shoe and tread is tiny compared to those we accept on many models. Positioning for all the 4mm gauges is easy enough. I held each shoe in some tweezers, put a blob of cement on the bottom end and put it in place. The thick glue holds it for positioning and then some liquid glue fixes things properly.

STEP 4



I found the bearings a very tight fit in the W-irons so opened out the holes with a 2mm drill bit twiddled between the fingers. You aren't making a hole, just gently easing the sides of an existing one. After this a drop of liquid glue secures the bearings very nicely.

STEP 2



STEP 5



I am fitting this model with Hornby couplings which sit on supports attached to the floor. This requires some of the under floor bracing to be cut away. Obviously this would have been better done before putting the solebars on, but you can benefit from my mistake and do things properly. Fittings are provided for other tension locks and these don't need this level of fiddling.

USEFUL READING

Prototype information:

Great Western Horse Power
by Janet Russell

Publisher: OPC

ISBN 0-86093-425-x

Great Western Railway Journal No. 5

Publisher: Wild Swan



STEP 6

The GWR used Dean/Churchward brake gear on this wagon which means an extra hanger and rod under the buffer beam right where the coupling supports are, so if you need these, ignore this step. 3-link coupling users can cut the rod to length so it fits between the supports. If you fancy some fiddly drilling, the peaks of the hangers can have holes made for the rod which means less accurate cutting. It's all down to what you are comfortable with. Personally I'm rubbish at making a bit of plastic exactly the right length so I drill.



STEP 7

The vacuum cylinder is moulded in two halves. These are glued together and fitted in the place marked on the floor. The cylinder fits to the floor bracing and a rod runs from the outside V-hanger to an inner one. From this rod you attach a linkage from the black sprue. Despite looking pretty complicated, this underframe is actually simplified from the real thing, not that you notice when the model is on the track.



STEP 9

The instructions tell you to cut out the glazing and fit it before painting. This is madness. It's far easier to cut out the windows so they fit in the generous rebate and then put them somewhere safe until the sides are painted, when they can be fitted with PVA just before the roof goes on. I'm not sure what the glazing is – certainly not styrene – it cuts cleanly and is very clear so I kept the excess for use elsewhere.



STEP 13

The main steps are made from ABS verticals and styrene moulded treads. I held the bottom tread upside down in some sprung tweezers, causing the dirty mark seen on the underside, and hung the supports from this. Lashings of Mek Pak held these in place and then the top step was added.

STEP 14

One end of the van features steps and brackets plus some wire bits. The bracket holes are a touch small but if filled with liquid glue will soften enough to push the part in.



STEP 15

The other end is much simpler. The buffer heads are pushed in and once of equal length, liquid glue is run around the ends. The roof isn't fixed at this point, I just plonked it on to see what the finished wagon will look like.

STEP 8

The buffer beams needed a touch of fettling to make sure they fit perfectly between the solebars – just a couple of strokes from a file. If you get it right the join should be invisible.



STEP 12

The most disappointing aspect of this kit were the vestigial moulded-on handrails which really aren't up to the standards of the rest of the model. I replaced these with 0.45mm straight brass wire. You can get this from most models shops and shows. Mine is from the Alan Gibson range.

Stage 1 – The handrails as supplied

Stage 2 – Holes are drilled through the ends of the moulded handrail with a 0.45mm drill. Then the rest of the moulding is scraped off.

Stage 3 – Wire is bent to shape and pushed through the holes. The holes are small enough to grip the wire so you can adjust it. The place a dot of superglue on the ends with a pin.

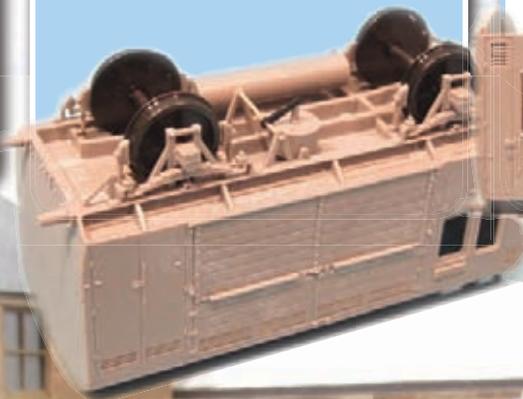
STEP 10

The sides make up easily but make sure you get them the right way round. Do a dry run for each joint before glueing to make sure the fits are as good as possible. The partitions are supposed to fit between the marked areas on the sides but if you do that they are too wide by about 1mm so I just slid one down behind the marking, for which it is a perfect fit, intending to leave the other out.



STEP 11

Under the body some little gussets have to be fitted. After some puzzling about their positions I realised that there are some vertical plates on the solebars that they are fitted next to. The pieces needed trimming a touch for a perfect fit with a whisker off the points and then attaching with liquid glue. Luckily this doesn't set instantly so their positions can be tweaked a bit with tweezers.



STEP 16

While I had the roof in place it became obvious that the interior of the grooms compartment looked very empty. Adding a seat to the unused partition, which I filed down a little to fit, filled things up a bit. The seat is made of scraps of plastic and based on a photo in the *Great Western Horse Power* book.



FINISHED



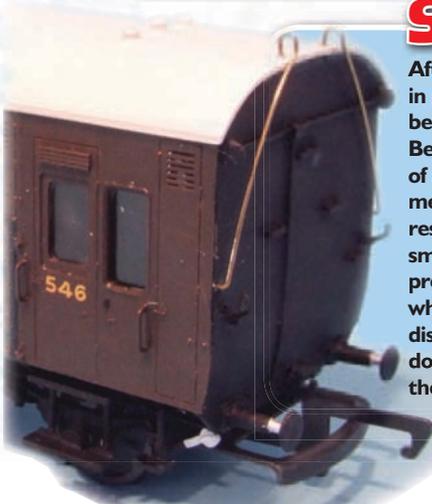
WHAT IS A PIN VICE?

A pin vice is a tool for holding very small drill bits. There are various designs but my preference is for the single ended versions which can be bought singly or in a set of four for under a tenner. In use, pick a vice that is roughly the right size for your bit and then drill the hole using only finger pressure. Do NOT put the vice in a drill as you will break the bit. Using the pin vice will considerably increase the life of your small drill bits as they will bend less in use. To make the tool more comfortable to use, stuff a cotton bud in the end as this will stop you getting blisters when drilling lots of holes.



STEP 17

After painting, the roof is fixed in place and the end handrails bent up from the wire supplied. Bending this around the handle of a small Maglite torch gave me about the right curve. The rest had to be formed with small pliers. Watch out for the projecting brackets on the ends while doing this, I managed to dislodge three and lose one while doing this. Dots of superglue hold the handrails in place.



LNER Signals

Signals are a vital part of the railway system, yet modellers (including me) seem to treat them as optional items of scenery. After all, we can operate our miniature lines without sending instruction to the locomotive crews, so they are consigned firmly to the list of things to do without ever making it to the top. Perhaps we feel they are too fiddly to build or cost too much in ready made form.

Of course there are a small number of people for whom signalling is a major part of their interest in the hobby. Their layout will probably be operated by locomotive drivers, each in charge of a single train who won't need to talk to each other or the signalman because they can follow the directions in the same way a real crew would. The popularity of DCC means that operating a layout in this manner is very easy nowadays, in fact many would argue that this is one of the biggest benefits – you drive the train, not the track.

All this is fine but *Hornby Magazine's* exhibition layout, 'Bolsover and Seven Lane Pit' needs some signals and I found myself on the receiving end of a package from editor, Mike Wild, containing two packs of Ratio LNER Latticed Post Signals along with instructions telling me exactly what he wanted.

Unlike conventional plastic kits, the components in this kit can be built in a number of ways. It's up to the modeller to decide what they want and then use the bits to make it. The request I received was for a pair of single post starter signals, two bracket signals and an extra tall home that the driver could see from behind an over bridge. While I was at it, how about some ground signals?

The Ratio kits are very well thought out and if you are careful can be used to produce some very fine fully-operational models. The instructions contain well drawn diagrams that explain the different signals that can be produced. I looked at all this and decided that

static models would be much easier to build and for a layout like 'Bolsover', just as good as it will normally be operated in a conventional manner with a driver controlling the track. There isn't space inside the operating area for a specific signalman and several drivers. Not without everyone getting very friendly anyway.

Added to this, as an exhibition layout, everything has to be built with transport in mind and I could see the very fine mechanisms not lasting very long in the hurly burly of packing up at the end of an exhibition!

So, these signals are intended to look pretty and add to the scene. From an artistic point of view they do add some useful height to a model and the lattice posts and

red arms look good. Even in static form they impart a certain 'railway atmosphere', to any model and at a very modest cost. You need to be careful to buy the right ones, no SR signals in the north of England please, although the LMS round post version did become pretty ubiquitous, so at a pinch you might be able to use these. Far better though to make use of the signals to help set the location of the model.

Best of all for skinflints, even the leftover parts can be used. The corners of many steam era yards were home to a collection of rusting gantry parts, operating arms and bell cranks. Maybe even the occasional spare arm would be hanging around so nothing needs to be wasted. I started with two packs of parts and had plenty left over at the end.

Finally, be warned. Railway signalling is a complex subject and once you start, it can be fascinating with many different types of signal appearing all over the network. Fortunately there are plenty of books out there to help satisfy your curiosity, a couple of which are listed here. You might even like to join the Signalling Record Society (www.s-r-s.org.uk) but be warned, it won't be long before you are disciplining your operators for passing signals set at danger!

SUPPLIERS

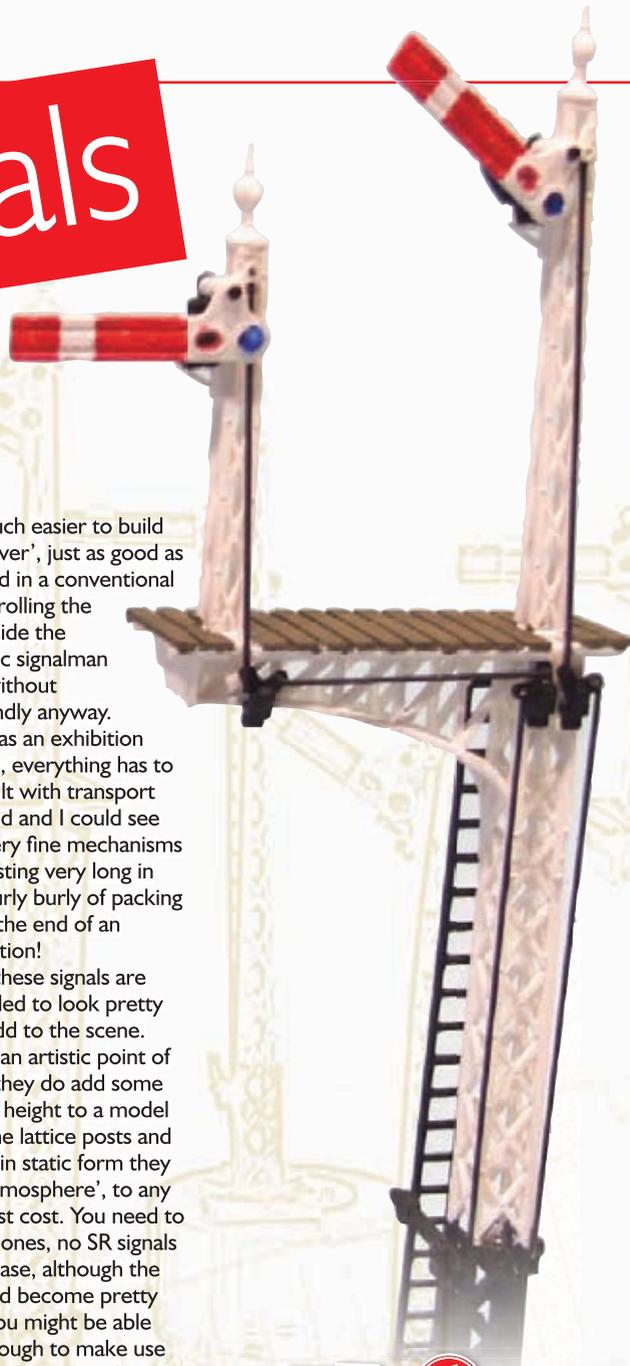
RO486 - LNER Lattice Post Signals Kit - £7.50
RO465 - Ground signal kit (Set of 4) - £3.34

Ratio kits are available from many suppliers.
 Ours came from Kenrow Model Centre -
www.kernowmodelrailcentre.com

FURTHER READING

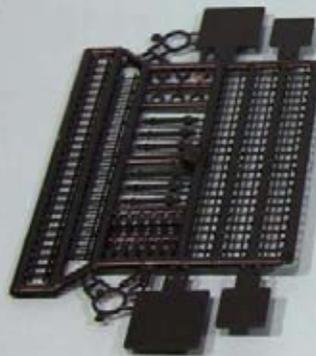
Aspects of Modelling: Signalling
 by Nigel Digby
 Ian Allan Publishing
 ISBN 978 0 7110 3427 3
 £14.99

British Railway Signalling in Colour: For The Modeller and Historian
 by Robert Hendry
 Ian Allan Publishing
 ISBN 978 1 8578 0114 9
 £11.24



STEP 1

There are lots of parts on these sprues. Unlike most kits you have to decide exactly which ones you want to use, so spend some time examining them to understand what they all are.



I started with a simple single post home signal. Construction begins by gluing the two halves of the post to each other. These need to be carefully lined up so the 'peaks' are touching, there are no positive location aids to help with this unfortunately. Leave the assembly to dry fully before moving on or you'll ruin the alignment.

STEP 2



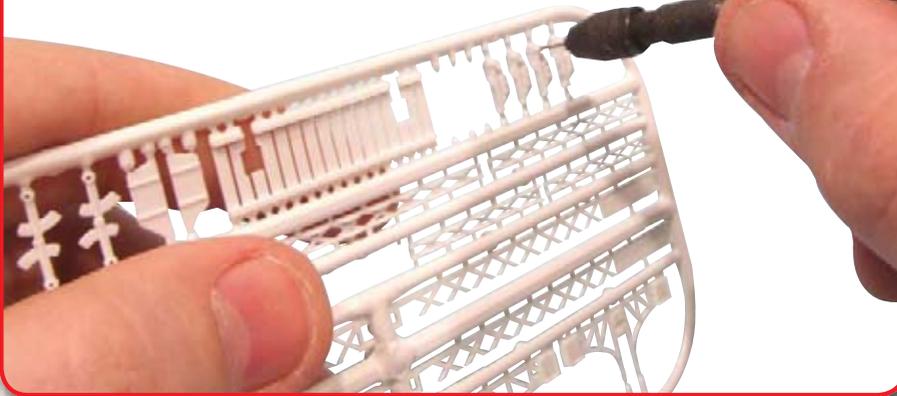
STEP 4

The post is fixed to one of the smaller bases and the finial glued in at the top. This part took quite a bit of cleaning up as there was a mis-alignment between the halves of the mould. Cast whitmetal replacements are available if you prefer.



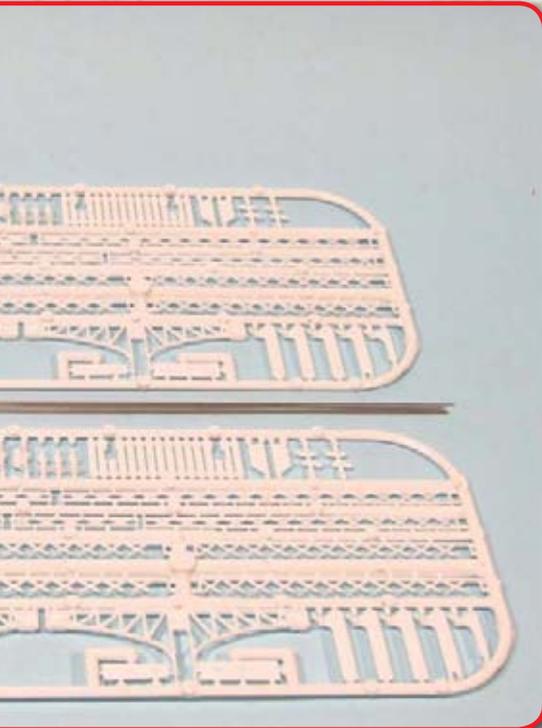
STEP 3

I decided to use brass dressmaking pins cut short for pivots instead of the wire provided. To make things simpler, all the holes were drilled out to 0.6mm, something much easier to do while the parts are on the sprue.



STEP 5

The safety hoop is fitted at the top of the post. Then the ladder is cut to length and threaded through. Lower down these operating arm as been fitted. Since these weren't to be working models, I just glued it in position.



STEP 6

As supplied, the spectacles in the signal arm are blind (filled in). I decided to open these out by drilling and filing the holes as it makes the finished item look more delicate.

STEP 7

Handling these fragile constructions isn't easy. As an aid, I fixed this one to an old jam jar lid with some double sided sticky tape. The entire thing was then sprayed matt white.



STEP 8

Once sprayed, the black parts were painted by hand. Doing this before fitting the arm makes things a lot easier. The last job was to glaze the spectacles with Krystal Klear. Then some Revell transparent paint finished them off. Please note the colours are red and blue, not green. The oil lamp gives off yellow light so the blue lens would show green to drivers.

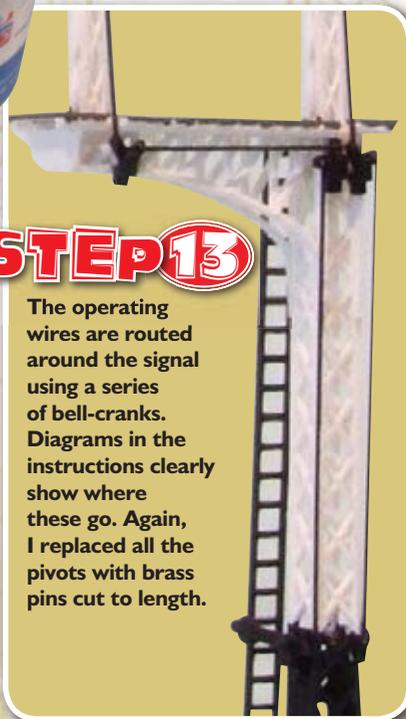


STEP 9

The gantry signal starts with construction of the main post. This has four parts which need to be assembled in to L-shapes and then brought together into a square tube. This looks like it should be difficult but actually turned out to work very well.

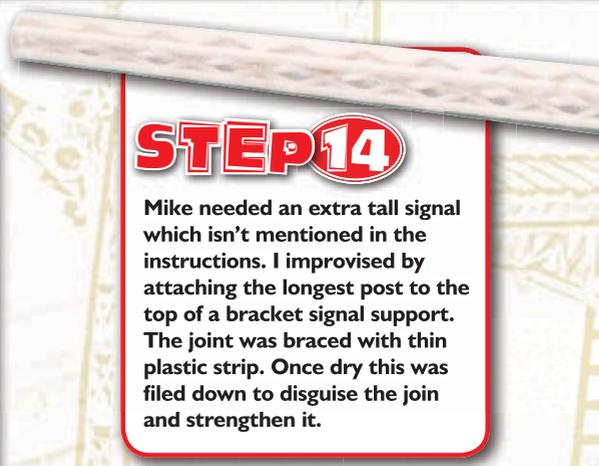
STEP 13

The operating wires are routed around the signal using a series of bell-cranks. Diagrams in the instructions clearly show where these go. Again, I replaced all the pivots with brass pins cut to length.



STEP 14

Mike needed an extra tall signal which isn't mentioned in the instructions. I improvised by attaching the longest post to the top of a bracket signal support. The joint was braced with thin plastic strip. Once dry this was filed down to disguise the joint and strengthen it.



STEP 12

The posts are made in the same way as the home signal and then fitted to the top of the gantry. I found these needed constant checking to ensure they remained upright while the glue dried.



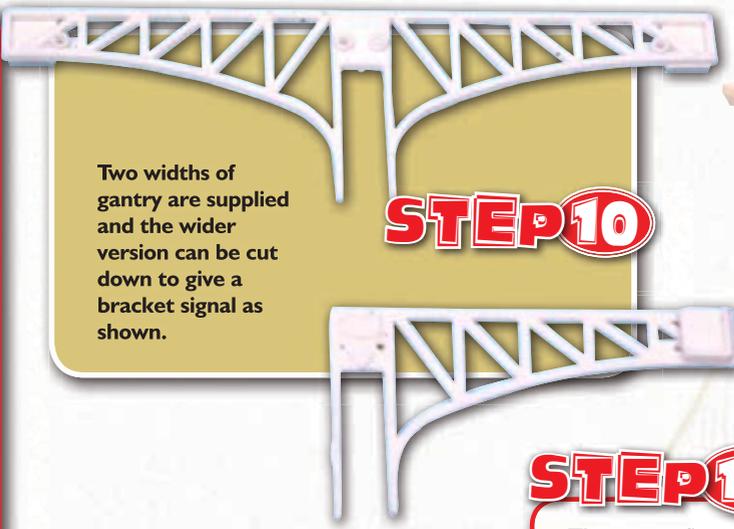
STEP 15

Apart from the length, construction is the same as a normal single arm signal. Two lengths of ladder have to be joined to give one long enough and I felt that some sort of support would be required to hold it away from the post. A couple of bits of microstrip made this and handily, covered the join.

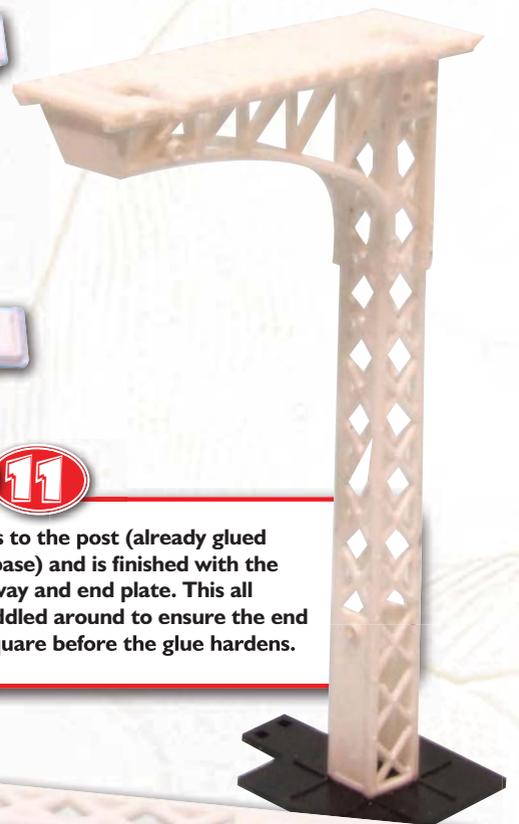




Two widths of gantry are supplied and the wider version can be cut down to give a bracket signal as shown.



STEP 10



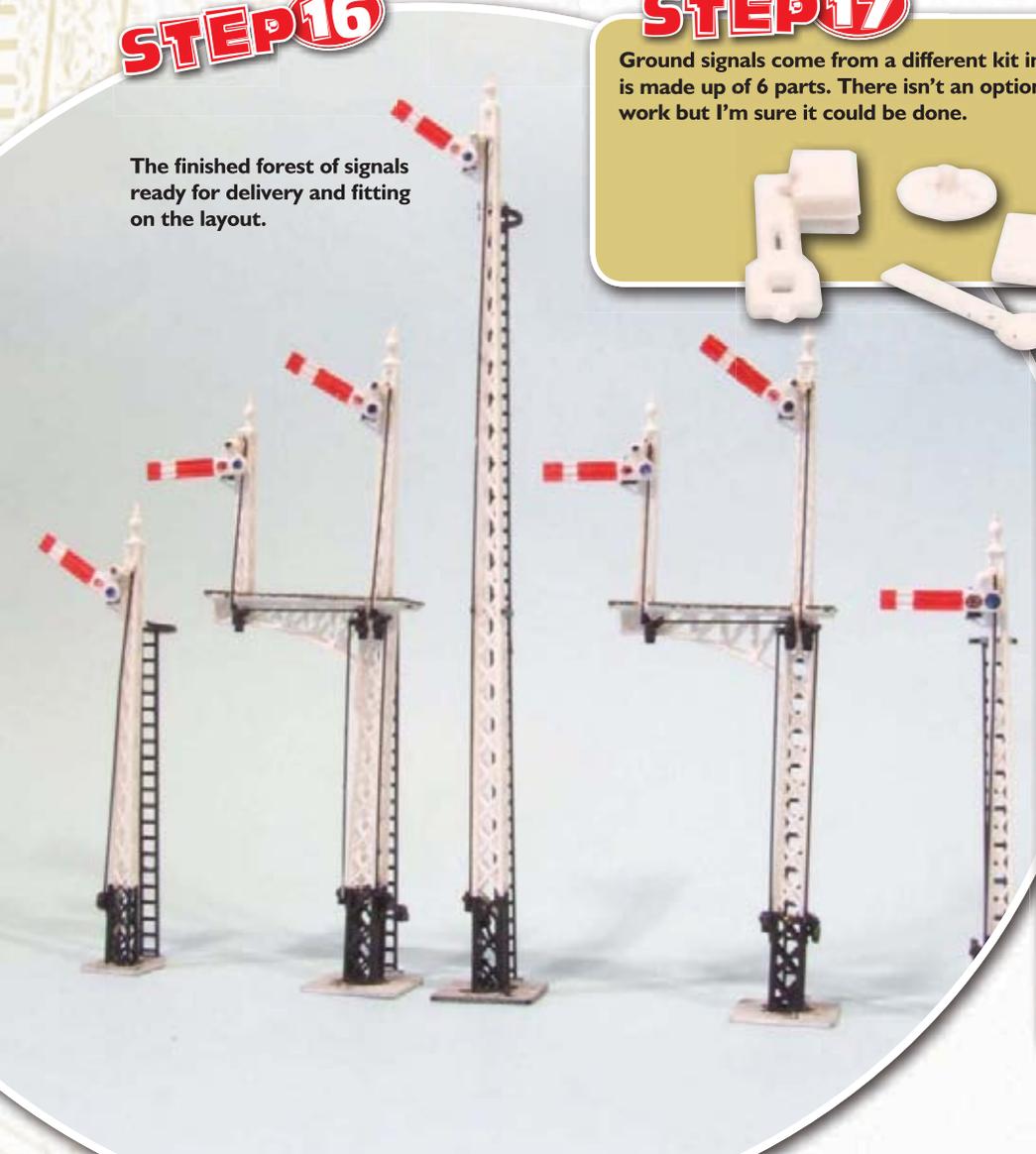
STEP 11

The gantry fits to the post (already glued to the larger base) and is finished with the wooden walkway and end plate. This all needs to be fiddled around to ensure the end result looks square before the glue hardens.



STEP 16

The finished forest of signals ready for delivery and fitting on the layout.



STEP 17

Ground signals come from a different kit in the range. Each is made up of 6 parts. There isn't an option to make these work but I'm sure it could be done.



STEP 18



Ready for the layout, each signal has been assembled. Again, the spectacles have been opened out and glazed although it probably wouldn't matter to viewers if they were just painted.

Silver Fox Shunter

Building a model locomotive is big and scary yet incredibly rewarding. There's no better feeling in this hobby, in my opinion, than watching a loco you have built running on your layout. Recent years have seen the high quality ready-to-run models enjoyed by 4mm scale modellers deal a double blow to this activity. First, there is little need to build kits for motive power unless you want something really unusual. Second, everyone's early kit built models will share track space with RTR that boast a level of quality once reserved for gold medal winners, and can often look like a poor relation in comparison. All this conspires to put the average modeller off, but he or she shouldn't be denied the fun of kit building, we just need to work our way in gradually.

There is one area the RTR manufacturers have neglected, the shunter. Okay, you can buy the BR classes 03, 04, 08 and 09 and for steam fans the ex-L&Y Pug and there are also a host of Hornby 0-4-0s crammed onto the dragster-like Caledonian pug chassis, but these barely scratch the surface. Shunters came in all sorts of shapes and sizes, frequently being produced in the sort of penny numbers that make them unappealing to the big manufacturers, but ideal for our hobby's cottage industry.

For the beginner, what we need is something simple, preferably with a ready-to-run chassis. Soldering bits of metal together and fitting bits to make the assemblage go is fun and perfectly feasible, but if you don't have to do it, why bother? For this starter project, I've selected a Hunslet Engine company 0-4-0 which will be built from a Silver Fox resin kit.

Before starting I should explain that there

are two approaches to loco building. The first is to build the kit as it comes. That's fine and has its place, but I prefer the second – building a model of a locomotive using the kit. The distinction may seem obscure but it is vital. As far as I am concerned, the kit is just a pile of raw materials and if I want to change something to make a better model I will. For some models this may mean throwing an awful lot in the bin. Pick wisely though, and it's only a matter of fettling and personalising the finished model. Generally most modern kits will need the builder to add motor, wheels and gears with the rest being top quality parts often in a variety of materials chosen for their suitability for the items being constructed.

The Silver Fox range is home to three nice little shunters designed to fit ready-to-run chassis. The bodies come as a single part and in its simplest form the models need little more than painting before being pressed into service. Now I will admit that although the results look very nice, and the subject of this article will be joining my fleet of kit built locomotives on 'Melbridge Dock', the limitations of the manufacturing technique result in a model that isn't quite as sharp as the same thing built from an etched kit. But, and it's a big but, the effort required is a lot less than the metal version, yet most people won't be able to tell the difference. Best of all, it is great fun to build with no

burnt fingers along the way. And this hobby is about having fun, right?

To start, a little prototype information would be useful. Three Hunslet 0-4-0 diesel mechanical locomotives were built for the Eastern Region of BR in 1954. Intended for shunting dockyards with tram tracks and sharp curves, the wheelbase was only 5ft 6in and all the motion was enclosed. Originally numbered 11500 to 11502, this was later changed to D2950 to D2952, the livery started plain black and ended up green with wasp stripe ends. The locos lasted until 1967 except for D2950 which was sold into industrial use and not broken up until 1983.

More information and excellent photos can be found in: *The Diesel Shunter* by Colin Marsden, published by OPC. ISBN 0 86093 579 5; *British Rail Fleet Survey 7 – Diesel Shunters* by Brian Haresnape, published by Ian Allan. Out of print but often seen on second hand book stands.

Even if you aren't interested in building a model of Ipswich Docks, don't let this put you off, it's a pretty little diesel and I don't see why you can't invent a bit of history to move it to anywhere you want. Several similar locomotives spent long periods as works shunters all over the place. Anyway, it's your train set so who's to argue?

SUPPLIERS

Silver Fox Models

1 Marsland Terrace, Stockport, SK1 4PZ

0161 285 5210

www.silverfoxmodels.co.uk

D2950 0-4-0 Hunslet Docks Shunter Kit - £32.50

REALTRACK Models

111 Norwood Crescent, Stanningley, Leeds, West Yorkshire, LS28 6NG

0113 256 3415

www.dckits-devideos.co.uk

Tenshodo SPUD - £34.50



The instructions show this model can be powered in various ways such as a modified Hornby 0-4-0 mechanism or Black Beetle bogie. I plumped for the third option, a Tenshodo SPUD (Self Propelled Underfloor Drive), a RTR motor bogie. Mine has a slightly over-scale 26mm wheelbase but as this is hidden it doesn't really matter.



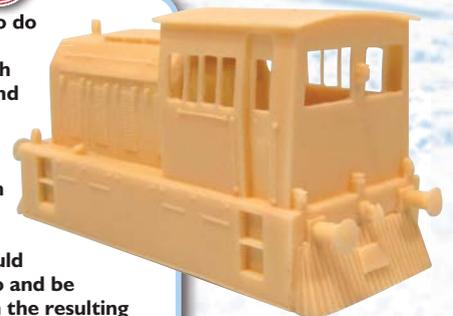
STEP 2

STEP 1

In the box you find the loco body cast as a single part in polyester resin, a couple of bits of plasticard, some wire for couplings, glazing material and a nice little etched Ruston plate, as well as some instructions.

STEP 3

There is very little to do with the body other than clean some flash from the windows and buffer beam with a sharp knife. The horn needs sticking in place with a touch of superglue to the front of the cab. At this point you could simply paint the loco and be perfectly happy with the resulting model.





STEP 4

To use the SPUD, a hole has to be made in the supplied bit of plasticard. Simply make a hole in the centre big enough for the boss on the motor bogie to poke through. Make sure the plastic plate fits in the bottom of the body but don't glue it in place.



STEP 5

I didn't think the moulded handrails did the body justice, so set about removing them and making up replacements from 0.45 brass wire. To make sure everything ends up the right length I removed the ends of the moulded lump with a sharp knife, drill the holes and then take the rest of the raised handrail away. The wire is bent to length and fitted with super glue.



STEP 6

At the back there are a couple of little handrails to add above and below the left hand window. Cable conduits to the lamps are fitted using more 0.45 wire and some bits of staple act as the lamp irons. I've just glued them to the cab back rather than worrying about there needing to be a gap for the lamp to fit over. You can't tell on the finished model.

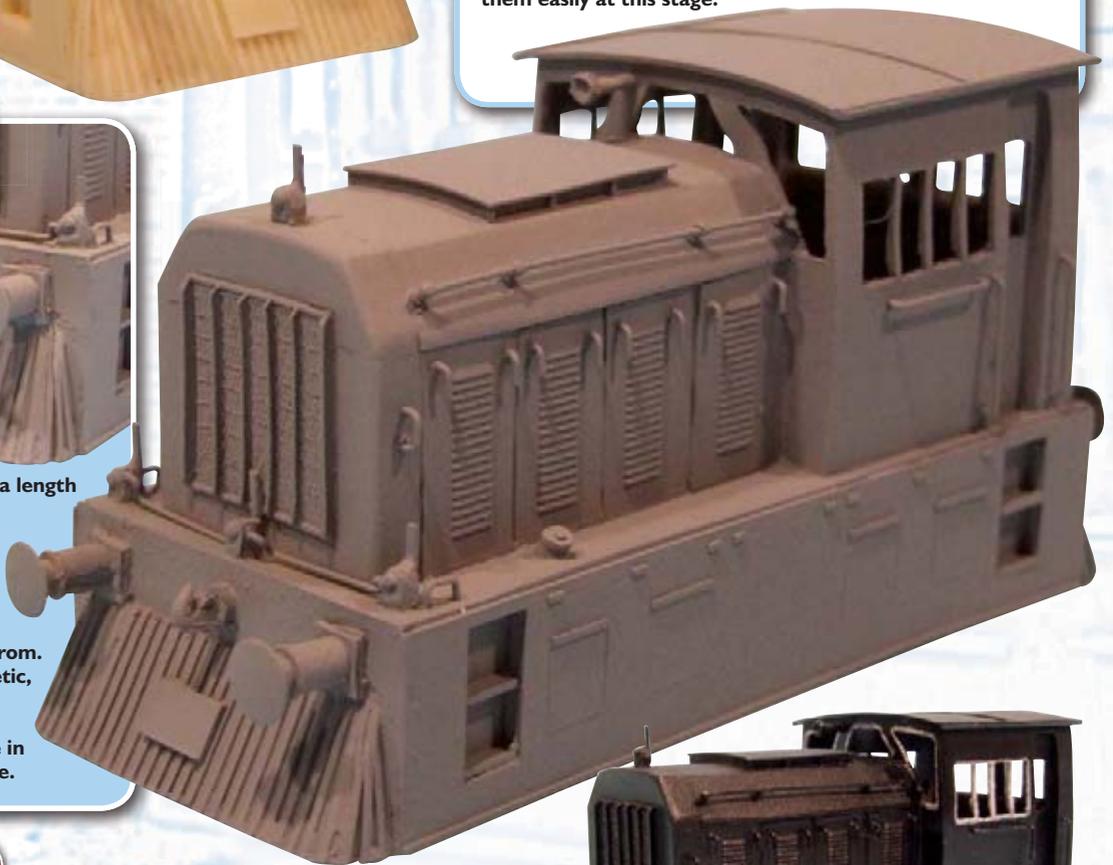


At the front here are more bits of staple for lamp irons and wire for conduit. You can see from this shot that the bonnet handles were also replaced. I make these up too long and then cut them to length when the glue has dried – it's easier than trying to get them right first and if they are uneven lengths, they look terrible. The bonnet handrail is fitted into turned handrail knobs from Alan Gibson's range.

STEP 7

STEP 8

Once I was happy with the work, the body was cleaned up with some soapy water followed by lots of rinsing and a blast from a cool hair dryer. A coat of aerosol car primer gives the paint something to grab hold of and more importantly will show up any minor cleaning up or filling that will be required. It's a good idea to put the loco away at this point and come back to it with fresh eyes a couple of days later – you'll see any imperfections and be able to fix them easily at this stage.



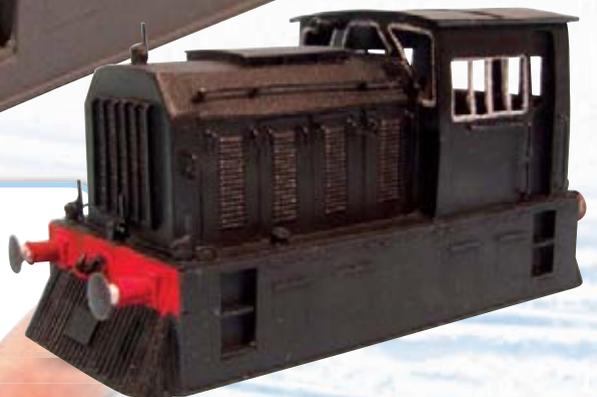
STEP 9



The coupling chain is part of a length I bought from the EM Gauge Society years ago. To be honest you could easily bend wire up for the 6 links required. A slot cut in the top of the coupling hook gives it somewhere to hang from. This coupling is purely cosmetic, you'd need an etched hook instead of the resin version should you want to use these in anger, but certainly looks nice.

STEP 10

The model was airbrushed with Humbrol Satin black and the result looked the same as I used to achieve years ago with Humbrol aerosol spray paints, which just goes to show you don't need sophisticated gear for a nice paint job. The buffer beams are hand painted. I didn't worry that this paint wasn't perfect even after three coats as the model was to be weathered. Putting the window surround in with a fine brush and silver paint was fiddly but worth it.



STEP 11

Waterslide transfers are supplied for several numbers. Simply cut out the ones required, dunk them in water until the number releases itself from the backing, and place it on the model. A pair of dividers is a big help to make sure that everything remains level. Keep checking this by looking at the model along the side as you will kick yourself if you get it wrong – guess how I know this!



Clipping the plastic plate and SPUD in place I felt it left the model about 1mm too high. If your track is a bit lumpy this probably isn't a bad thing but I wanted to drop it down a bit. The real cowcatchers and skirts are only just above the rail top to keep out debris and feet.

STEP 12

STEP 13



A new plate was made up from 1mm plasticard. This had a hole made in the top big enough to take the upper part of the SPUD. Then the original plate was chopped down to slightly bigger than the new hole and glued in place over the top.

STEP 16

I glazed my model with Micro Krystal Klear, a high quality PVA available from various modelling suppliers. Follow the instructions on the bottle and keep the window flat as the stuff dries to get the best effect. The model has been weathered with an initial dry-brushing of Humbrol 67 (Dark Grey) and then a wash of Precision Paint's 'Underframe Dirt'.



STEP 14

Inside the body you can see the ledge for the plate holding the SPUD and in the cab a second ledge which you are supposed to fit the other bit of plastic to fill the cab area. Since this method of motorisation leaves the cab clear I just filled in the front and decided to scratchbuild an interior.

STEP 15



The SPUD is fixed in place with a tiny drop of super glue. While this isn't good engineering practise, it works and leaves the bogie easy to remove if required. Without any information I knocked up a control desk around an old Hornby figure using offcuts of plastic and my imagination. If someone has a photo of the real thing they would care to share, something more realistic could easily be made up. A bit of lead over the top of the SPUD is a good idea as the resin body has no weight and these motor bogies need to be tamed with a heavy body.



STEP 17

A couple of bits of wire are provided to act as couplings. Holes are drilled in the cow catcher to hold them – make sure they are the right height for your other models. This works pretty well for a small locomotive and is very unobtrusive. Substituting the wire with a fatter version might be a good idea if you have problems with the loop riding up over other wagon couplings.

USING PLASTIC SHEET

In the 1960s, the world changed. Where once modellers had to rely on cardboard stiffened with shellac or bits of wood, there was now a new wonder material developed by George Slater that he called 'Plastikard'. Tough, flexible, grain-free and impervious to damp, the new product was demonstrated to onlookers at the London model railway show, IMREX.

Articles in the model railway press followed and gradually the modelling community caught on to the advantages of a material that was easy to cut, available in a wide range of consistent thicknesses and could be quickly fixed using solvents rather than the tube glues which always seemed to splurge out of joins on Airfix kits. Plastikard became ubiquitous and along with Hoover, evolved into a generic term. Many of us have bought 'Plastikard' from other manufacturers when the the trade name strictly only applies to the original from Slater's. Pedants would prefer the term 'styrene sheet' although it's probably too late to win that one!

From its early days, the range of plastic sheet has grown to include both plain and embossed versions, strips, rods and many other shapes. It's probably the most important material for most model makers nowadays with almost everything you see on many layouts being formed from it.

One of the joys of working with plastic sheet is the limited tool kit you require to get started. A cutting board, preferably of the rubber self-healing variety is a very good idea as the sheets won't slide around on the surface when you are cutting. Next, you must have a sharp knife. My preference is for a Swann-Morton scalpel with 10A blade. Change the blade regularly as it does make working both more pleasant and safer. Finally, a steel rule to cut against to keep those straight lines true. Rules with rubber backing are available, like the board they stop the tool slipping on the shiny sheet but I've found a decent 6 inch plain metal version to fine with careful use.

As well as using a sharp blade, better results will be obtained by cutting material using a series of gentle passes with the knife rather than trying to go through in one go – especially with thicker sheets. The first pass will provide a guide for the blade to

follow. If this wanders, try cutting from the opposite end of the line as even with a rule it's difficult to keep the knife running true once it has a wobbly groove to guide it.

Don't bother trying to cut all the way through thicker sheets. Once you have made a few passes, the plastic will snap along the line if you flex it.

While plastic normally exhibits a smooth surface, there are times when something different is required. You can purchase planked plastic, but I normally scribe my own lines using an Olfa Plastikard cutter. Held parallel to the sheet, instead of like a pen as you would use a knife, the tool carves a groove in the surface. Many passes will cut through the sheet but with care you can make nice neat grooves.

To glue two bits of plastic together, there are several options. In general, people start with plastic cement as used for kits. Most ranges now include a bottle with a fine metal nozzle which allows accurate placement of the cement. Joins made with cement allow a little adjustment time before they grab but if you squirt too much in, it will be squeezed out of the join which can be unsightly.

Cleaner, but trickier to use, is a liquid solvent. As runny as water but quite a bit smellier and best used where there is adequate ventilation, you simply load your brush and run it along the joint to be made. Capillary action will draw the solvent where it is required and the initial grab will be almost instant with full strength achieved very soon. The recommended solvent for Plastikard is Mek-Pak sold by Slater's but most ranges include a suitable version, often in bottles with handy brushes in the cap. Don't listen to old modellers who claim that Mek isn't what it used to be. The formulation might have changed over the years for safety reasons, but it still works just fine.

The two types of glue can be used in concert. Once the initial join has been made with cement, wash some solvent over it. This wicks in and sets things straight away. It can also wash away the excess cement if it's

escaped into view.

Not all plastic is equal, something that you probably only find out when you try and stick two bits together. What looks like a polystyrene based item might turn out to be ABS or something even harder. At this point you need a seriously vicious solvent or superglue. I usually plump for the later if I really must use a hard plastic item.

While plastic sheet is flexible, making curves can be challenging. In theory heating the sheet will allow it to bend and then stay bent as it cools. Personally I've never had much success with this so for curved tank tops and cab roofs I prefer to use several layers of thin plastic laminated together. Just build up the layers to the thickness you require. The only pitfall is if you use normal solvent or cement to join the pieces the active ingredients can melt the thin material

too effectively and leave depressions in the surface. To avoid this problem, try superglue or Limonene, the latter a mild solvent designed especially for this job.

When your model is finished, you are going to want to paint it. This is when plastic sheet really comes into its own over wood or card. The surface is smooth and accepts enamel or acrylics (but not water based paint) well, without

turning furry as the liquid soaks in. There is normally no need to prime the surface but if you prefer to do so, test the primer on a spare bit of sheet first. Normal car aerosols work perfectly well but if you are really worried, versions sold for plastic bumpers will certainly be okay.

Depending on the opaqueness of your chosen paint, more than one coat is likely to be necessary but that's perfectly normal. Several thin coats always look better than one thick one anyway.

To sum up – plastic sheet is a wonderful material that for many has replaced more traditional materials in the affections of many modellers. Cheap to buy and easy to use with the minimum of tools, it's fair to say that there hasn't been a material in our hobby with more possibilities, so get your knife out and start chopping!

SUPPLIERS

Squires Tools

www.squirestools.com

Swann-Morton Retractable Handle - £3.99

Olfa plastikard cutter - £6.99

TIP 1

Tools for working with plastic, a steel rule, sharp knife, Olfa cutter and cutting mat. Glues are liquid solvents in bottles and plastic cement with a fine spout.



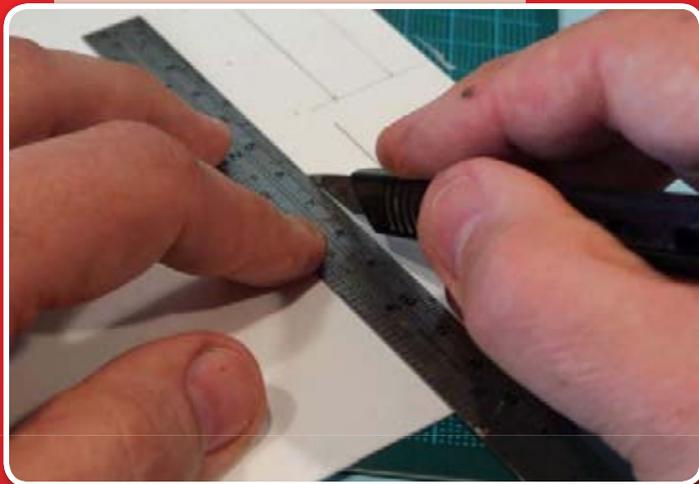
TIP 2

Styrene is available in many forms. At the front we have the sheet version, normally A4 in size and sold in different thicknesses and colours. On the left microstrip – accurately cut thin slivers of the bigger sheets. To the right, tubes and other shapes.



TIP 3

Cutting plastic sheet is easy enough. Mark your line carefully with a fine pencil. Align your ruler to the mark and cut with the knife. If working on thick sheets, several gentle passes are more effective and safer than trying to cut through in one go.



TIP 5

On the left is a line scribed with a knife, on the right the same thing from the cutter. The knife leaves a V-shaped depression with raised edges. These can be sanded away to tidy the line up if required.

If you wish to scribe planking on the sheet, an Olfa plasticard cutter is the best tool. It carves a groove in the surface; you will see a curly spring of plastic waste created sometimes.

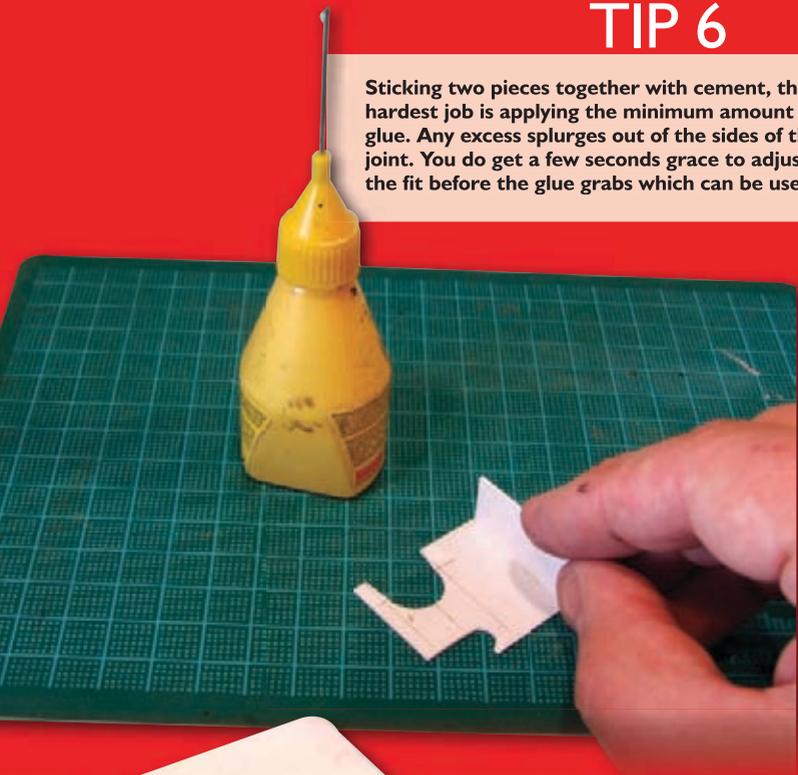
TIP 4

Handy Hint

The Olfa cutter will work just as well in thin brass and nickel silver metals and is easier to use when cutting straight lines than other tools.

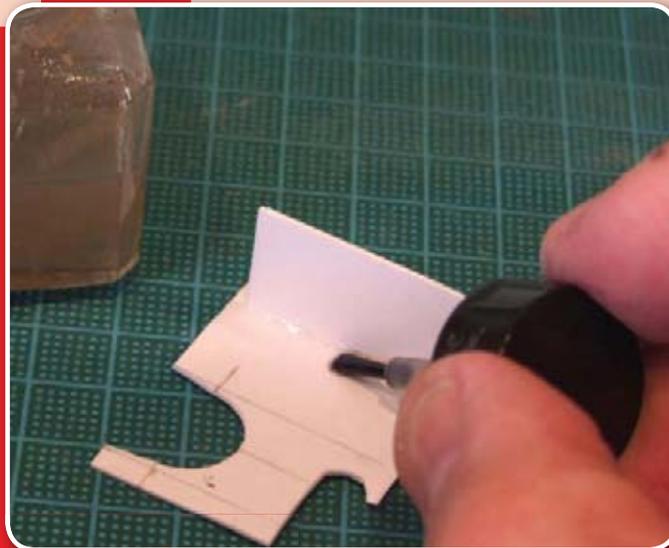
TIP 6

Sticking two pieces together with cement, the hardest job is applying the minimum amount of glue. Any excess splurges out of the sides of the joint. You do get a few seconds grace to adjust the fit before the glue grabs which can be useful.



TIP 7

The same joint made with solvent. Bring the two parts together and brush the liquid along the joint. Capillary action will do the rest. You don't get as long to adjust the two parts this way.



TIP 8

When laminating two sheets, most solvents are too harsh and can buckle the surface of the plastic. A gentler solvent such as Limonene avoids this problem.

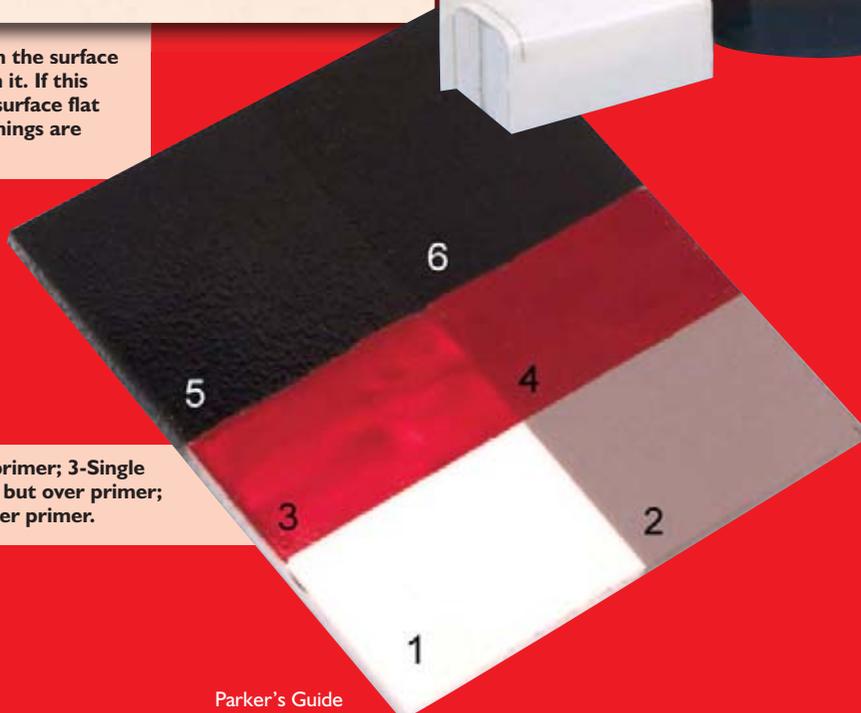


Disaster! I've touched some solvent on the surface of the plastic and left my fingerprint in it. If this happens, leave it to dry and sand the surface flat again. Don't panic and try this while things are soft, you'll only make it worse.

TIP 9

TIP 10

1-Raw plastic; 2-Sprayed with aerosol primer; 3-Single coat of enamel brushed on; 4-as before but over primer; 5-Aerosol sprayed paint; 6-as before over primer.





**Straight Brass 0.45 mm diameter Wire
10 lengths - £3.00
www.eileensemporium.com**

Old style TV aerials

Look at the rooftops near your house. What do you notice? TV aerials. In a similar scene from the 1950s, these would be even more obvious as early aerials were huge. Two designs proliferated, 'X' aerials and 'H' shaped ones.

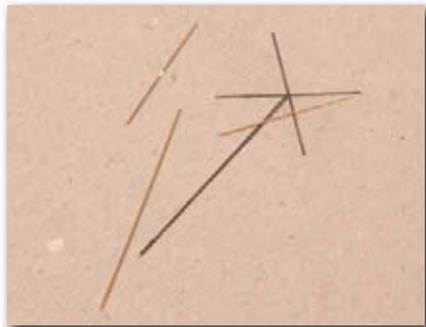
Setting out to model an 'X' shaped version and asking around to see if anyone knew how big they were, it was a shock when Richard Jones reported that each arm was a whopping 46 inches long. Nearly as

surprising was the fact he had one stuck on the top of his shed, but at least it was within reach of the tape measure. Anyway, this makes an aerial seven and a half feet across, or 30mm for 'OO' modellers.

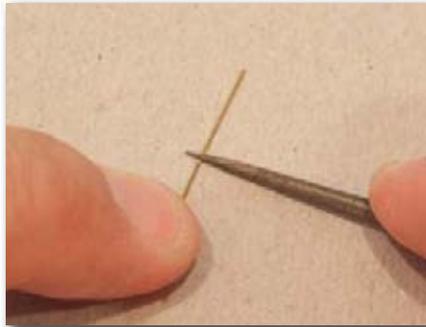
I didn't bother asking how thick the metal was, preferring to use some handy 0.45mm diameter straight brass wire for a model. It's the same stuff I use for loco handrails and so probably a bit thick, but vulnerable details need to be strong enough for the occasional knock.

Engineers might be able to tell the difference between the two types of aerial and probably the direction they should point too, but to me, the usage looks pretty random so I assume both would be useful. To that end, I knocked up the H version assuming the verticals to be 30mm long and the horizontal half that.

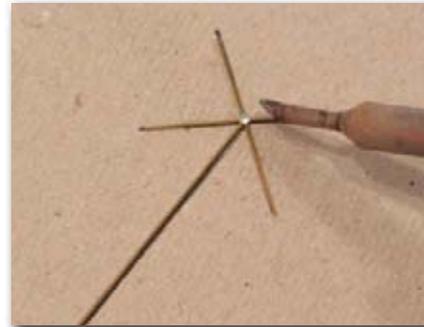
Construction takes a matter of minutes but a row of houses with these things poking up above the roof line brings a dose of authenticity to any layout.



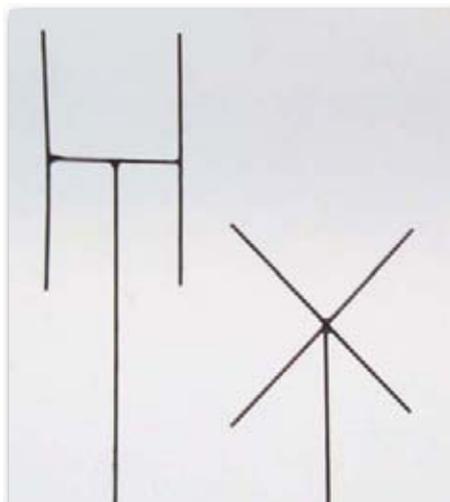
STEP 1: I started by drawing up the aerial on a piece of card. This makes positioning all the parts a lot easier and the surface will survive quite a lot of soldering.



STEP 2: Where the parts cross I filed a little of the metal away to keep the aerial nice and flat, it's not an essential step though.



STEP 3: Put a little flux on the join, a blob of solder on the end of your iron and heat everything up. Use the tiniest amount of solder possible as it makes cleaning up a lot easier afterwards.



STEP 4: (Left) Once complete, the metal was primed with a car aerosol and then a coat of matt black paint. I think the aerials were originally grey but anything on a town roof will turn black pretty quickly.

STEP 5: (Right) Fitting the aerial to a building was simply a matter, on the model, of drilling a hole to poke the wire into. For extra support, a small slot was cut in the lip of the chimney and a bit of superglue secured things. Real aerials would use brackets for this but this is quicker and I bet no one notices.



BR 21 Ton Hopper Wagon



Hoppers are fiddly, difficult things. Any kit is going to be more of a challenge than a simple coal wagon or van. The trouble is that the heart of the wagon is a great big open space that can extend all the way through to the bottom. In the model we have a monocoque construction rather than traditional separate chassis and body.

In an ideal world the kit hopper would be a single piece to which all others are stuck. Sadly this is rare as injection moulding a large item like this requires some serious pressures that tend to be beyond the equipment available to model railway kit manufacturers. Hence we have to build the hopper first, making sure all is square as we go. By working methodically though, it is possible and the resulting wagon looks impressive. It's an area where the RTR firms shy away – the complicated latticework structure is even more challenging when you need to reduce the number of components as far as possible for economic reasons.

The Parkside kit is as good as you could hope for. However you do need to read the instructions and carry out the steps in the right order. No skipping though with this one!

HISTORY

Built between 1952 and 1958, 16,800 21 ton hoppers rolled onto the BR network. The design owed much to an earlier LNER hopper which could trace its lineage back to the wooden cauldrons decades earlier. Diagram 146, which this kit represents, were mostly made by Shildon works. Alterations over the lifetime of the wagon were few – the middle side stanchion was shortened and in the 1960s some wagons gained roller bearings. The wagons spent most of their lives in the north-east of England where they were ubiquitous.

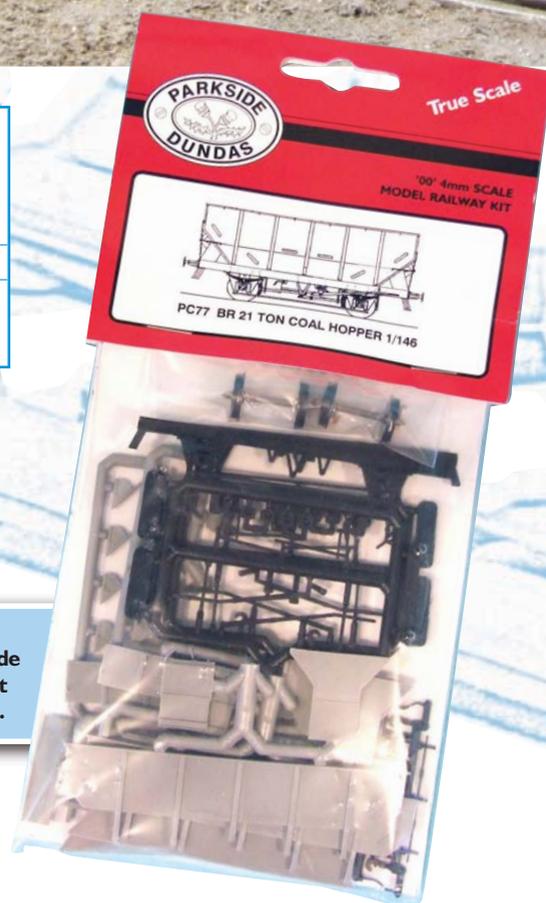
KIT FROM

Parkside Dundas

Millie Street, Kirkcaldy, Fife, Scotland, KY1 2NL
(01592) 640896

www.parkside Dundas.co.uk

BR 21 Ton Coal Hopper 1/146
Product Code: PC77 - £9.00



The Parkside kit as it comes.



USEFUL READING

*British Railways Wagons,
the first half million*
by Don Rowland

Published by Leopard

ISBN 0-7529-0378-0



STEP 2

Construction starts with a bit of preparatory work. First, the cut outs in the chassis need to be cleaned up to remove the moulding feed lumps. The rear set has been carefully trimmed with a sharp knife whereas the front is as supplied.



STEP 3

The end supports have to be drilled to accept the wire handrails. A 0.5mm drill is required for this along with a steady hand. To be fair you are just opening out the holes rather than drilling from scratch but be careful to avoid breaking through the side of the supports.

STEP 1



The Parkside kit laid out. Quite a lot of bits in this one. Be careful not to lose the wire either.



STEP 4

These two parts (5 and 6) are fitted together at an angle. The bottom edges are pre-chamfered but the end stanchions aren't so you have to do the job. The instructions say to file them, I preferred a sharp knife as it's easier to use and not disturb the bevels.

The top parts of the hopper are glued together. These must be at right angles to each other so keep checking them with a square. When you glue the two halves to each others, check again and then let the glue harden. Carry out the assembly on something you know to be flat (glass, CD or melamine chipboard) as getting this right will help you a lot later.

STEP 5



STEP 6



Now the middle parts of the hopper are added. Don't spare the liquid glue as the joints aren't perfect (OK, yours might be, mine weren't) but between applying the glue and it going hard there is time for adjustment. Check squareness again.

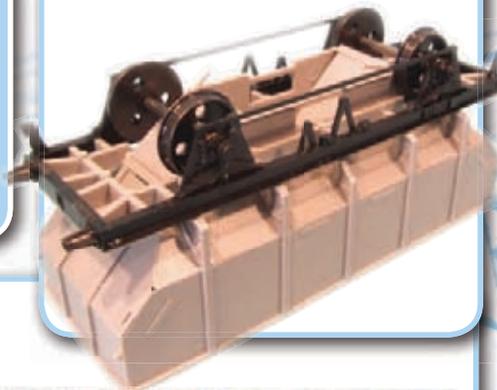


STEP 9

A bit of head scratching and the helpful instructions diagram is required to fit the stanchions along the sides. The middle ones are smaller than the others. I tacked these into place with tube glue and then poked them around to line up before running liquid glue to finally fix. Let everything harden up before moving on to the next step.

STEP 10

Check the bearing holes are big enough and fit the brass bearings. I attached a buffer beam first then a side frame. The kit is accurate so there isn't any need to jiggle things to get nice parallel axles. Fitting these is more challenging for OO modellers than normal as the hopper bottom is a tight fit between the backs of the wheels. It does fit, though if you have any problems, check the back to back measurement on the axle. Check the assembly on your flat surface and tweak as required. Then add the brakes and levers.



STEP 11

The kit supplies alternative axles boxes. I chose to use the roller type as that was what the prototype photo I followed showed. You could fit different ones on each side to give your fleet added variety.

STEP 14

Here's the clever bit. Mix some ordinary salt with a bit of water and blob it around the rust paint. Let this dry. A stiff mix works best applied with a brush or even paint stirring stick.



Let the paint dry thoroughly and then scrape away at the salt. I used a sharpened matchstick and then washed the residue away with a stiff brush and water. The result should be some rust patches where the edges of the paint are lifting away. I painted the solebars and numbers at this point.

STEP 16

Paint the wagon with pale grey body colour. A grey car primer works well for this as it's just the right colour. A quick spray will also cover the metal handrails better than painting straight on to them.

STEP 15





STEP 7

These hopper bottom and doors are next. These need a touch of fettling to fit in the chassis. The instructions say the bevelled edges should stick up above the chassis. Mine didn't; flush with the surface was as good as I could get. A quick dry run with the hopper showed that this would be OK though. The join is pretty well hidden.

Now for the fiddly bit. The hopper is glued to the chassis/doors assembly. The latter must stay flat or the wagon won't stay on the track. To check this I Blu-tack a couple of rulers to a flat surface, far enough apart so the ends of the chassis sit on them. As long as both ends of the chassis are sitting on both rulers properly then all is fine. If not, twist the part between your fingers. I worried about this much more than a perfect hopper to door join. Once dry, put in the centre mouldings (part 7) that form the hopper part inside. I needed to work them down a bit to fit all the way down but once in place they brace the structure nicely.

STEP 8



STEP 12

The last job is to fit the wire handrails. These are cut to length and super glued in place. As befits a kit from Scotland, just enough wire is supplied. I ended up supplementing this with some Gibson straight 0.45mm brass wire. I think the solution is to use one bit of wire to provide all the handrails for one end. I tried to be efficient and cut the two top horizontals out of one piece which left the remaining bit too short for the long one that wraps around the sides.



STEP 13

While these wagons may have rolled out of the factory with nice grey paint, a couple of days spent catching coal soon cured this. A few years later some serious rust should be obvious. This gave me the excuse I've been looking for to try a technique developed by military modellers to produce rust patches on plastic kits. The first stage is to paint rust colour wherever you might want some rust on the finished model. Aim especially for joints between panels as the tin worm tends to grow well here.



STEP 18

I like to dust some black powder paint onto the nearly dry paint from the last stage. This gives the finish a bit of texture and also matts the enamel completely.



STEP 17



Give the paintwork several washes of matt black paint. Ideally start with Humbrol and then a couple of coats of Precision weathered black. Thin the paint well and apply it from the top. Inside, use thicker paint.

STEP 19

On an empty hopper, the only place to put weight is the hopper bottom. 'Liquid lead' poured in and fixed by dropping superglue onto the lead balls. I dusted more powder paint on as the glue can be a bit shiny.



The finished wagon.



TELEPHONE

BOXES

There is one building that absolutely every model railway layout should have somewhere on it, a telephone box. While it is possible to buy ready to use versions, either they are 'HO' scale or don't have the all important see-through windows, having been moulded as a solid resin lump. Fortunately, for a little bit of money and a few hours work, you can kit-build a model that you can be proud of.

The correct telephone box has the advantage of helping to set the period of your model. If you favour one of the big four railway companies, then a classic red kiosk, known technically as the K6, is essential. If you are working on one of the now fashionable 1980s models then the less attractive (in my opinion) chrome versions introduced by British Telecom is as important as streets full of nice new Mini Metros.

Boxes turned up everywhere, from bucolic villages to inner cities and you could even find them in use in factories. Every railway station would have had at least one either on the platform or by the entrance. We tend to forget now that every man and his dog has a mobile phone, just how pervasive these things were.

This ubiquity has led to plenty of kits appearing on the market. For the classic red box, I've used a Langley Models K6 kit. They also produce a K2 which was an earlier and larger version found in city centres. Both kits use a mix of brass and whitmetal components and are available in 4mm and 7mm scales.

Bringing things a bit more up to date we have a Shire Scenes model for the KX300. This is a nice simple fold up model. Shire kits are ideal for newcomers to etched metal in that they are designed for superglue assembly and the parts are coated so that no priming is required before painting.

One slight snag with the modern box is that it's not currently listed in the range for 4mm scale, but they can still be found on trade stands, just like I managed to do, and is still being produced for 'N' gauge modellers. It's the same kit as I built, just a bit smaller!

Should you need a modern box, I can recommend the square version from the same manufacturer, which is still available in 4mm and known as the KX100. For the late 1960s fan you can even have a K8, the red box with big windows, but perhaps this is all getting a little bit too far into anorak territory!

One advantage of the red boxes is that the colour helps draw the eye to wherever the model is sited. If the colour offends your eye,

then some were found painted grey with red window bars in rural areas. There were even experiments with yellow that quickly died out after a resounding 'no' vote on the TV show *Nationwide*. If your layout is set in Hull, then the boxes should always be white as this was the only city to have its own telecoms operator. Finally, in factories, boxes were sometimes painted by the local maintenance teams and could be any colour they had paint for. There used to be a 1970s kiosk in a Ford plant near me painted a fetching sky blue colour.

Whatever you decide to do with your box, please keep the door closed. I know all the kits on the market allow you to model it open, but both the Post Office (note for younger modellers, telephones used to be provided by the Post Office which is why they were the same colour as the post boxes) and BT installed good strong door closers on their kiosks, so unless you are modelling one that has been vandalised, keep it shut!



PROTOTYPE ONE

K6 box at Kilmartin, Scotland 1990. This just shows that you don't need a particularly good paint job on your model, especially if you want to represent a box in need of a repaint.



PROTOTYPE THREE

The classic 'Button B' phone box interior. These disappeared in the 1960s. True 'phone box spotters will notice that this is in a K1 box at the Tramway Museum, Crich.



PROTOTYPE TWO

Three sided modern kiosk, Leamington Spa 2010. Not exactly the same internal layout as my model, but re-creating this particular box would be easy enough with a little bit of plasticard.

SUPPLIERS

Langley Models

166 Three Bridges Road, Crawley, Sussex,
RH10 1LE

www.langleymodels.co.uk

Kit Ref: F31

Telephone box. Series 6 - £8.00

Shire Scenes

The Old Armoury, North Street, Somerton,
Somerset, TA11 7NY

www.shirescenes.com

3 Triangular Telephone boxes

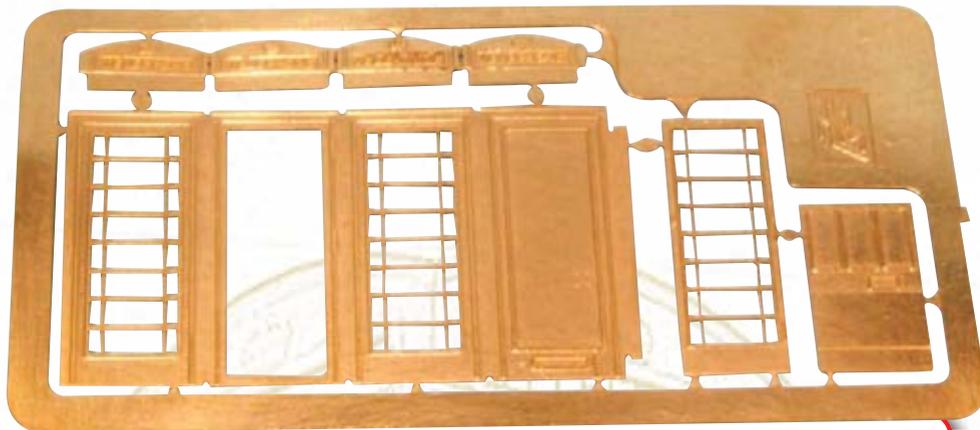
S28 – Note, only 'N' gauge versions are
currently listed but the 'OO' version can
still be found.

EDM Models

19 Briar Avenue, Acomb, York, YO26 5BX

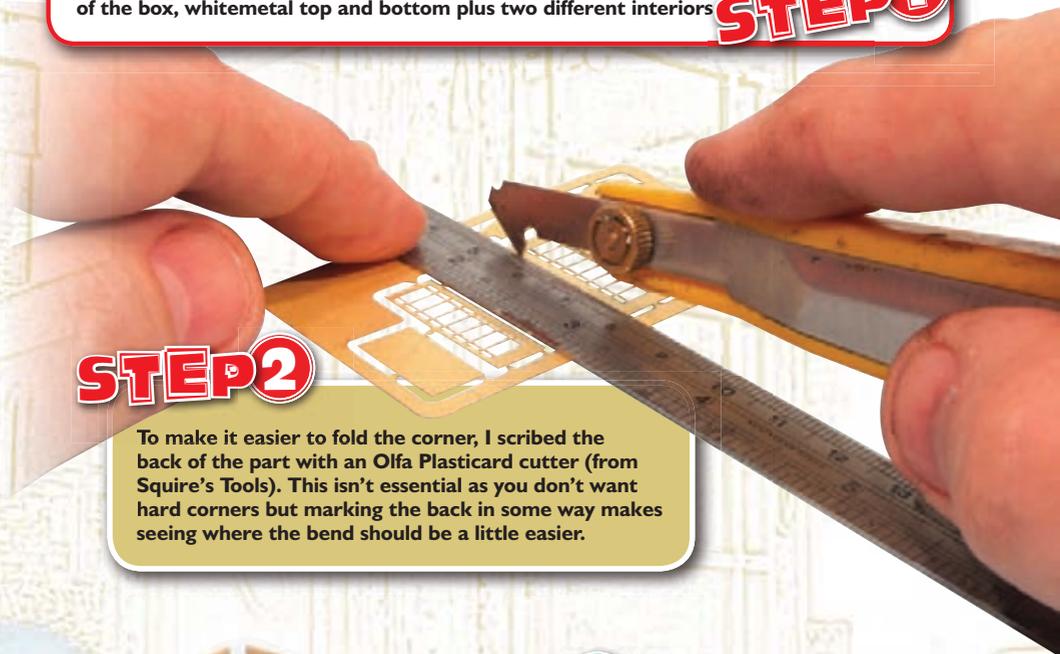
www.ngtrains.com

Three Can Pack of Dullcote - £11.75



The Langley Modern Telephone Kiosk kit contains an etch for the body of the box, whitmetal top and bottom plus two different interiors

STEP 1



STEP 2

To make it easier to fold the corner, I scribed the back of the part with an Olfa Plasticard cutter (from Squire's Tools). This isn't essential as you don't want hard corners but marking the back in some way makes seeing where the bend should be a little easier.



STEP 3

The basic box folds up easily enough as long as you grip the part with some small pliers. The top is wrapped in etch and the base inserted into the box body. All joints are made with superglue.

STEP 4

Since the final colour is to be red, I primed the metal with red oxide colour car aerosol primer. Working on a cold day, the can was sat in warm water for five minutes to make sure the paint came out smoothly.



FURTHER INFORMATION

This website has more information and photographs of telephone boxes and equipment than you could possibly want:

www.telephonesuk.co.uk

If you fancy a nice day out, *The National Telephone Kiosk Collection* can be found at the Avoncroft Museum of Buildings, near Bromsgrove.
www.avoncroft.org.uk

Requiem for a Red Box (ISBN 1-85510-008-8) by John Timpson is an excellent read and although out of print, is reasonably easy to obtain second hand. Your local library may also have a copy.

STEP 5



A couple of thin coats of Humbrol gloss red gave the model a nice finish, but I felt it was too shiny. Testors Dullcote, a matt varnish from America, was wafted on and killed the sheen without hiding any detail.

STEP 6

Glazing came from the plastic that makes up part of the packing for a new shirt. It's excellent stuff, nice and clear. It's stuck in place with canopy glue, a PVA used by aircraft modellers because it dries clear.



STEP 7

To finish up, the interior is stuck to the back wall and the top popped on. I trimmed the bottom lugs from this as I think my choice of plastic was too thick and extended too far up the sides. I should take my own advice on dry-runs before final fitting!



The Shire Scenes modern box is entirely etched. You actually get three models on a sheet which offers excellent value for money.

STEP 8



STEP 10

Use the box top as a guide for the angles, the body should fit neatly underneath it as shown here.



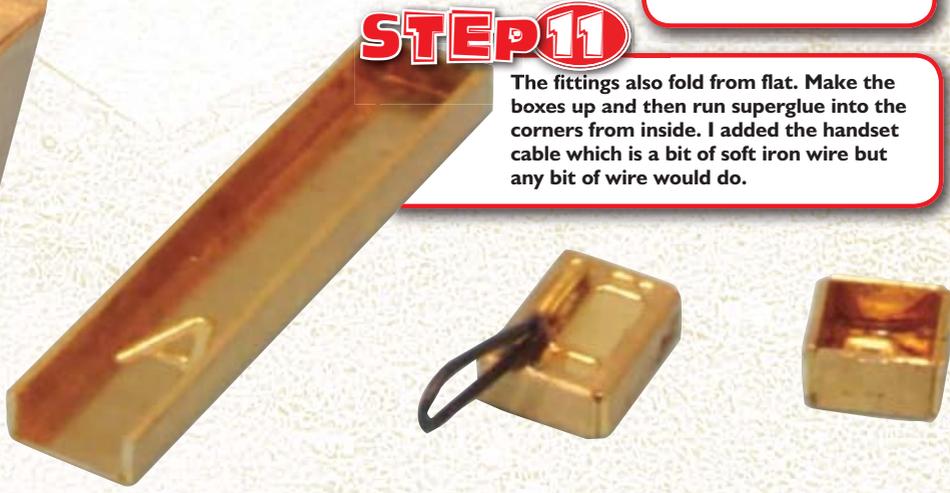
STEP 9

Remove a box body from the etch with a large knife and clean the leftover nibs with some scissors. Then I used some flat sided pliers to assist me in folding along the half etched guide lines. It's origami with metal. The British Telecom logos are etched into the windows so if you want to model a 'modern image' box you'll need to removed them before folding.



STEP 11

The fittings also fold from flat. Make the boxes up and then run superglue into the corners from inside. I added the handset cable which is a bit of soft iron wire but any bit of wire would do.





The fittings are glued to the back wall, again with superglue.

STEP 12



STEP 13

To represent the prototype's chrome finish I used Humbrol metalcote - 27001 Aluminium. This proved to be difficult to brush paint nicely, or at least I struggled, so I stuck the model down with some double sided tape and airbrushed it. You can buy the same paint in a spray can if you don't have an airbrush.



STEP 14

As with the red box, the glazing was stuck in using canopy glue. The shirt plastic was a bit thick for this so I used some from a bubble pack saved from the bin. The end result - a finished 'phone box, fresh from the 1980s!

STEP 15

The square version of the modern kiosk assembled in the same way. I made this one some time ago as a mini diorama.



Covered Carriage Truck



Now here's a really useful item of rolling stock, the LMS CCT. First built in 1938 they were still regularly to be seen well into the 1970s. End doors and flaps to cover the buffers meant motor cars could be loaded by being driven the length of a train while side doors allowed their use on parcels and mail traffic. I'd always assumed that CCT stood for 'Covered Carriage Truck' but Parkside Dundas, who produce the kit, tell me the acronym means 'Covered Combination Truck'.

For a bit of variety I have modelled a wagon in rail blue, although the photos show the livery was mostly mucky brown! I found some nice shovs of condemned wagons on the web, which show the

end door bracing slanting the opposite way to that on the kit – I decided to ignore this as I'm not sure if it changed during their life. Besides, fixing it wouldn't be that simple and the end result could look a lot worse than the original moulding.

When building any item of rolling stock its important to make sure that all the wheels touch the rails. That's

easy to say but not always that easy to do, especially with long wheelbase wagons made of plastic. These can twist along their length and leave a wheel waving in the air. To counter this it is possible to 'compensate' the vehicle. One axle is set up to rock giving a three point suspension rather like the traditional three legged milking stool. The axle ends

form two 'legs' with the pivot providing the other. Therefore if the model isn't quite square, you still end up with something that runs.

To achieve this I've employed a MJT etched unit that is designed to work with ready to run wagons. The alternative is to pivot the

W-irons that support the axleboxes, but as the CCT uses unusual long versions, etches for this are not easily available (someone will doubtless know a manufacturer of just such a unit and let the Editor know) hence my choice of a unit with inside bearings. The main problem is that being designed to stick on the floor of RTR wagons, it's too deep for the kit (RTR floors are usually above the top of the solebars) so some bodging is required with a hole in the floor. Don't be scared by this, bodging or re-engineering, is just part of modelling. We all do it, the skill is covering it up!

KIT FROM

Parkside Dundas

Millie Street, Kirkcaldy, Fife, Scotland, KY1 2NL

www.park-sidedundas.co.uk

PC40 LMS CCT Motor Car Van (Diag. 2026) - £12.10

MJT COMPENSATING UNIT:

Dart Castings

17 Hurst Close, Staplehurst, Tonbridge, Kent, TN12 0BX

www.dartcastings.co.uk

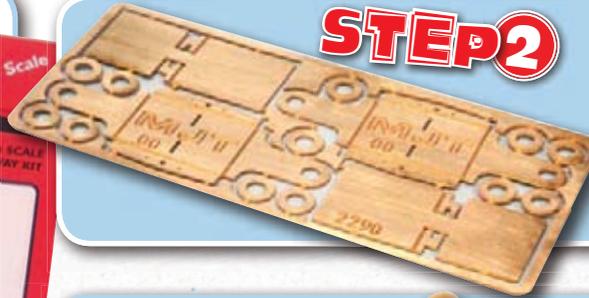
2290 Wagon compensation unit (enough parts for 4 wagons) - £4.50

STEP 1



When you look at the kit, there aren't that many parts. What we have is basically a long van and in theory no more complicated than its shorter relative. Romford wheels, bearings and metal buffers are supplied in addition to the plastic parts.

STEP 2



The MJT compensation unit is supplied as a flat etch. You have to remove the relevant parts with a Stanley type knife and fold them up. Two units per etch are supplied and you only need one per vehicle.

STEP 3



For our purposes, only two parts are required. These fold up as shown. On the left is the base, on the right, the cradle for the wheels. Bend these parts along the half etched line with the line inside the fold using some small pliers. I've strengthened the cradle with a touch of solder in the corners. This isn't vital and superglue would probably work as well. Make sure everything is square as you work.



The cradle fits over the raised bits on the base and should rock from side to side. The ends of the tags that poke through the cradle can be tweaked to make sure it doesn't fall off. If the slots are too small, poke the blade of a modelling knife through and waggle it a bit. One wheel has to be removed from the axle by twisting it. Put the axle in the cradle and replace the wheel – check this against the unaltered axle to make sure the gauge is the same. Make sure the wheels rotate too. To allow the unit to rock the pinpoint axle ends are filed flat.

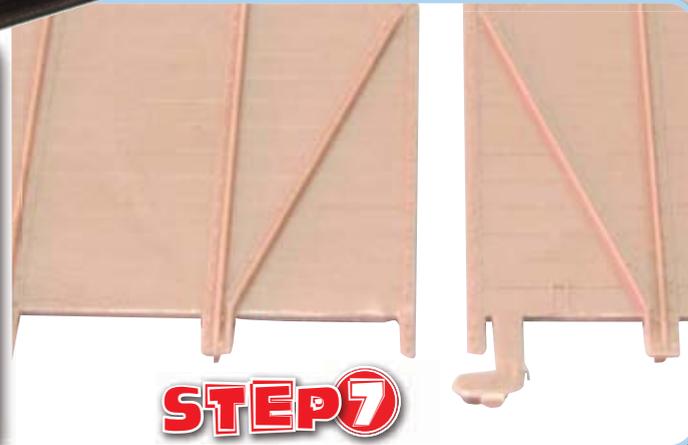
STEP 4

A hole is made in the floor to allow the compensation unit to drop through. Drill the corners and join the holes up with a knife using several shallow cuts for this. Then attach the solebars and fixed wheelset in the normal way making sure that the axle is at 90 degrees to the sides.



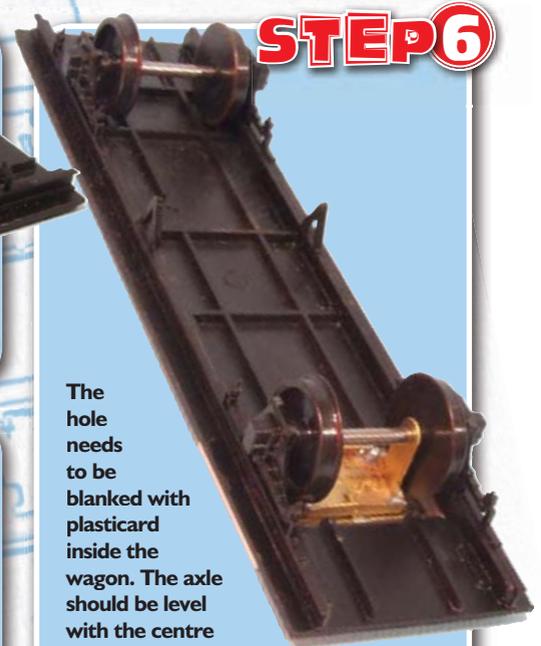
STEP 5

Starting on the body you have to remove an L shaped bit of moulding that protects the fine ends. This is a good idea to save damage in transit but it would be an easy step to forget if you don't read the instructions properly.



STEP 7

STEP 6



The hole needs to be blanked with plasticard inside the wagon. The axle should be level with the centre of the axlebox so check to see if you need to raise this plate before glueing it in. I needed a bit of 0.5mm microstrip (scrap plasticard will do just as well) around the top of the hole to get things in line.

STEP 8



There isn't a lot to do with the sides but I replaced the door handles with bits of 0.45mm brass wire. This is easier to do before assembling the sides, simply scrape the old handles off, drill a small hole and pop the new ones in place held in with a dot of superglue. LMS enthusiasts will want to remove the label clip on the left hand side too.



STEP 9

How do you pick up your wagons? By gripping the sides? Me too, so on a long wheelbase van, bracing the sides with a plastic divider isn't a bad idea to stop them bowing inwards. I know the roof should stop this but if that joint fails, this saves you having to fix it.

The roof isn't a bad fit but the points where the sprue is attached took a lot of cleaning up with knife and files. I considered making life a bit easier by removing the rainstrips, cleaning the roof up and replacing them with microstrip but managed an acceptable job without resorting to this. Fit some lead or bits of metal inside before sticking the roof on aiming to match the weight of your larger rolling stock.

STEP 10

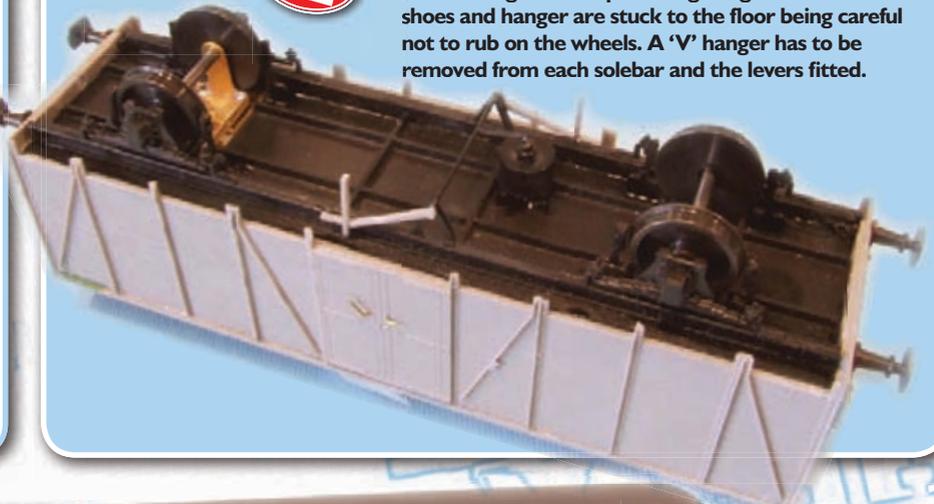


STEP 11

The brass buffers have to be altered as the prototype ones had flat top and bottoms to the faces. These need to be consistently done or the model will look odd but marking out is difficult. Cutting a 4mm wide strip of masking tape which is stuck to the face makes the job of filing the top and bottom a lot easier. In the photo from left to right you have the buffer as supplied, with the tape applied and finished item.



STEP 12



The brake gear is simple enough. Eight shoes and hanger are stuck to the floor being careful not to rub on the wheels. A 'V' hanger has to be removed from each solebar and the levers fitted.

STEP 13

Colours used on the model are:

- Body- Railmatch 451 Faded Rail Blue
- Underframe - Railmatch 412 Weathered black
- Roof - Humbrol 67 Tank Grey
- Lettering - Humbrol 147 Pale Grey (Only needed if you are too stingy for transfers)



With the base colours dry I scuffed the body paint with a fibre pen and then washed it all over with well thinned Railmatch underframe dirt. A blast of this and earth colour from the airbrush was a nice finishing touch but not essential. Bachmann couplings were left off until after painting as I didn't want to gum them up with the spraying.

STEP 14



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Soldering

metal

If there is one skill that divides modellers it's soldering. You are either one of those people who is happy waving a hot iron around or you aren't. Those who are can't see what all the fuss is about. To everyone else the art of joining two bits of metal together with more metal is as big a mystery as why watching *X-Factor* in slack-jawed amazement is cool but creating miniature replicas of railway lines isn't. It's not just modelling where this divide is found either, classic car owners fall into welding and non-welding camps too. Joining metal is obviously the skill that sorts the men from the boys so to speak.

Before starting I should explain that this guide relates to sticking bits of etched brass kits together – structural soldering as it were. This differs from electrical soldering in that when wiring you should heat the joint and apply solder to the hot area. Kit builders pick up solder on the iron and heat this and the joint at the same time. Well that's the way I do it anyway. To be honest once you get started you develop your own variations on the basic methods to suit yourself.

In essence, soldering is simple. Clean the surfaces to be joined. Apply flux. Apply heat and solder to the join. Wait for the solder to run and then remove the iron letting the joint cool. Couldn't be easier.

Of course in the real world there is a little more to it. The first thing to understand is that brass and nickel silver, the common materials for our kits, absorb heat differently. Nickel is far easier to work with as the metal heats up slowly whereas a lump of brass sucks the heat up, sometimes as fast as you can put it in. By the time the solder is flowing you can be dealing with quite a warm piece and toasted fingers can result! If this sounds scary don't worry as with a little practise you get the hang of it and can get the heat away before burning your digits.

Because soldering is seen by many as a black art, there are many myths that have grown up around it. For example, you do not need expensive equipment to get started. Twenty five quid will get you a reasonable 25w iron and stand. Another tenner for solder and flux and you're ready for a lot of kit building. Tools such as a Resistance Soldering Unit (RSU) or a gas torch will find their place in the experienced modeller's workshop but are in no way essential. Likewise, the many different solders and fluxes have their place but you can get a lot done without them. I did anyway and if I can do it, so can you.

Soldering metal is definitely a skill worth acquiring. Even if you never plan to build an etched kit, being able to join two bits of metal together opens up a world of possibilities for all sorts of jobs on a layout. Some things need to be made of metal to be strong enough to survive and super glue just won't do the job as well. The trick, as with so many things, is to start with simple joints and as you gain experience, move on to the more difficult jobs. The photos show the tools you need and how to make a simple right angle join. Elsewhere in this offering, there are proper etched kits where you can put all this stuff to use.



TIP 1

Lets start with the tools required. Obviously you will need a soldering iron. I've used both of these successfully for model making. At the top is the Antex 25w I made my first etched locos with and below it my current favourite, a 45w Antex. The larger iron heats the area being soldered faster and allows me to work quicker. Don't think that a smaller iron will be easier for a beginner to handle, something about 15W in size will struggle to get the metal hot enough for solder to flow. At the end of the iron you find a replaceable bit which should be around 2-3mm wide at the tip. That's fine for most work but sometimes a smaller one is handy for detail work but not essential in the early stages.

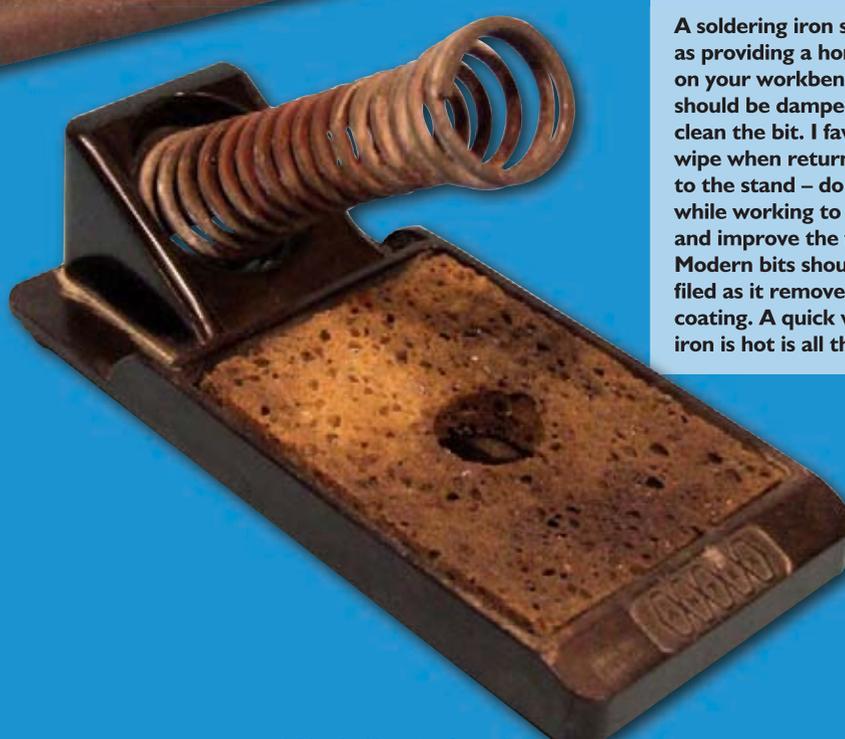


TIP 2

What you don't need is (top) an antique iron that has to be heated on a gas ring or anything like the huge and unwieldy 75w beast below. It's too large and difficult to manipulate for our small scale work. Using a big iron is not macho, you'll heat up the metal too fast and all the nearby joints will melt as well. Of course there are occasions when this sort of kit is handy but not often for the 4mm modeller.



A soldering iron stand. As well as providing a home for the iron on your workbench, the sponge should be dampened and used to clean the bit. I favour a quick wipe when returning the iron to the stand – do this regularly while working to prolong bit life and improve the flow of solder. Modern bits should never be filed as it removes the protective coating. A quick wipe when the iron is hot is all that is required.



TIP 3



Solder, ideally a tin/lead mix, this is electrician's cored solder in which the metal is a tube with a fine flux centre. Most modelling suppliers stock the stuff and a 0.5kg roll will last you for quite a long while. Nowadays you will find that lots of places sell a lead free alternative and this is fine as long as it has some silver content. Without this the solder doesn't flow as well. I've used it but prefer the old fashioned version.

TIP 4

TIP 5

To help the solder flow you'll need some flux. Left to right: Copalux from a DIY store, my preferred general purpose paste. Powerflow flux for tougher joints. Both these must be cleaned from the metal after a soldering session or the joint will go green. Finally Carrs Red, a non-corrosive liquid flux best saved for times when you can't scrub the joint in the sink.



While it's best to keep the amount of solder in any joint to the minimum, sometimes excess metal must be removed. If there is a lot to get off then the solder sucker (top) is ideal. It's a sprung loaded syringe – cock it, warm the metal and poke the nozzle into the solder. Press the button and the excess is sucked up and away. Alternatively the three sided scraper can be used. For smaller deposits, fibre pens (bottom) are surprisingly effective at cleaning things up

TIP 6

TIP 7

The metal you are fixing gets hot so some method of insulating delicate fingers from it is a good idea. Bits of wood, lolly sticks or forks from the chip shop work well. Best of all if they aren't the right shape you can hack them about to make bespoke tools. Sophisticated types will prefer tweezers but they can act as a heat sink and make it harder to heat the solder.



MAKING A SOLDERED JOINT

STEP 1

Before attacking a kit for real, practise making joints with brass offcuts. These can be acquired from friends or at shows where manufacturers of etched kits are selling off their waste products. If all else fails, raid the local model shops K&S metals rack for some of the thinner bits of brass. A simple right angle joint is a good starting point – if you can get this right, most brass kits will be within your capabilities.

First job is to clean the metal with a fibre pen or fine emery cloth. I prefer the former as it doesn't scratch the metals surface but here this isn't important. Do not use Brasso as it leaves a chemical film that impedes soldering. Next, paint on some flux – be generous as you can always clean off the excess afterwards. The sort of brush that comes with cheap paint by numbers sets works fine for this. Just don't use it for anything else!

STEP 2

STEP 3

Pick up a small amount of solder, enough to cover the tip of the iron and place it and the iron in the joint. Hold it for a moment to let the heat flow and then draw the tip along the joint. The flux should sizzle and the solder flow. If the iron sticks, the heat is being drawn away by the metal, slow down and you'll be okay. Sharp eyed readers will notice that I am holding the metal with a lolly stick. When you've finished, keep holding it until the solder has cooled.

STEP 4

Test the joint by pulling it. If it gives way then have another go with a tiny bit more solder. Assuming all is well though you need to clean things up. I use Shiny Sinks cleaner scrubbed on with an old toothbrush and then rinsed off. If you skip this step the joint will go green and eventually furry. This will certainly repel any paint! I usually clean up whatever I'm working on at the end of a session as this reduces the chance of any flux getting trapped.

SOLDERING PROBLEMS

THE IRON STICKS TO THE METAL AND THE SOLDER REMAINS IN A LUMP.

The metal is sucking the heat out of the iron faster than it can pump it in. This is a common beginner problem as they try to use too small an iron. Sometimes sitting and waiting will raise the temperature enough so work slower. A more aggressive flux like Powerflow can occasionally help.

THE SOLDER WON'T GO IN THE JOINT.

The joint is dirty. Take it apart and clean it up properly you mucky pup. Make sure you use plenty of flux too.

THE SOLDER FLOWS WHERE I DON'T WANT IT SUCH AS OVER RIVET LINES.

Try colouring these in with a permanent pen. As mentioned above, solder doesn't stick to dirt so put some 'dirt' where you don't want solder. If you do have solder obscuring detail, put some flux on it and smooth the solder around to give a bigger but thinner covering. Then polish with a fibre pen.

I KEEP BURNING MY FINGERS.

Try wearing some leather finger pads made for people polishing metalwork. You can slip them over your thumb and first two fingers which allows the item being worked on to be held while the delicate digits remain un-singed. My pads came from Cousins UK (www.cousinsuk.com) for 75p each. Two styles are available, with or without ends.

Etched Kits

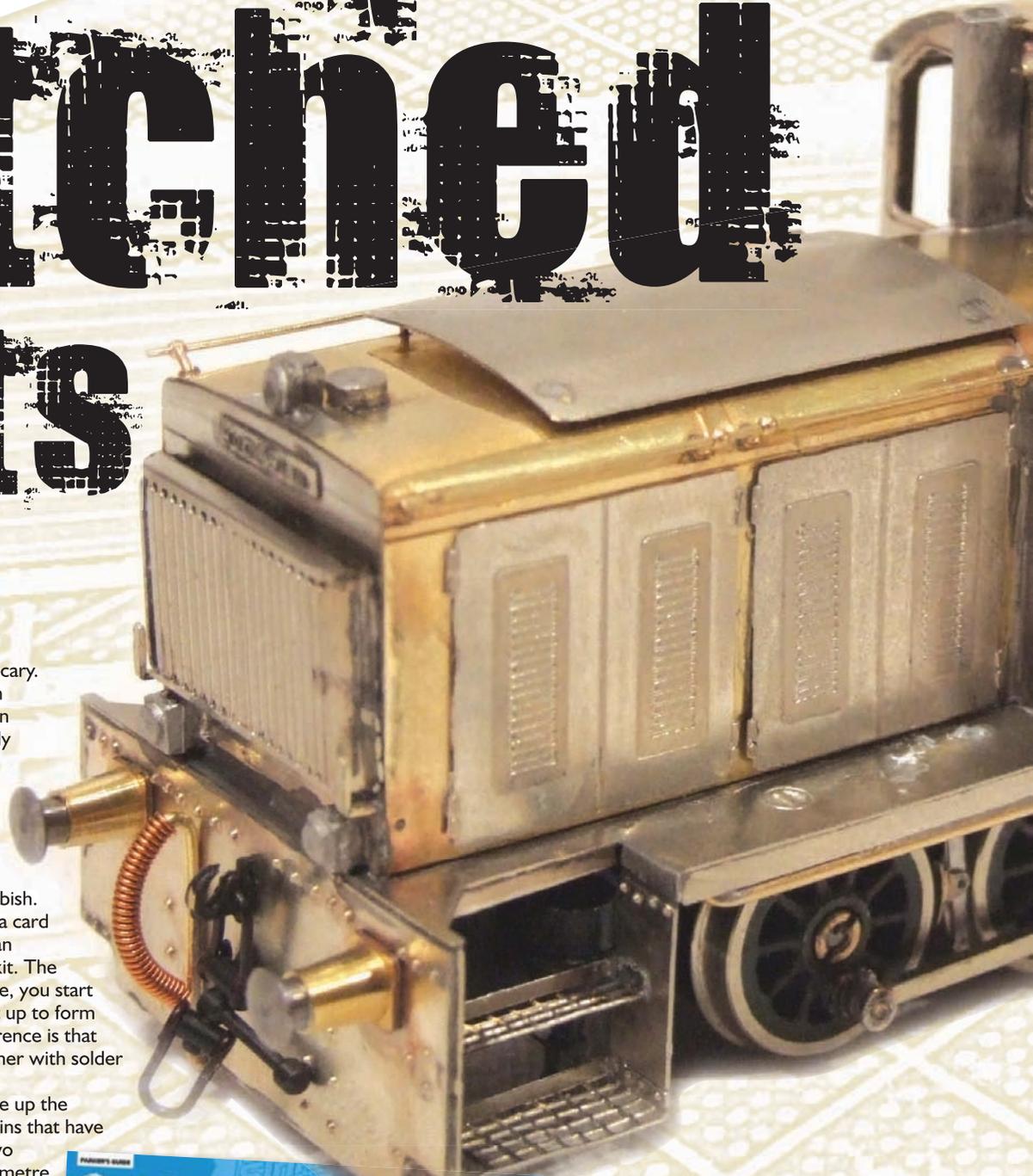
Etched brass kits are scary. Only a modeller with years of experience in engineering and a fully equipped workshop can contemplate making models from metal. Obviously the average reader of a magazine such as this would be daft to even try.

The above, is of course, rubbish. Ask yourself this, "can I build a card kit?" If the answer is "yes" than you can also build an etched kit. The principles are exactly the same, you start with a flat sheet which is bent up to form a 3D shape. The biggest difference is that you tend to stick things together with solder rather than glue.

I'm afraid you do need to fire up the soldering iron – a lot of the joints that have to be made rely on affixing two parts of metal less than a millimetre thick together. Glue needs a decent area to give the joint strength and this doesn't often occur within a metal kit. Don't be scared though, most of the joints are as simple as the one I showed you on pages 70-73. Just make them one at a time and you'll be fine.

This guide started as the usual step-by-step build of a kit, but it quickly became obvious that before you start, it's helpful to know what is likely to face you once you open the box. The techniques are different from those required to build a plastic or white metal kit and there are certain conventions that those with years of experience are aware of and yet aren't obvious.

Your first question is probably, "What is an etched kit?" Put simply etching is a process where a chemical is used to eat away at a sheet of metal to leave the parts we require

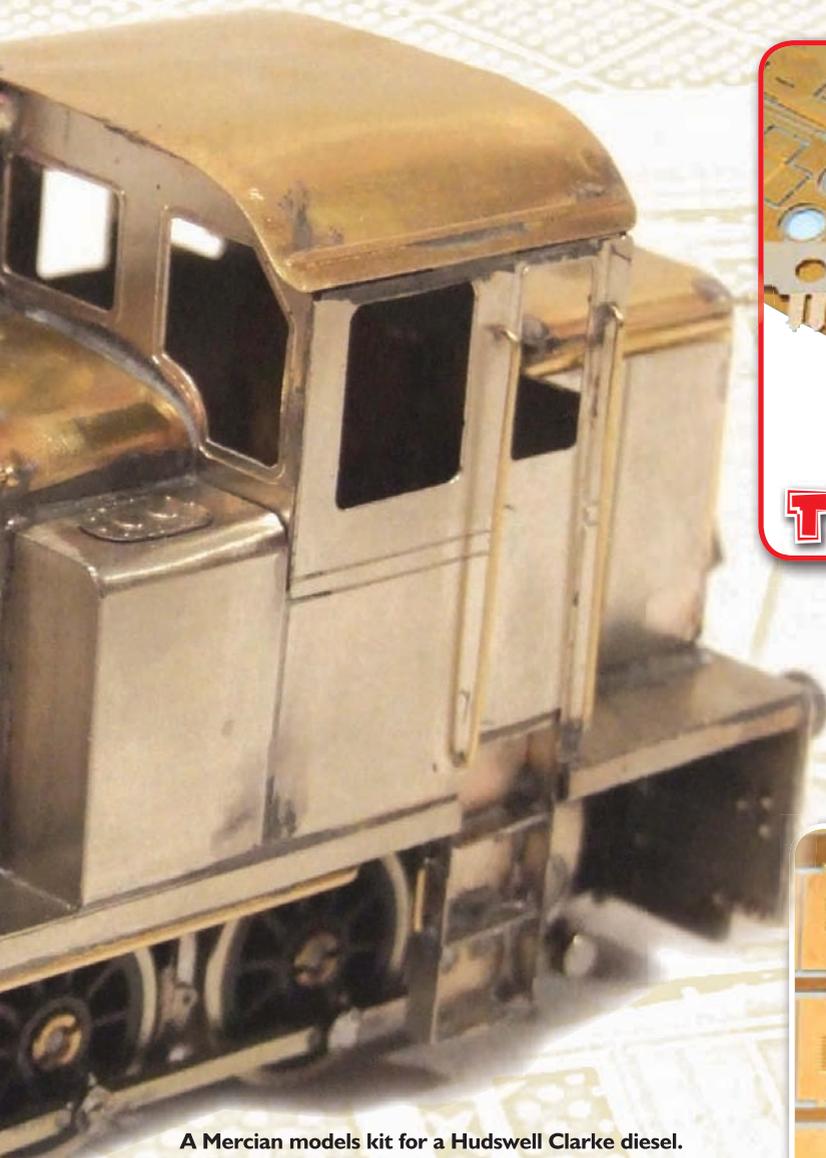


for our model. When you open the box, this sheet or sheets will usually be wrapped in tissue paper to keep them clean. If possible, try to have a look at the kit in the shop or at a trade stand before you buy – a lot of the time the guy behind the counter will be the manufacturer and he or she will be able to tell you more about the work required

to assemble it. Normally they will also be happy to offer after-sales advice and some even happily replace parts mangled by modellers.

Etching is very good at replicating thin metal parts but pretty hopeless at solid bits. Expect buffers and axleboxes to be included as castings for example, and in loco kits, no-one expects you to fold a dome up from flat! Newer kits may include resin items as well. Don't worry about any of these, they can be glued on with superglue.

One word of warning – unless you have good reports about a particular model, stick with kits designed in the last ten years or so for your first attempts. They will have benefited from more modern design techniques and will usually be more accurate with fewer pitfalls. There are some horrors out there perpetrated in the 1970s and '80s which although they can be made up are rather more 'interesting' than you might care for.



A Mercian models kit for a Hudswell Clarke diesel. This kit is mainly etched in nickel silver, apart from the bonnets and roof which have to be bent, which is much easier in brass.



TIP 2

While we normally describe kits as 'etched brass', you'll often find parts made from nickel silver. This material is easier to solder as it doesn't conduct heat as quickly as brass but it's brittle which can make forming curved parts much more difficult. Nickel is more expensive for the manufacturer too but you'll normally find it used for the parts under the footplate in loco kits.



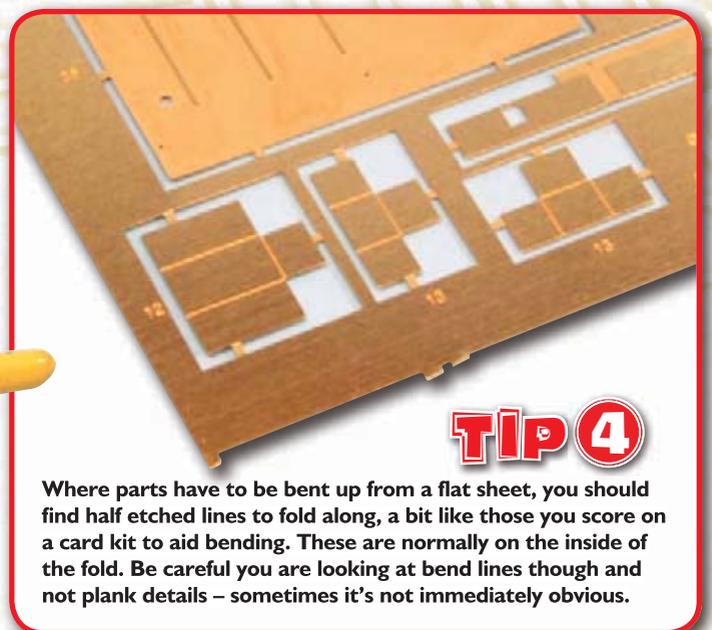
TIP 3

The etching process doesn't have to go all the way through the sheet of metal. Much surface detail can be created by 'half etching'. The bonnet sides on this kit are created this way and need no work by the modeller yet are square, accurate and consistent.



TIP 1

The basic etched kit tools aren't that extensive assuming you have files and soldering gear. A good knife, some scissors for trimming (these cost pennies from Ikea years ago and are still going strong) and most importantly some square ended pliers. Of course you can invest in more goodies but a lot can be achieved with this stuff.



TIP 4

Where parts have to be bent up from a flat sheet, you should find half etched lines to fold along, a bit like those you score on a card kit to aid bending. These are normally on the inside of the fold. Be careful you are looking at bend lines though and not plank details – sometimes it's not immediately obvious.

Forming parts is not difficult, just use the square ended pliers to support the edge of the half etched line and bend it with your fingers. If the bend is very long such as the solebars of a coach, a pair of cheap steel rules in a vice with the etched part clamped between them will provide more support and save the cost of a proper set of bending bars.



TIP 5



TIP 6

To aid assembly, many designers will use slots and tabs to aid part location. A kit with these will be (if they are in the correct place) a lot easier to build than one without. In this case the bonnet plugs into the footplate and just needs a touch of solder to fix – far easier than trying to position the same part if no aids were present.

TIP 7

As well as corners, many models will require metal to be curved for roofs and bonnets. This is probably the most challenging task you face when kitbuilding and so it's worth seeing if the manufacturer has done this part for you or can supply the part pre-formed.



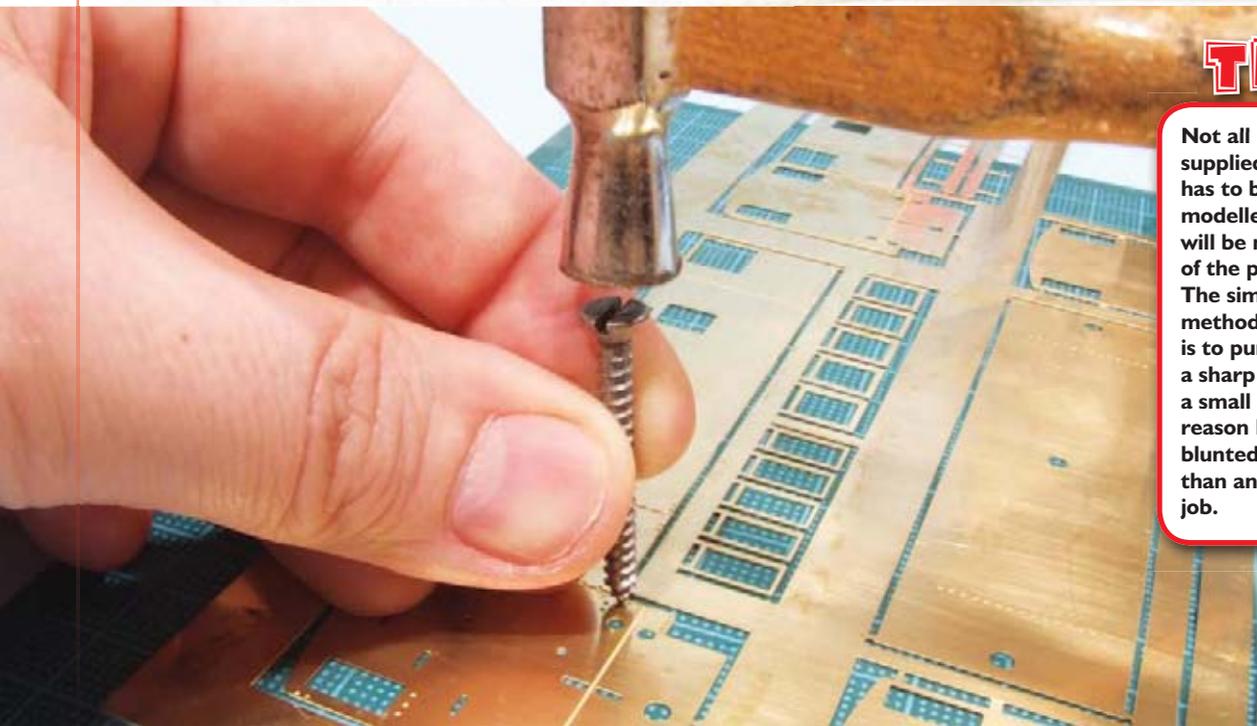
TIP 8

Each part is attached to the fret with little tabs. I cut these with a heavy knife to release the parts. Be careful with tiny bits which can ping off into the distance if not held down. Don't cut too close to the part as this can cause distortion, just trim off any leftover tab with the scissors or a file.

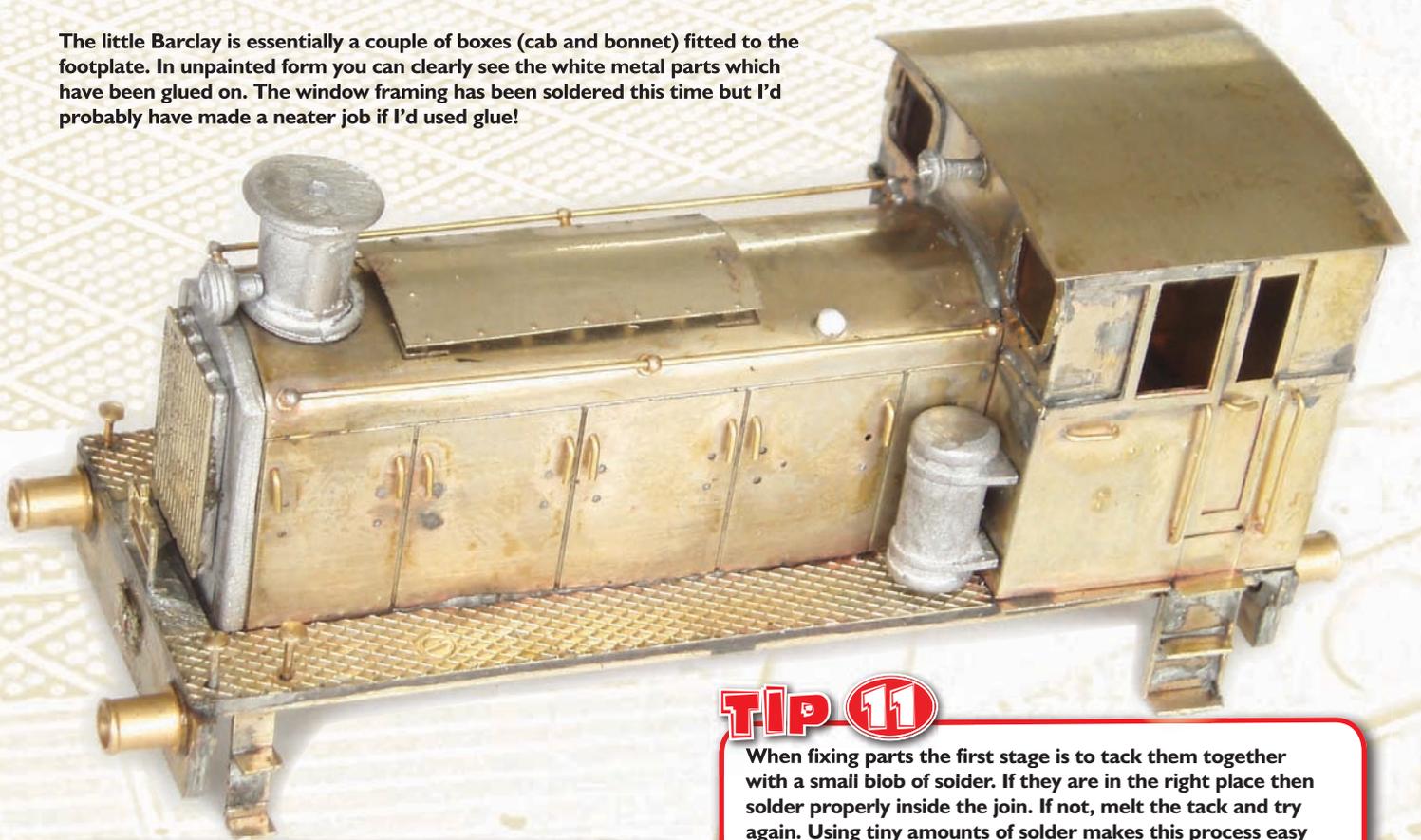


TIP 9

Not all rivet detail will be supplied half etched, some has to be formed by the modeller. The locations will be marked on the back of the part with a dimple. The simplest and cheapest method to making the rivet is to punch the dimple with a sharp object tapped with a small hammer. For some reason I've always found a blunted screw to be better than anything else for this job.



The little Barclay is essentially a couple of boxes (cab and bonnet) fitted to the footplate. In unpainted form you can clearly see the white metal parts which have been glued on. The window framing has been soldered this time but I'd probably have made a neater job if I'd used glue!

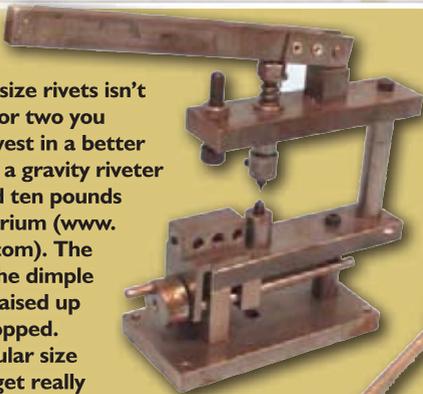


TIP 11

When fixing parts the first stage is to tack them together with a small blob of solder. If they are in the right place then solder properly inside the join. If not, melt the tack and try again. Using tiny amounts of solder makes this process easy and you can adjust things until you are happy. Many will tack an entire kit together and then go back to redo the joints as strongly as possible.



While the screw might be cheap, making consistent size rivets isn't easy, so after a kit or two you might decide to invest in a better tool. In the front is a gravity riveter which costs around ten pounds from Eileens Emporium (www.eileensemporium.com). The point is placed in the dimple and the weight is raised up the thread and dropped. This gives nice regular size bumps. Once you get really keen then the proper tool is seen behind. Be prepared to hand over the thick end of a hundred pounds for it though as it's a Rolls Royce piece of equipment...



TIP 10

TIP 12

If possible, all joints should be made inside the model where they aren't visible. It's generally easier as you don't have to clean up the solder afterwards. Sometimes this can take a little bit of planning but it's always easier to do this rather than uncover detail you've managed to cover up.



TIP 13

When I said you can't use glue, there are times when this is wrong. Sometimes parts will be made up by overlaying one etched part on another. While you can solder, it can be difficult to do this cleanly and so superglue is a better bet. Don't try and solder nearby after glueing though as the fumes given off from the glue will include cyanide!

TARPAULIN WAGONS



Smiths tarpaulins come in a wide variety of liveries to cater for modellers interested in all prototypes through the ages. In 4mm scale, the BR version is around 82 by 57mm and made of grey paper printed in white. Straight out of the packet they are a bit clean for my taste but we can soon fix this.

You might have noticed that it rains in the UK occasionally and when it does we cover ourselves with waterproof clothes to avoid getting soaked. Faced with the same problem, the railways have, since the earliest days, chosen to cover up items travelling in open merchandise wagons with nice waterproof tarpaulins.

Take a look at a photo of any goods yard and other than coal, you'll see very few actual wagon loads, but there are an awful lot of mysterious lumps covered with grey tarpaulins. Unlike models, real railways tried their best not to ship empty wagons around the country as it cost them money. In fact the quickest way to add a bit of variety and realism to a rake of model wagons is to cover them up. Any load that could be damaged by the weather would be 'sheeted' so curvaceous loads of hay or straw would

disappear under tarpaulins that would appear a bit like an overstuffed cushion. Rather firmer would be sack loads where part of the reason for a sheet would be to restrain the load.

Like all things railway, wagon loading was governed by strict instructions which means there are plenty of photos clearly showing tarpaulins in use. However these are often specially posed so it's better to look at trains on the move for inspiration. Not that any of us need an excuse to study pictures of trains of course...

Tarpaulins weren't considered disposable items. Each would be lettered to show which company it belonged to and there would also be a unique number printed on it. That would be recorded by the goods clerk and the cost of hiring the sheet would be charged to the customer.

Modelling tarpaulins is strictly a DIY task. There have been a couple of attempts in

RTR form but by and large these have been unsuccessful as the making of a realistic tarpaulin seems to be beyond current manufacturing technology. Don't worry though, it's easy to do; Smiths model tarpaulins, available from many suppliers, have been around as long as I can remember and for just under four pounds you get a little packet containing five sheets. If that's too rich for you then some good quality grey paper will work reasonably well. In BR days the sheets tended to look a bit the worse for wear and so if you dust the model version with weathering powders, the lack of printing won't be immediately obvious.

As well as making your trains look more interesting, covering a fake load is a handy way of providing a hiding place for a bit of extra weight in a wagon that has turned out lighter than expected. The tarpaulin is also handy for covering up that less than perfect



STEP 1

A Cooper Craft GWR 7-plank open wagon is the candidate I've chosen for covering. In real life the tarpaulin would be supported by a metal rail called a sheet rail, since this will be hidden I replaced it with a piece of 1mm plasticard as this is stronger than wire. Paint the wagon before sheeting as working up to the edges of the paper sheet will be tricky at best.

STEP 2

To give the tarpaulin a bit of wear I start by screwing it up and then smoothing it out again. In real life they were folded so putting some creases in by doing this isn't a bad idea either. Some thread is glued to the back corners with PVA.

STEP 3

Fold the sheet along its length to establish the centre and then glue it to the sides of the wagon with some all purpose glue. Let this dry before moving on to the next stage. Be careful with the glue as it's important to avoid it splurging out of the sides.



This stage is easier if you are good at wrapping Christmas presents. At each end you have to fold the sheet in and tie the 'ropes' around the buffers. Since the tarpaulin isn't big enough to cover the end supports for the sheet rail on this model, I used a couple of bits of wire tucked up inside the cover to represent the rail itself. A dose of weathering powders and this wagon is ready for the layout.

STEP 4



It's not just wagons supplied with sheet rails that are covered. Anything that could be damaged by the weather was treated in this way, so you can also cover open merchandise (not coal or ore) wagons. Before sheeting the wagon it's a good idea to put some sort of lump in the load area. Polystyrene is a good bet for this or bits of balsa wood.



Smiths also make tarpaulins in 3mm scale and here I've used one to partially cover some lengths of wood. These are made from cut down coffee stirrers and stick over the end of the wagon very slightly. In the smaller scale I didn't worry about ropes as no one will notice unless I tell them.



Tarpaulins were transported between stations by loading them into handy empty wagons. If you need a bit more weight in a model, wrapping a bit of lead sheet in one can be very handy. It wasn't unusual to see several sheets being transported in this way.



Sometimes a van with a leaky roof would be covered so it could complete its journey without unloading. They wouldn't run for very long in this state – a quick trip to the repair shops would be in order. It makes a nice change in a rake of vans though. For extra variety, you can also sheet cattle wagons that have been pressed into service as vans during the harvest season when extra carrying capacity would be needed at short notice.

Long

Low

The idea of building a long wheelbase open wagon as a Parker's Guide has been kicking around for a while, but I've been looking for something suitable for the workbench. To date, most of the models arrive in bags marked 'Parkside Dundas' but there are plenty of other manufacturers that we ought to look at.

Chivers Finelines have been around for years but due to a few problems, the supply of kits has been a little erratic recently. These are now resolved which is good news for me as I've built quite a few examples of their 'On30' rolling stock for a future American narrow gauge project. Thus when I saw this kit hanging on D&E Videos stand it seemed time to try some of their 4mm range.

The moulding is actually carried out by Parkside but the design of the model is subtly different from their kits. The parts are supplied in a grey plastic that seems less brittle, especially in the underframe area, than other kits for example. Detail is excellent and the parts seem to fit as well as you would expect. I'm certainly very happy with the finished wagon and it fell together in an evening easily enough. Technically this is a multi-media kit as whitemetal buffers and



etched brass coupling hooks are included in the package.

Best of all, if your stock uses modern tension lock couplings, the designer has included a couple of handy blocks into which clip the tails of Bachmann small couplings. These are available as spares from many suppliers and it's always handy to have a few sets knocking around in case any get damaged while operating. Other makes can be accommodated by inverting the block – with this model there's no messing around sticking bits of plasticard together to fit a coupling. I'm not sure if it's the first time a kit designer has really thought through mounting couplings in this way, but it's certainly the best I've come across so far.

The prototype is the 27ft long LMS 'Long Low' built in 1942 to diagram 2069. Enthusiasts will know that there were several variants, originally with wooden sides but in later days (Diag. 2083) these were steel.

Livery seems to have been unpainted wood and then bauxite in LMS days. BR painted them grey with black patches under the word 'Plate' and numbers. Photos show that the position of these varied a bit as did the quality

REFERENCES

An Illustrated History of LMS Wagons Volume 1
by RJ Essery

of the main body colour. An unpainted and tatty finish seemed to be the norm as far as I can tell. These wagons lived hard lives at the less than glamorous end of the railway empire.

Unlike other kits featured, the builder has to supply wheels and bearings, couplings and transfers. I used Romford wheels I had to hand, but Hornby wheels are cheaper and will work just as well. You'll still need bearings which are best bought in packets of 20. Not because you'll need that many, it's just that when one falls onto the carpet you'll find the game of locating it again loses its appeal pretty quickly.

Apart from a sharp knife and a 2mm drill bit, no special tools are needed to building the model. To show the gaps on the top edge at the end of the side doors I made use of an X-acto saw, but you could just nick the plastic with the knife. Making sure the edges of doors and flaps are continuous is one of the small but important improvements that can be made to many kits and RTR models.

For decent running, a wagon must sit flat on the track. You can check this by sitting the model on a flat surface such as a piece of

glass, or in my case an old bathroom mirror. This conveniently comes with a plastic frame to protect the glass and stop free-running models rolling off the end!

With care there ought to be no need to alter a model to achieve a flat chassis, but we all know things can go wrong. It sounds crude, but holding the model by its buffer beams and twisting it along its length usually sorts things out. Do it gently though or you'll reduce your work to its component parts again.

To finish my model I've loaded it with some sheets of steel. Since I've never actually worked anywhere where steel was delivered in this way, I had to make a guess that 0.5mm, or an inch and a half thick in real life, would look about right. Nearly 4cm is probably a bit on the thick side, but did the recipient roll it to thickness or use it as is? If I wanted to go thinner, brass sheet would probably work better than plastic and might even add a little useful weight to the vehicle.

Another question is how rusty should the load be? Presumably the steel left the works unpainted, but those I've seen, they store the stuff outside so it would oxidise before being loaded into the wagon. If anyone can write in and shine some light on these questions then I'm sure everyone would appreciate it.

SUPPLIER

D & E Videos / DC Kits,

111 Norwood Crescent,
Stanningley, Leeds,
West Yorkshire, LS28 6NG

www.dckits-devideos.co.uk

RC463 00 BR (LMS) Long Low Wagon dia 2069 - £6.13

Parkside Dundas

www.parksideunddas.co.uk

I2mm 3 Hole Disc '00' (pair of axles including bearings) - £2.05

The kit is moulded in grey plastic and includes whitemetal buffers, etched coupling hooks and a bit of wire (the last three are in the little rolled up plastic bag). Wheels and bearings must be supplied by the builder. I used Romfords and Gibson bearings.



STEP 1

My kit had a bit of flash around the middle of the sides. Nothing a sharp knife couldn't deal with quickly, but be careful to only cut off waste and not parts of the model such as the lugs projecting down.



STEP 2



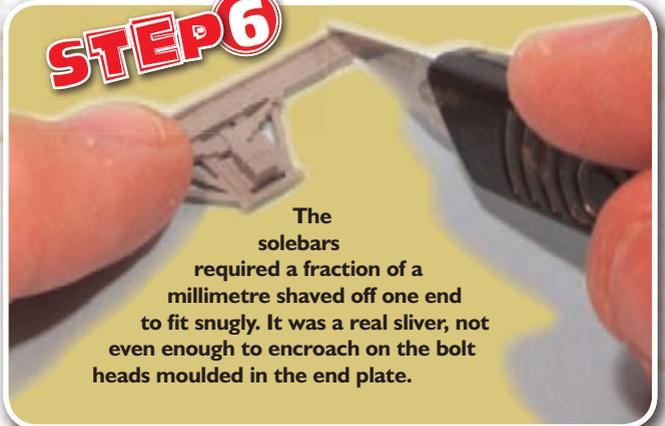
The gaps at the top of the side doors aren't moulded so I added them using an X-acto saw.

STEP 3



The saw cuts are then cleaned up with a knife. This only takes a few moments but adds a lot to the look of the finished model.

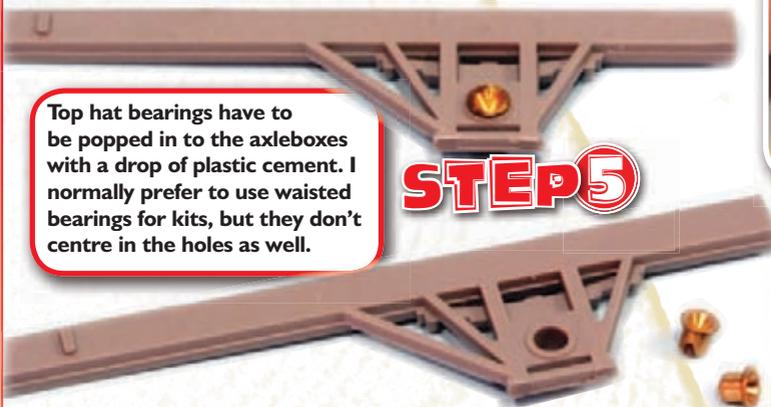
STEP 6



The solebars required a fraction of a millimetre shaved off one end to fit snugly. It was a real sliver, not even enough to encroach on the bolt heads moulded in the end plate.

Top hat bearings have to be popped in to the axleboxes with a drop of plastic cement. I normally prefer to use waisted bearings for kits, but they don't centre in the holes as well.

STEP 5



STEP 9

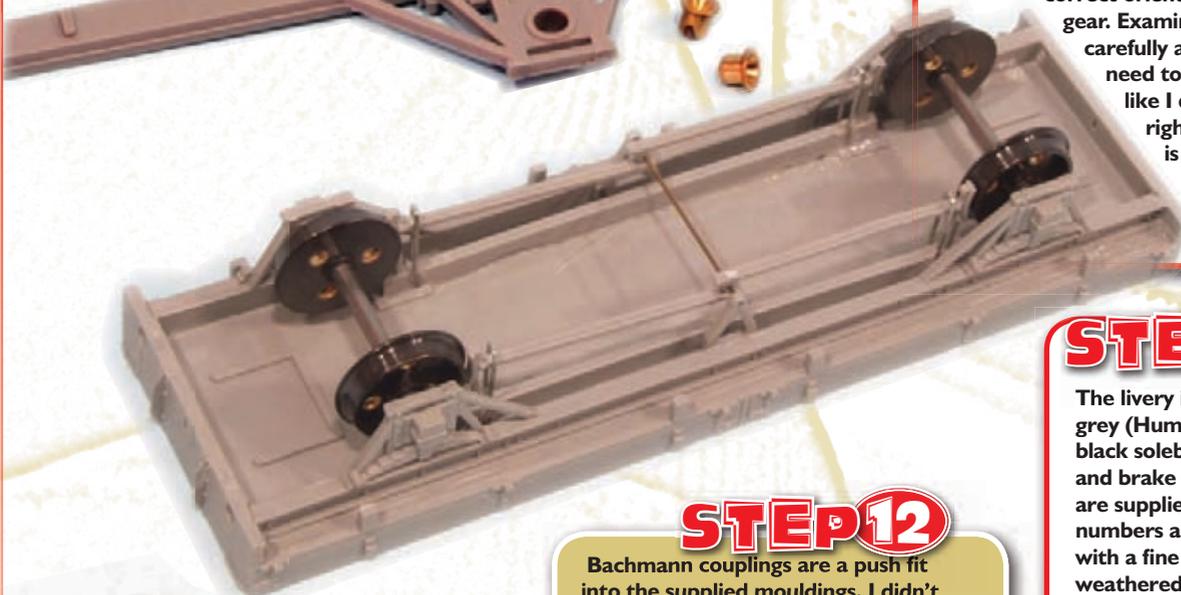
The instructions are very clear about the correct orientation of the brake gear. Examine the diagram carefully and you won't need to remove one side like I did to get things right. The cross-shaft is made of the little bit of wire in the kit superglued in place.

STEP 12

Bachmann couplings are a push fit into the supplied mouldings. I didn't even need to glue them in place, handy as they should be removed for painting. While the wagon was on its back, a strip of lead flashing was glued underneath to give it some weight.

STEP 13

The livery is simple enough, grey (Humbrol 64) with black solebars, axleboxes and brake gear. No transfers are supplied so I painted the numbers and word 'Plate' with a fine brush. Once weathered they will look good enough and save a few quid. Inside the unpainted wood is represented with dark brown since the floor would get oily and dirty pretty quickly in service.



STEP 4

The sides fit neatly around the floor. Check this is flat before starting and keep checking as construction continues. If this gets wobbly then the wagon won't run properly.

The solebars were fitted and wheels trapped in place. Then the model was placed on an old mirror to check it was flat. At this point gently twisting the thing will be enough to sort any problems.

STEP 7

STEP 8

Moulded safety loops on the brake gear are okay but replacing them with staples bent to shape looks better and isn't difficult to do.

STEP 10

Open out the buffer beam holes with a 2mm drill and superglue the castings in. Likewise the coupling hooks, the slot needs to be opening out a bit by poking a knife blade through it.

The brake levers have to be curved slightly with gentle tweaking between warm fingers. Again, follow the diagram so that should a 4mm scale shunter push the lever down, the brakes would clasp the wheel and not pull away from it.

STEP 11

STEP 14

A load of 0.5mm thick plasticard rectangles represents the steel sheets. As far as I can tell, no attempt was made to restrain these.

Presumably the metal was so heavy it didn't move much in transit. A coat of Humbrol Metalcote followed by some weathering powders made plastic look like steel.

Ransomes Rapier 6 ton

If you take a look through old photos of railways, the fixed yard crane is a common feature of most country stations. Normally found on a short platform outside the goods shed it was a popular subject for photographers. Larger goods sheds would be home to at least one inside the building. While essential for the transfer of loads between wagons or to a road vehicle, they were inflexible. If you wanted to unload then the wagon had to be brought to the crane meaning endless work for shunting engines. Little wonder then that the railway companies started to look for something to improve the situation.

In dockyards of course the enormous cranes were mounted on rails but this was far too expensive for less busy locations where the first improvements were to mount yard cranes on railway wagons.

This way you could at least

position the lifting equipment near where you wanted it. In model railway terms we managed to do this in reverse when the Triang small crane found itself mounted on a plastic block years after it had been seen in train sets on a wagon. The problem with the rail wagons was that as the jib slewed (turned) the wagon could tip over unless extending legs were employed to hold things up. Setting these up partly defeated any gains in portability.

The ideal solution was obviously to move the crane on road wheels. Various attempts to do this using man power were tried but with developments in the internal combustion engine, you could bring some serious power to bear on the job. This started to happen in the mid 1930s and accelerated thereafter.

Needless to say, while I know all this, Melbridge Dock (HM March 2009) has always been a bit light on road based craneage. I mounted parts from an Airfix Recovery set on a set of wheels but photos of the prototypes show many different designs and lots of them. The trouble is these are complicated beasts, so I needed to build a kit, which is why this Parker's Guide covers the Langley Miniature Models Ransomes Rapier 6 ton mobile crane.

Those familiar with the

Langley sales stand at exhibitions will know it to be home to dozens of whitemetal road vehicles in 2, 4 and 7mm scales. As well as complete kits you can buy many of the useful parts as spares. My spares boxes contain quite a few goodies from their 'pick'n'mix' section.

I've built a few kits from this manufacturer and generally find the quality to be very high, not something that can be said about all whitemetal road vehicle kits. While the prices are quite a bit higher than those for die-cast lorries and vans, you can have those rarities that bring some individuality to your layout. Sometimes less is more and one interesting and correct model is worth a dozen run of the mill ones.

This is a complicated kit with loads of detail, but taken carefully it goes together very well and really looks the part. As with the wagon (pages 105-107) it pays to let the glue harden after each stage so spread the pleasure of building it over several evenings. This isn't a cheap model so you might as well enjoy the building process.

A few notes on assembly – although the excellent instructions suggest assembly using 2-part epoxy such



on Mobile Yard Crane

as Araldite, I find this results in lumpy joints as the glue doesn't run into the gaps and is so thick you can't clean things up properly. For this type of job I prefer superglue.

For many years I've used Zap-a-Gap glue which as well as sticking the parts together, as the name suggests, fills small gaps. Three versions are available, Pink which is thin and doesn't do much filling. Green, with medium abilities in both and Yellow which is thick and will deal with veritable canyons. These glues are available from model shops. The bottle in the photo has lasted me for at least a year and I use a lot of it, so for a fiver it's pretty economical.

When I talk to other modellers I find that many are scared of superglue. Common complaints are that it is uncontrollable,

sets too fast and probably won't last. The first is easily dealt with. Never apply glue to the model

direct from the bottle. Always place it on some scrap plastic or metal and then pick drops up with a pin to place on the joint. Then put another drop or two on the join when the parts are together and let capillary action draw the adhesive in.

As far as speed goes, this seems to be a bit of a myth. Yes, superglue dries fast but it's rarely instant. Sometimes a 'kicker' is required to set the joint faster. Zap sell a pump bottle of foul smelling liquid which when sprayed on the joint really does make for an instant joint.

Finally, as far as the lifespan of joints are concerned, I have at least one model locomotive that is fifteen years old and still as good as it was when I built it. Even if a joint does fail, you can normally re-glue it as the break will be clean. Sometimes you don't even need to touch the paint up.

Glue aside, no special tools are required for this model. The castings are clean

SUPPLIER

Langley Models

166 Three Bridges Road,
Crowley, Sussex, RH10 1LE

www.langleymodels.co.uk

Kit Ref: RW14

**Ransomes Rapier 6 ton
Mobile Yard Crane -
£29.00**

enough to need little more than fettling from bits of emery (try the stick sold for manicuring fingernails) or a small file. Some of the parts are attached to sprues but can be cut away with a sharp knife just like a plastic kit. Any residue is best removed with a fairly coarse file as whitemetal will clog a very fine one.

When finished the model ideally needs to be primed to

help the paint adhere properly to the metal. I've always used spray cans intended for use on cars but it might be easier to find the same thing from a branch of Games Workshop. Wargamers have to prime their metal figures which will then receive far more handling than our models after all.

The kit instructions suggest that the model should be painted green but I'm sure I've seen more photos showing a dirty brown colour. Not that it matters, equipment like this would get a coat of whatever was around at the time occasionally. In later days some concession would be made to safety by using yellow but even this would become filthy pretty quickly.

The kit arrives in a bubble pack containing lots of whitmetal parts and a card with string on it. There are also two pages of instructions including an excellent exploded diagram and a colour photo of a finished model.

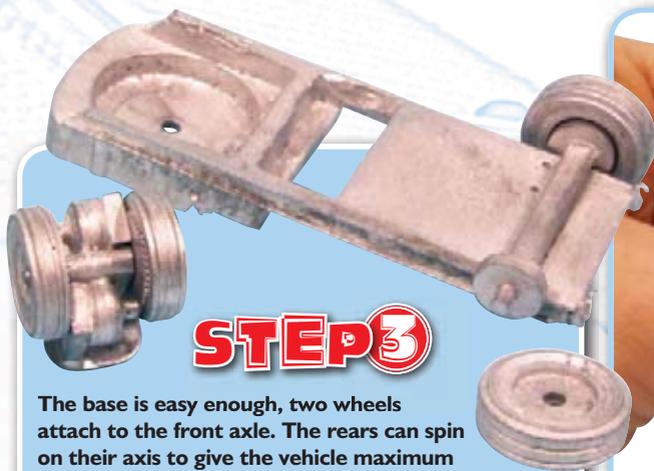
STEP 1



STEP 2



The parts are nice and cleanly cast, but there are a lot of them! This selection shows just the smaller ones. One of the problems is identifying what each one is, so this isn't a 'shake the box' model. Sort yourself out a little pot to store the bits in so they don't get lost on the workbench.



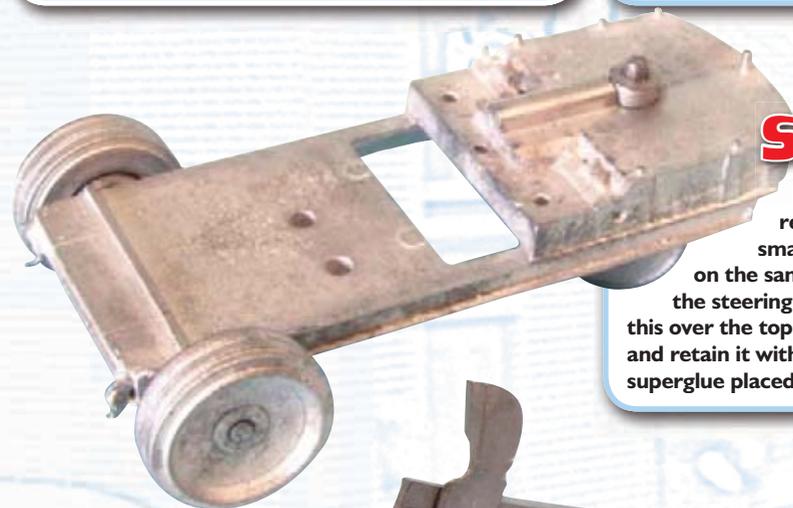
STEP 3

The base is easy enough, two wheels attach to the front axle. The rears can spin on their axis to give the vehicle maximum manoeuvrability and I decided that it would be sensible to allow them to turn on the finished model.



STEP 4

Thinking that a coat of paint could easily gum up the steering pivot I protected it with some Petroleum Jelly, handily available in pocket sized tins just right for modellers and those walking around in the cold weather.

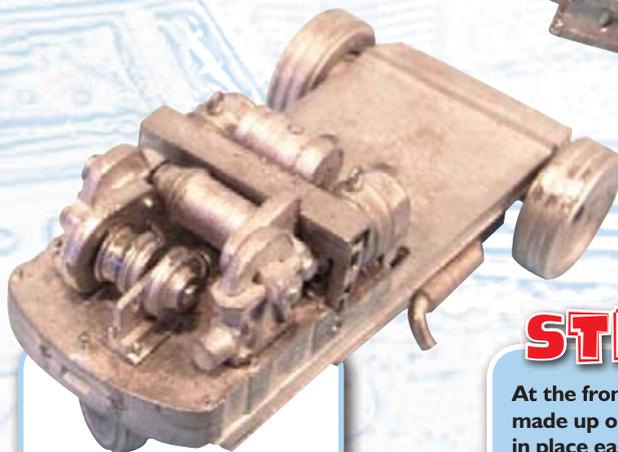


STEP 5

The pivot is retained by a small collar found on the same sprue as the steering wheel. Force this over the top of the pivot and retain it with a tiny drop of superglue placed on the top.

STEP 6

Two electric motors are fitted followed by brake shoes around the collars at the end. These must be vertical and the instructions suggest that you may need to trim the shoes a little. You can cut them off as they get in the way and can't be seen on the finished model. The rear jib support clips in place and should swing by the brakes, if it doesn't trim the brakes some more.



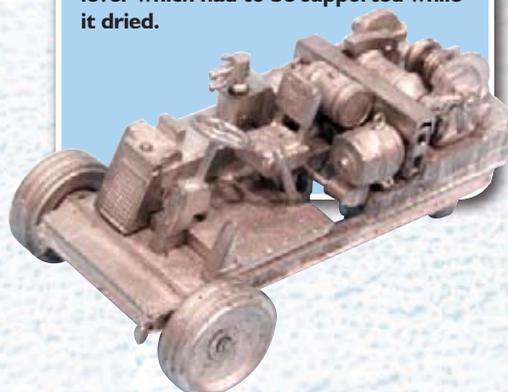
STEP 7

The winding mechanisms attach at the back. The drums were drilled to accept a dressmaking pin as I didn't fancy relying on the whitmetal axles. As you can see the brakes are hidden by the cover and fuel tank.



STEP 8

At the front, the driving position is made up on its floor. All the parts glue in place easily except for the handbrake lever which had to be supported while it dried.



STEP 9

The supports are now fitted and I replaced the pivot at the top with some plastic rod as it's important that they line up. Don't glue this in place of course.

The jib construction starts by fitting the front cross member and pivot box. The latter doesn't fit very well so I attached the front and back and then adjusted the base with a file to fit. The jib sleeve block and accessory pulley were treated to the petroleum jelly to keep them free.

STEP 10



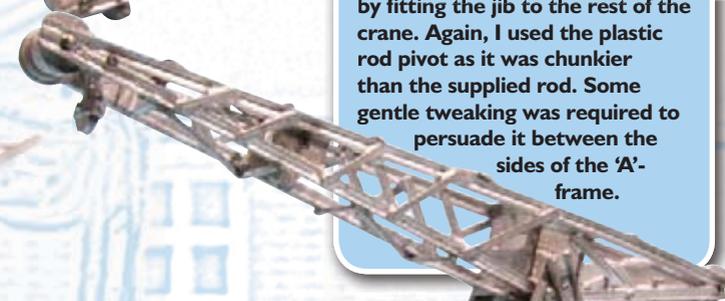
After leaving the glue to dry fully the other side is attached. Check everything is straight and true. The material is soft and easily worked with finger pressure.

STEP 11



STEP 13

Whitemetal construction finishes by fitting the jib to the rest of the crane. Again, I used the plastic rod pivot as it was chunkier than the supplied rod. Some gentle tweaking was required to persuade it between the sides of the 'A'-frame.



STEP 12

On the top and bottom there are some cross members to be fitted. These are supplied fitted with runners which have to be cut off with a sharp knife and then are glued in place.

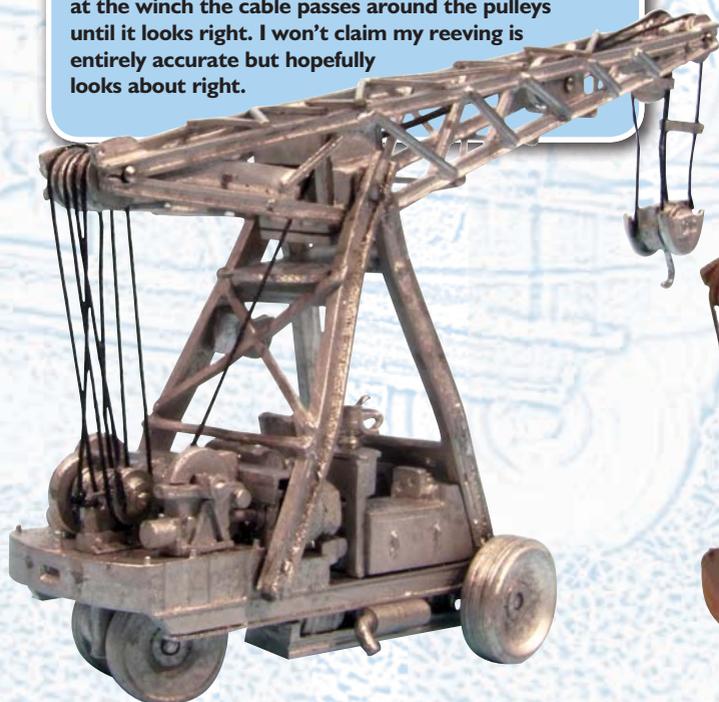


STEP 14

'Reeving', or fitting the ropes begins with the lifting gear. To be honest I found this difficult as the string is flexible but not malleable enough to pull tight under the weight of the hook. By cutting it into sections and hardening the string by rubbing superglue on it, I managed to get something that looks okay.

STEP 15

At the back, the cabling is a lot easier. Starting at the winch the cable passes around the pulleys until it looks right. I won't claim my reeving is entirely accurate but hopefully looks about right.



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Tunnel Mouth

Peco Double Tunnel Mouth and Walls - £4.75

If your track emerges from a hillside, you'll need a tunnel mouth. Peco produce a couple of nicely moulded one-piece stone examples for both single and double track lines that have been in the range for many, many years.

Compared to modern resin models they don't compare well – the moulding is very nice but the colours are awful. A slight shine screams 'plastic' rather than stone too. Mind you, they are very easy to use, light, strong and slightly flexible. With a couple of tins of enamel, some sponge and a bit of talcum powder, we can fix the problems and a really nice model is the result.

Aside from the colour, with this project, every step is intended to introduce surface texture. Stone is a porous material, something you can see even from a distance. Much of what we do as model makers involves hiding the material we are working with since it's rare we are using the same one as the prototype. I suppose you could chisel your tunnel mouths out of real stone, but this is a lot easier!



The tunnel mouth bedded into the layout



STEP 1: As bought, the tunnel mouth has an interesting colouring, grey with green streaks and a slight sheen.



STEP 2: The work starts with a spray of car body primer from an aerosol.



STEP 3: Since the tunnel is intended for a limestone area, the base colour is Humbrol 'Light Stone', number 121. Brush painting is fine for this.



STEP 4: 'Dark Stone', Humbrol 187 is applied to the surface of the stones using a piece of sponge rescued from some packing. Put a bit of paint on some scrap plastic and dab the sponge into it. Then dab the paint onto the stonework.



STEP 5: Leave the paint for about ten minutes so it has dried a little then pick up some talcum powder on a wide brush. Dab this everywhere on the model. It will dry the paint instantly and ensure everything has a nice matt finish. Any cheap talc will do for this job, search the back of the bathroom cupboards.



STEP 6: With the excess talc brushed off, the tunnel mouth is ready to set into the layout.

SCRATCH BUILDING

scratch

As I write, the television is full of politicians telling us we are in an age of austerity. Magazine letters pages find plenty of people bemoaning the cost of their hobby. With that in mind this project is by far the cheapest I've done so far, with the total cost of the materials used less than a pound!

As a youth, pocket money wasn't plentiful and so if I wanted buildings for my train set, I was forced to make them myself.

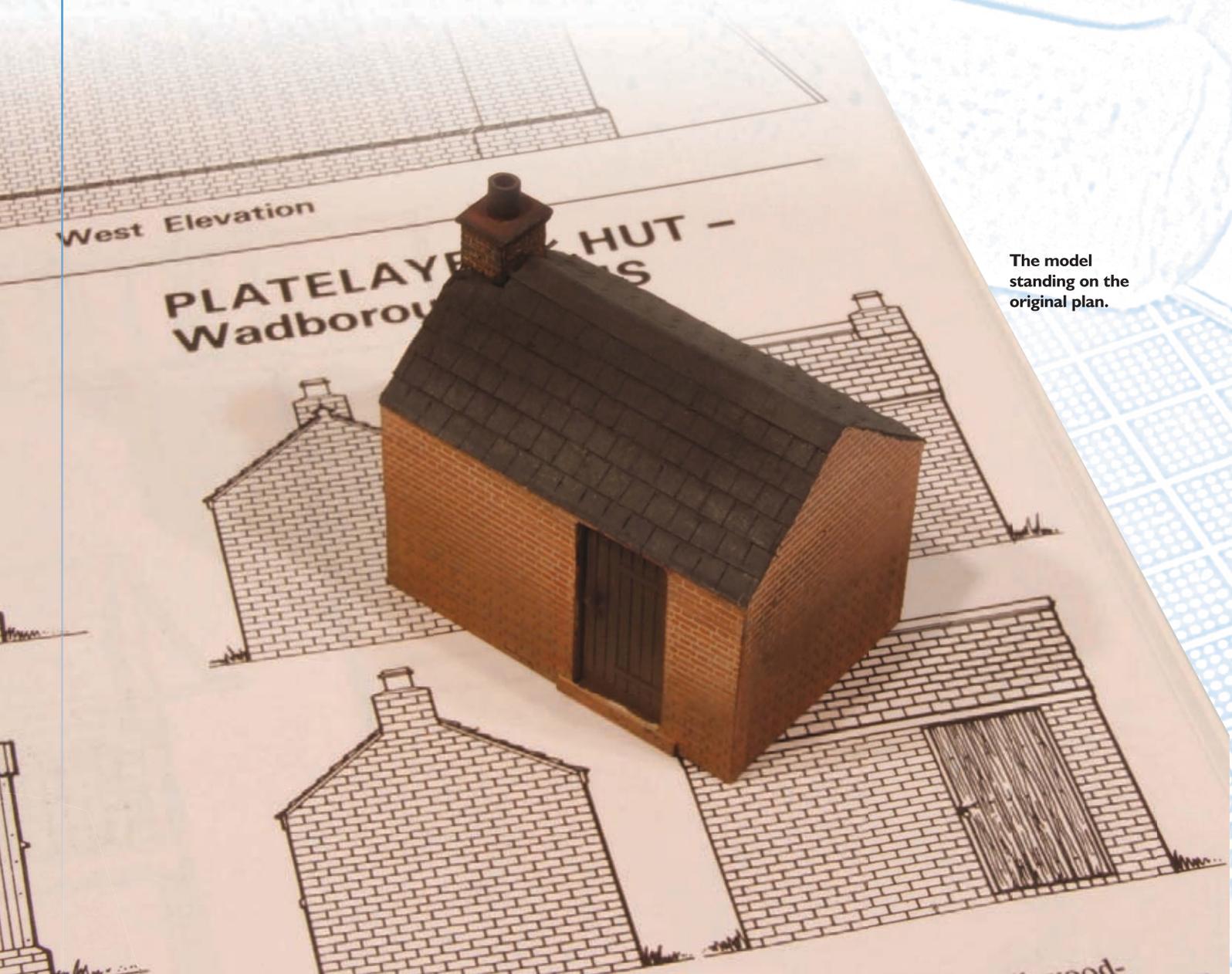
My collection included one or two Superquick models and because of these, cardboard was the natural material to work in. Plasticard was far too exotic and expensive for me anyway. I started off with old cornflake packets, while these yielded excellent material the results tended to be a bit flimsy. It did get me started on thinking how to turn a flat sheet of raw material into a three dimensional model, something that has always been useful.

A few years down the line and I discovered

that art shops stock a high quality card sheet under the trade name 'Daler Board'. It's still widely available and for around a fiver you can buy an A1 (119cm by 84cm) sized sheet of 2mm thick material. One side is faced with a colour or even metallic finish. Real cheapskates can try and beg some offcuts from picture framers as it's the same stuff they use for mounting photographs, but to be honest I can't be bothered as a single sheet will do me an entire layout. With a scalpel or other sharp knife it cuts cleanly but do keep your fingers away from the sharp side of the blade.

The young Phil Parker covered his buildings in Superquick brick paper because it was cheap yet looked very good. Nowadays I prefer walls to have a bit of texture so employ Slater's embossed plasticard sheets which cost a bit more but you still get several huts from one A4 sheet. Everything else comes from scraps of microstrip and offcuts of plain plasticard.

No special tools are required. You need a sharp knife and a steel rule to keep the cutting



The model standing on the original plan.

straight. A self healing rubbery cutting mat is a useful investment as it stops the card sliding around.

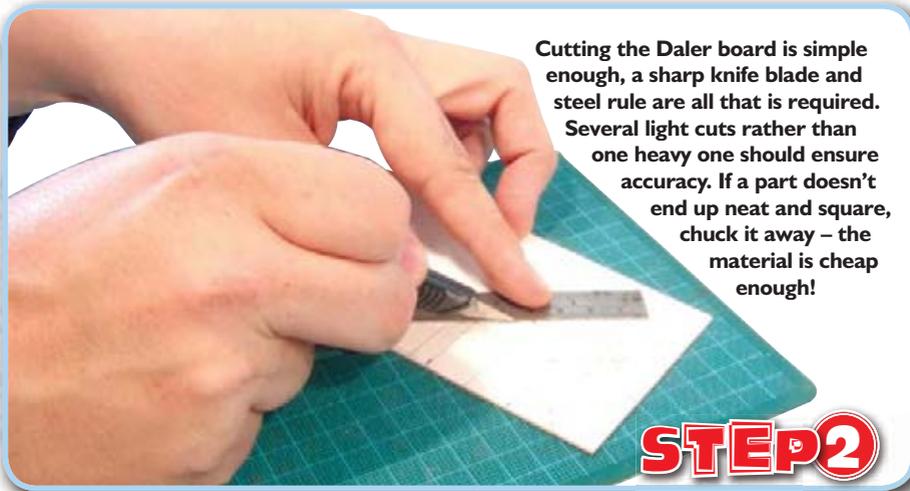
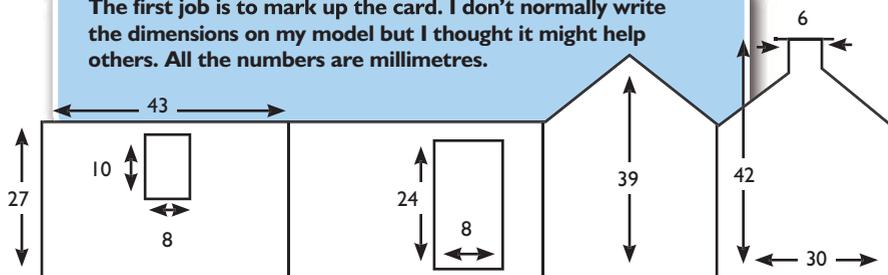
The prototype I've chosen is a platelayers' hut from Wadborough in Worcestershire. My plan is taken from an old book from Peco Publications entitled *Ericplans GWR & LMS Buildings and Structures*. It's out of print now but still turns up on second hand stalls. These buildings tended to vary quite a bit in size though so don't get too hung up on perfect fidelity. I've provided some dimensions but to be honest as long as the door is about the right size (measure one at home to work this out) then the resulting model will look fine. If you have a photo you want to follow then try counting the bricks to get an idea of size.

You are probably thinking that you don't need a platelayers hut, you need a station or a good shed. Well this isn't a problem as the techniques used making the hut work just as well for larger structures. I think this model took me about three hours on and off. A bigger building just takes longer.

Apart from the fun of building something from scratch, doing this sort of thing means your layout will look a bit different from everyone else's. After a while you will discover that the world is your oyster, see a building you like the look of and a few hours with some card and plastic and a miniature version can be part of your layout.

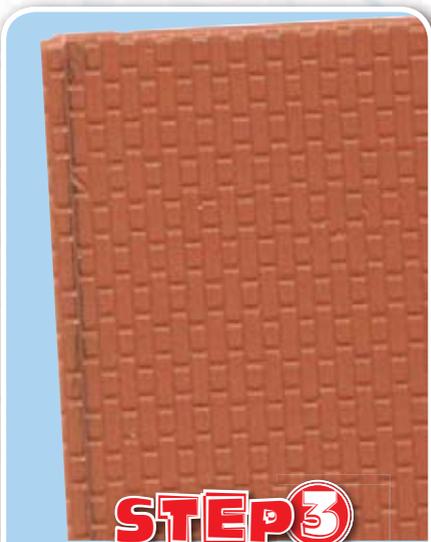
STEP 1

The first job is to mark up the card. I don't normally write the dimensions on my model but I thought it might help others. All the numbers are millimetres.



Cutting the Daler board is simple enough, a sharp knife blade and steel rule are all that is required. Several light cuts rather than one heavy one should ensure accuracy. If a part doesn't end up neat and square, chuck it away – the material is cheap enough!

STEP 2



STEP 3

Staters Plasticard is available in several finishes. It tends to be fairly rough cut so I like to square off the bottom edge in line with the mortar joint. This makes lining up the cardboard parts in the next step a lot easier. A pencil line helps as a guide.



For me, Bostick Solvent free glue is the best thing to stick card to the plastic. Smear it thinly and then put some weight on the parts while they dry. Old model railway magazines work well for this if you have some handy! Models built this way have stayed assembled for over ten years, so it seems okay.

STEP 4

STEP 5

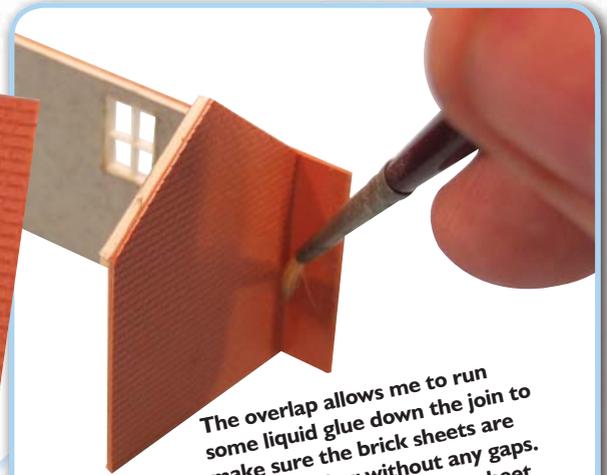
Detailing is best done while the walls are 'in the flat'. The doorway has been cut out, then a larger piece stuck across the back. Finally a frame from plastic strip and door scribed from an off-cut of plastic sheet are stuck in place. The handle is a Peco track pin.





The window is made from more plastic strip although you could use one of the ready made items available from lots of suppliers, just make sure the hole in the wall is the right size. The cill is a strip of the brick plastic stuck in place with some liquid glue.

STEP 6



The overlap allows me to run some liquid glue down the joint to make sure the brick sheets are stuck together without any gaps. Once this is dry I trim the sheet back leaving a nice neat join.

STEP 9

At one end of the hut there is a chimney which is made from a few layers of card wrapped in the brick sheet.

STEP 7

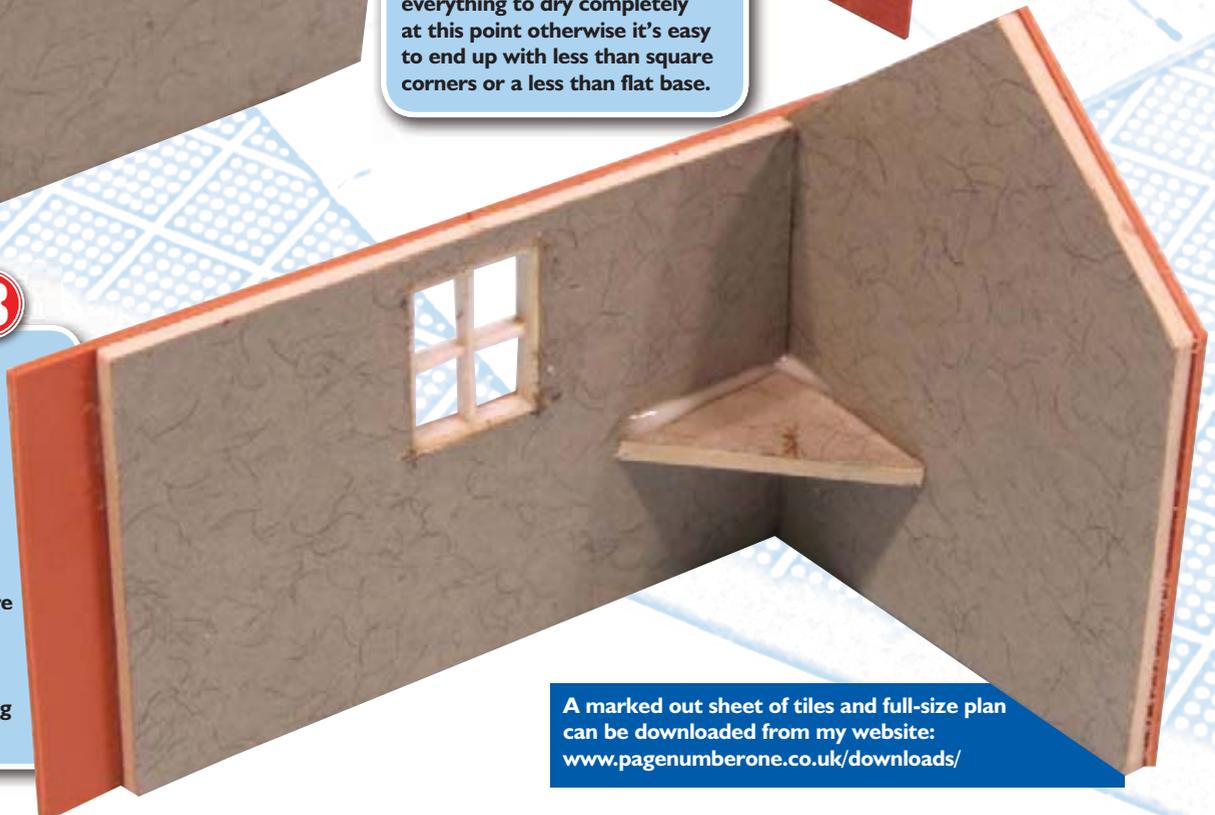


STEP 10

With the walls together the hut is starting to take shape. Leave everything to dry completely at this point otherwise it's easy to end up with less than square corners or a less than flat base.

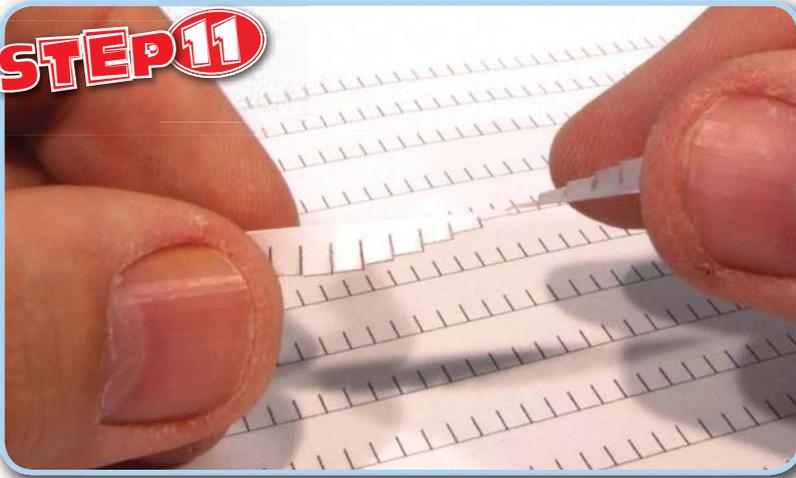
STEP 8

Detailing complete, the sides are stuck together with the Bostick glue. Notice that when cutting the hut back from the brick sheet I left an overlap at each end. The corners are braced with more bits of card. I think the one shown is a leftover from cutting the door out.



A marked out sheet of tiles and full-size plan can be downloaded from my website:
www.pagenumberone.co.uk/downloads/

STEP 11



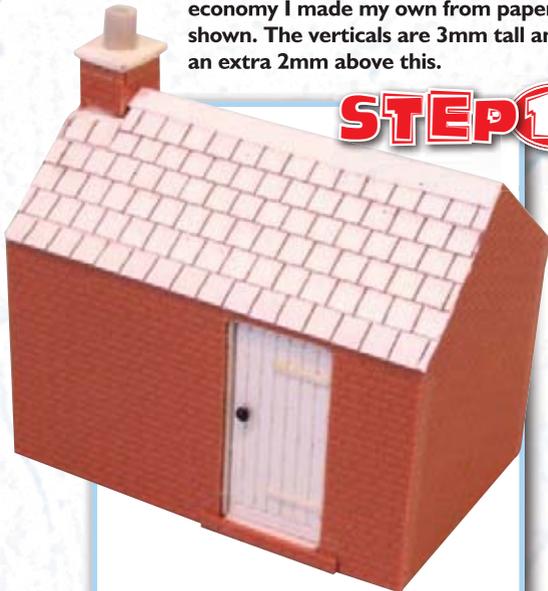
You could use ready made tiles for the roof but in the spirit of economy I made my own from paper. The strips are made as shown. The verticals are 3mm tall and the slates 3mm wide. Leave an extra 2mm above this.

STEP 12



The roof is filled in with more card and then the strips of slates carefully stuck to it. Make sure the lines are straight – drawing some guides isn't a bad idea especially if you are working on a larger building.

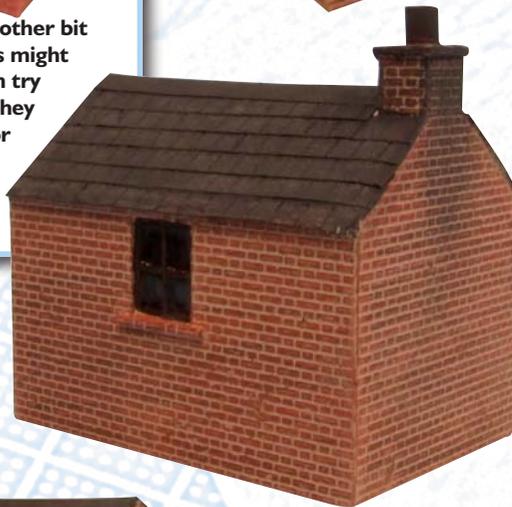
STEP 13



Along the ridge I folded another bit of paper but individual tiles might look better. You could even try some fancy tiles although they wouldn't be appropriate for a humble hut unless it's in the garden of a stately home.

STEP 14

Brick painting starts with a mortar colour, Humbrol 121 in this case, which is left to fully dry. Then the faces are coloured with artists pencils. Terracotta, Venetian Red and Sepia rubbed around gave me a nice warm finish. Don't sharpen the points and the colour will stay where you want it. The end result can have a slight sheen but if this bothers you then a spray of matt varnish sorts this out.



STEP 15

With the roof painted dark grey the end result looks like a nice clean building, just like the ready made ones available from your model shop.

FINISHED



Dirt is courtesy of a dusting of weathering powders. Use a soft brush as a stiff one can remove the pencil colours when used vigorously. Dark brown from the ground upwards and dark grey from the roof down were all I used but you can really go to town if you want.



7mm Scale Wagon

Are you feeling the need for a bit of a change of direction with your modelling? How about a nice new scale? There have been some really exceptional 'O' gauge layouts in *Hornby Magazine*, so how difficult is it to build larger size models?

This project is a Slater's coal wagon. As the parts are supplied largely pre-painted it's just the thing to try if you want to dip your toe in the gauge 'O' waters. I picked a wagon decorated in the livery of Thane coal merchants of Leamington Spa for no better reason than that's where I live. As the range includes lots of local wagon owners, most of us could find a reason other than immediate need as an excuse to have a go. After all, a nicely painted wagon can be a display piece in its own right, or a lovely present for someone who might remember the real thing.

People often use the excuse that their eyesight is getting worse as a reason for a change. Sad to say, this doesn't wash. While the individual parts of an 'O' gauge kit may be bigger, there tend to be more of them. For example the brake gear on a 'OO' wagon will probably be a single moulded part. Here it is made up of three bits which have to be jiggled into position. Those items that can be safely ignored in a small scale are more easily missed when you make things bigger, so I'm afraid the

modelling doesn't get any more eye friendly – go and see an optician instead.

Another consideration is cost. The wagon kit shown is around five times the price of a similar 4mm item and while there is plenty of wagon for your money, filling space with 7mm models is more expensive than using the same area for 'OO' even though you need smaller numbers of them. What you do notice is just how much more presence the finished model has. Being heavier,

'O' gauge wagons roll much better than 'OO' ones as they have a mass and solidity unachievable in smaller scales.

If the 7mm bug bites don't worry. My local model railway club has an 'O' gauge layout because several of us 4mm modellers fancied building a few wagons and perhaps a locomotive. By pooling our resources we were able to stock an entire small shunting

layout. This attracted more people with similar tastes and now the club has a monster roundy-roundy under construction. From little acorns, mighty oaks can grow!



SUPPLIERS

Slater's (Plastikard) Ltd

Temple Road, Matlock Bath, Matlock, DE4 3PG

(01629) 583993

www.slatersplastikard.com

Kit: 7035T - 'WH Thane', coal merchants, Leamington - £34.16

USEFUL READING

The 4mm coal wagon, A step-by-step guide by John Hayes.

Published by Wild Swan

ISBN: 1 874103 48 8

Lots of useful prototype information and photos of all sorts of wagons.



This is what you get for just under 35 pounds of your hard earned cash. The main parts are plastic, and largely pre-painted with body colour and lettering. Metal buffers, couplings and wheels are also included as well as a couple of sheets of instructions.



STEP 2



The sides should be test assembled without glue and the joints checked. The ones between the top of the buffer beam end and bottom corner of the side needed particular attention and gentle trimming with a sharp blade.



Assembly is the same as that of a 4mm scale wagon. A small try square is very handy to keep things accurate. This one came from Eileen's Emporium and just fits between the sides.

STEP 3

The inside of the wagon is devoid of detail so I scribed some planks using a Tamiya Olfa plasticard cutter. On the floor these are at 6mm intervals, on the sides I matched them to the outside lines. A final sanding with some medium grade paper produced a reasonable wood-like surface.

STEP 1



HANDY HINT

While painting the black ironwork, keep a small brush damp with thinners. Then if the paint spills onto the pre-painted areas, you can quickly lift it off with a wipe from this brush.

STEP 4

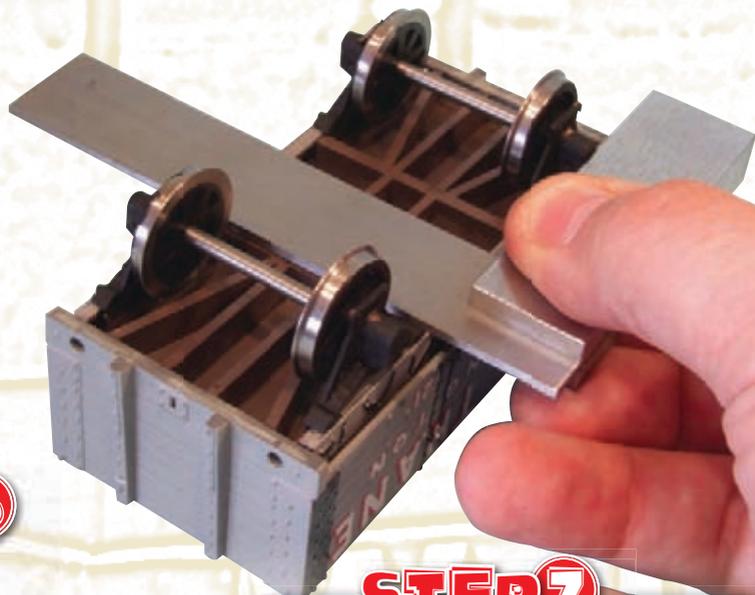
'O' gauge wheels can expect to carry greater loads than 'OO' ones so pinpoint bearings wouldn't be man enough for the job. Instead we get much more prototypical deep top hats that the axle ends poke right in to.





The W-irons are supplied with alternative axle boxes. The instructions tell you which to fit depending on your chosen prototype. The age of the moulds is given away by the amount of flash to be cleaned off. I like to make these parts up and paint them before assembly to avoid getting paint on the supplied solebars.

STEP 5



STEP 7

Fit the second solebar and when it's dry, the W-irons and wheels. Use a square to keep things accurate as the bearings don't like being run wonky. Make sure the wheels spin freely.



Turning the wagon upside down the first job is to fit the substantial and prototypical chassis framing and the first solebar. Fit the W-irons so they are central under the inverted half-moon shapes on the solebar.

STEP 6



STEP 8

Brake gear is certainly more complicated than your normal 4mm kit. The safety loops have to be threaded on to the shoe moulding. This is then glued in place followed by the loops. V-hangers are fitted either side of the solebar and a length of plastic rod passed through these and the brakes. Strictly speaking for a wagon as built, brakes would have been fitted to one side only, but some had a second set added later in life and I think they look better this way so I did both sides.



The brake lever is threaded through the guide and then fitted. Do a dry test of this first as there are no markings showing the position of the guide on the solebar. Superglue works better than plastic cement unless you scrape paint off all the joining surfaces first.

STEP 9

STEP 10

The buffer castings need to be cleaned out with a 1.6mm drill for the top half and a small round file for the bottom. A large pin-vise makes holding round things a lot easier than using fingers alone.

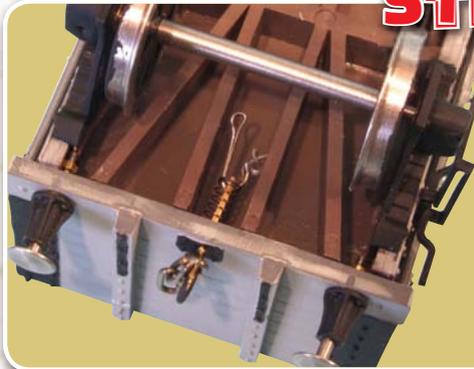


3-link couplings are supplied unassembled. First separate the hooks from each other with some chunky wire cutters. Snip the spring in half and then unbend the links slightly so they can be made into a chain and fitted through the hole nearest the hook – which has to be opened out.

STEP 11



STEP 12



Check the hook's shank goes through the hole in the buffer beam easily so it can slide in and out. Put it in place and fit the spring inside the wagon. Retain this with a split pin through one of the end holes. Bending this makes the job possible, there's not enough space to fit it when straight, alternatively use a bit of fine wire.

Inside the wagon there should be some ironwork coinciding with the outside black lines. Ideally you should use prototype photos as a guide, but not many shots show the inside of empty wagons. Slater's Microstrip works a treat for this. I didn't bother trying to represent bolt heads, but if you fancy it, cubes of plastic will work well.

STEP 13

The Finished Wagon

To finish there are black parts that need painting especially all those little plates on the solebars. The big corner plates should have the corners smoothed so they look like a single bent piece of metal. I haven't weathered the model yet but some dry-brushing of the underframe followed by an overall wash of black would make things look more realistic. Finally a few small lumps of real coal in the inside corners just adds a nice finishing touch.



10203

HISTORY

Designed by Bullied, No. 10203 and her siblings were contemporaries of the more famous LMS twin diesels Nos. 10000 and 10001. The LMS proved to be better at getting their locomotives through works with the first appearing just before nationalisation.

No. 10201 didn't emerge from Ashford works until November 1950 despite being ordered four years earlier. All five were built by English Electric around what was basically the same engine. The Southern engines were set to produce higher speeds but lower tractive effort than the LMS versions in anticipation of the types of traffic, primarily passenger work, they were envisaged being used on.

The LMS went for a Co-Co bogie whereas the Southern added a radial truck at each end giving a 1Co-Co1 layout. The bolsterless bogies were developed from those found on the infamous 'Leader' class steam engine and the basic form continued onto the class 40, 45 and 46 in later years. The body profiles were intended to match the Bulleid coaches in use and have some family resemblance to the same designer's electric locomotives.

Experience with the first two engines led to No. 10203 appearing from Brighton in 1954 with some differences in design and a lighter but more powerful engine.

The three engines originally appeared in black with silver roof and bogies. Around the centre was a polished aluminium belt trim. In 1955 the engines were repainted brunswick green with black and orange lining replacing the trim.

All three engines worked mainly on the West of England and Weymouth routes but could appear on quite a variety of services as part of the testing process. In 1955 the engines left the Southern and joined the



A Replica Railways Class 46 locomotive will donate it's chassis. This one doesn't know what's going to happen to it...

'twins' on London Midland Region where they survived withdrawal in 1963 to be followed by scrapping five years later. Sadly, none of the locomotives is preserved.

The Class 46 and Silver Fox bodies.



THE MODEL

Silver Fox produce an impressive range of unusual diesel kits allowing the discerning modeller to acquire models of classes that are unlikely to trouble the ready to run manufacturers. All the kits feature a resin body intended to be fitted to a propriety chassis making them ideal for the less experienced modeller. Polyester resin is a material commonly employed by small manufacturers and even some modellers as it is simple to mould and yet allows excellent reproduction of detail. Reasonably soft and easy to work



SUPPLIER

Silver Fox Models

1 Marsland Terrace, Stockport, SK1 4PZ

+44(0)161 285 5210

www.silverfoxmodels.co.uk

STEP 1



The Silver Fox kit as it comes out of the box. The main item is the one piece resin body shell. The smaller parts are buffer beams, underframe boxes, cab floor and vacuum formed glazing units. Everything looked nice and clean with only a touch of flash in the windows to be removed. BR crests and number transfers are included. Headcode disks are moulded in with one end showing express passenger and the other through freight.

STEP 2



The Class 46 body is unclipped with the aid of some small screwdrivers stuffed between it and the chassis under the doors and can be discarded. The weight blocks and polystyrene also go from the centre. Cab detail pulls off but don't throw this away. Ideally the bogies will be removed too, you have to unsolder the leads from the side of the motor. I couldn't persuade the powered end to come out so did all the work with this in place.



although if you are going to do a lot of filling or drilling, a dust mask isn't a bad idea as breathing the stuff in isn't good for your long term health.

My model was to be of 10203, the final member of the class. This differed in several areas from its two older sisters – the grilles in the side were larger and there was no front, corridor connection, door. A body shell is available for the earlier locomotives and makes up in exactly the same way as shown here.

In the simplest form, the body can be cleaned up, painted and then mated to the chassis once any modifications to the latter are complete. The result would be a perfectly respectable model. I decided to take things a little further to ensure the model could stand beside the latest RTR on Mike Wild's Bay Street layout without looking like a poor relation.

Only a small toolkit is required for construction. The body needs little more than cleaning up with a small knife and files. Some small drills, pliers and wire cutters are needed for detailing. Chassis work is a touch more involved and you'll need a small saw – a junior hacksaw is OK although a fine bladed X-acto saw would give a neater result.

USEFUL READING

Southern Way Special Issue No 1: 10201-3 on the Southern
by Kevin Robertson

ISBN 978-0-9554110-8-3

www.kevinrobertsonbooks.co.uk

£14.95

STEP 3

Most of the manufacturer's supplied instructions concern themselves with shortening the chassis. 19mm has to be removed from the centre giving a final length of 236mm. Work carefully with the saw and this isn't too bad as the plastic is soft. It doesn't stick very well though so to reunite the ends stick some 2mm plasticard over the join with epoxy resin. Bulldog clips are ideal to clamp things in place and keep everything straight. Once dry make sure the chassis fits into the resin body, if not break the join and adjust things. I only took two goes to get this right but the plastic bridge allows for fiddling if you lop too much out – the results are hidden on the finished model.

STEP 4



Mr Wild specified that on this model he wanted the big side windows to be open. That's fair enough as all the photos shows the loco didn't run with them shut. In fact if you want something a bit different, there are a couple of shots with fitters hanging out the side catching the breeze.

Anyway, to open the sides, drill a series of holes and then push and wiggle a craft knife into each to join them up. The resin is soft enough to make this work. Cut inside the aperture and then carve the material away with a knife once the centre is out.

STEP 5



All the handrails on the body shell are moulded in. Nowadays separate wire items are *de rigueur* so the originals are used as a guide for replacement with bent bits of office staple. The prototype had flat metal handrails rather than the normal round ones so as well as being cheap and easy to work, this material is the ideal shape.

Flatten the ends of each moulded handrail with the knife, then drill 1mm holes using this as a guide. Finally trim off the rest of the moulded lump and then glue the bent staple with a touch of superglue applied from the end of a pin.

On the top I replaced the moulded whistle with something filed from brass rod as I felt the supplied item wasn't as prominent as prototype photos would indicate.



STEP 6

Inside the cab, all the excess staple have to be cut flush. Electronics stores such as Maplin as well as the normal modelling tool suppliers sell some nice flush wire cutters for around a fiver, ideal for this job. This is an important step as the chassis extends up into the body and the staples will be in the way.

STEP 11



If the side windows are to be open then something is needed inside so viewers can't see through. There are some excellent photos of the engine in both the books listed but this all looked a bit complicated. A plasticard box 70 x 10 x 20mm with some scored plastic cylinder heads seemed enough for this as you wouldn't see it properly. Pipes along the top are plastic rod and invisible once the body is on. Oh well, I know they are there. The box is filled with lead to improve adhesion.

STEP 9

The body needs a quick scrub with washing up liquid to remove any mould release left over from manufacturing process along with any greasiness from hands during building. Once fully dry some aerosol car primer provides an excellent basis for paint as well as showing up any fettling that might be required. Don't use too much as the side detail is very fine and could disappear under too heavy a coat.



Again, the evil Mr Wild struck. He insisted that at one end of the loco the original tension lock couplings should be retained but at the other he'd like a fully detailed buffer beam. The simplest way to do this would be to find a Class 45/46 detailing kit which will include all the necessary parts. These aren't that common around our way and I didn't want to spend good money on such a kit to use less than half the parts.

My solution involved the Silver Fox buffer beam and some scrap plastic. All dimensions are by eye but I don't think this looks too bad. The prominent lumps on the front (they cover the bogie control links on the prototype) are from 5mm diameter plastic tube with the ends filled and filed. Pipes are leftovers from other kits but guitar strings would work just as well.

Removing the tension lock is another job for a small saw followed by some sanding to leave a flat surface to fit the new part. The bogie side frames are made from a horrible soapy plastic that resists most adhesives but epoxy seems to have held the buffers in place so far.

STEP 10





STEP 7

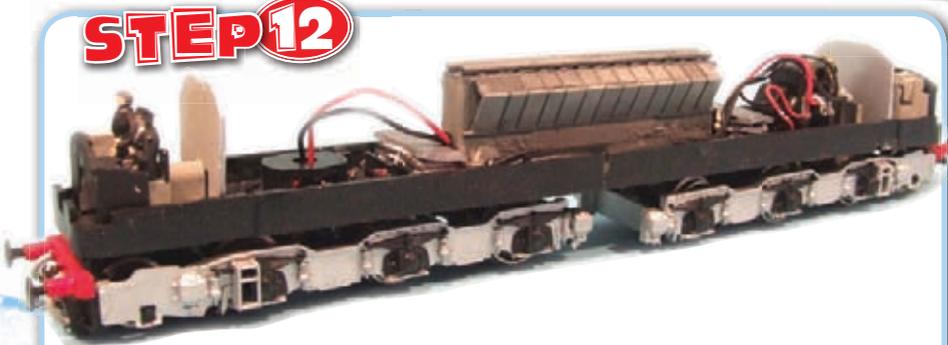
The body slides over the chassis and is held on by friction. However it's easy to slide it down too far and interfere with the bogies so I fixed some scrap plastic into the sides with superglue to provide some stops.

Bodywork complete, the loco can be re-assembled and tested. Make sure the bogies swing and that the chassis isn't causing the body to bulge at any point. Watch out for the flange at bottom edge of the body as it's very fine.



STEP 8

STEP 12



The Replica cab interiors can be reused with a bit of chopping. The backs have to be narrowed by a couple of mm each side, the height reduced to the top of the door. I painted them pale grey with black control panels. The crew had a nice coat of matt black too as the shiny clothes looked a bit like PVC, not a material used by many railway companies for staff uniforms! As much lead sheet as possible is packed around the engine and the wires glued in place so they stay below the window line.

The body is painted with Humbrol enamels as follows:

- Body – Satin black (85)
- Roof and bogies – Silver (11)
- Belt line and handrails – Chrome (191)
- Buffer beams – Red (60)
- Vac pipes – Pale Grey (147)

Once the transfers were fitted, the whole model received a spray of satin varnish. Finally the underframe boxes and bottom of the body were painted matt black (33). These differing shades of the same colour really do show up on the finished item

STEP 13

Glazing is provided and has to be trimmed to size and glued in place. Canopy glue, a high quality PVA, is ideal for this as it dries clear. Don't use superglue as the vapours will fog the plastic. Reaching inside to poke the windows into place is fiddly but a matchstick with the end cut at an angle and then tipped with Blu-tack makes the job a lot easier. The side window is glazed with plastic kept from some packaging as I only needed a tiny bit.



STEP 14



NME

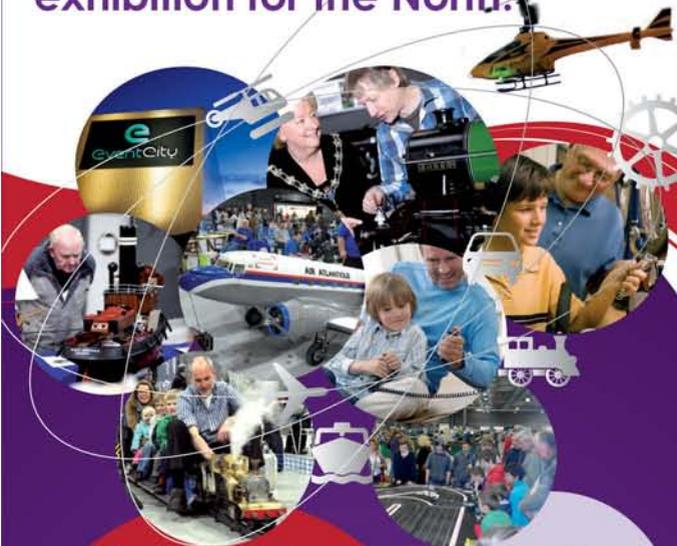
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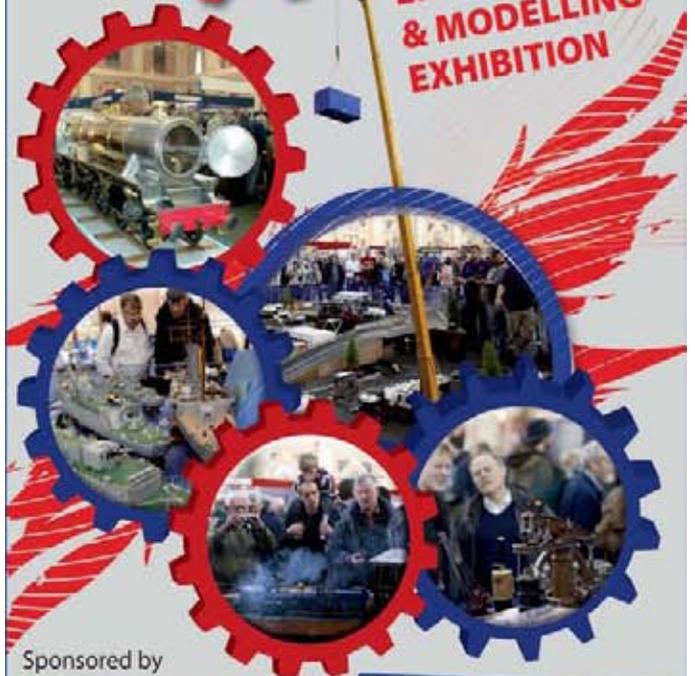
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Tucked out of sight at the Great Central Railway's Rothley station is this van slowly succumbing to rust and rot.

Grounded Van Body

What do you do with a project that goes wrong? Chuck it in the bin? Hide it in a drawer?

Sometimes you can use the failure elsewhere. Old railway van bodies are given new life as buildings around the railway and on farms everywhere. While you can buy kits and even ready-made models to do this on a layout, why not

just use a spare body that you have kicking around? A badly assembled kit, or perhaps a repaint that went wrong, there's no need to let them go to waste. Who cares if the chassis is no good, you won't be using that bit anyway.

If all else fails, there are plenty of candidates in the second-hand boxes at most model railway shows for a few pence. Older models work just as well as

the latest mouldings too. A coat of dirt and rust hides slightly chunky details.

It's worth taking the odd photo' of vans you see around. With many over 50 years old, the numbers are gradually declining. Sometimes the owners perform repairs – one van near my home has gained a corrugated iron roof – now that would make a nice model.



STEP 1: My test subject is an old Graham Farish 'OO' gauge van that must be 25 years old and has received a rather poor repaint.



STEP 2: Removing the old paint took a quick scrub with Cillit Bang cleaner in the sink using an old toothbrush to get between the planks. It's obviously vicious stuff so read the safety advice on the bottle.



STEP 3: The result looked pretty good as it was. The old LMS livery was showing through and the brown paint had inexplicably stuck to the ends rather better than the sides.



STEP 4: Assuming the farmer had replaced the sliding door with something a little more agricultural, I cut the old one away. Don't try and do this in one go, repeat the cut many times and you'll work through the plastic.



STEP 5: Using some plasticard offcuts, I filled the hole. Planks were scribed with an Olfa cutter and then the gaps between them widened randomly by scraping with the side of a scalpel blade. A few microstrip offcuts made some hinges which are probably too small for the weight but they would have just used whatever came to hand.



STEP 6: To keep the van off the wet ground, some wooden packing was made up from old coffee stirrers. Many vans are just dumped on the ground so wouldn't need this luxury. You can see a leaky roof patched with a bit of thin plastic too. It all adds character.

FINISHED MODEL

I painted the van with Humbrol enamel and then gave this a wash of thinned Railmatch 'underframe dirt' when dry. This partly lifted the base coat but as it left the grey body showing through just like weathered wood, I left it alone. Sometime accidents are happy ones.





WHITEMETAL

Wagon Kit

In the hierarchy of kit building, plastic kits are often unfairly considered as suitable mainly for beginners. More exotic materials are the preserve of hairy chested experts with access to workshops and engineering tools. Obviously this machismo is a load of rubbish which I'll hopefully dispel in this guide.

The first question in many minds will be, "What is whitemetal?" I'm no chemist but understand it to be an alloy of lead, tin, bismuth and antimony. In these health conscious times, the term can also refer to kits produced in a lead-free version of the metal which includes pewter. The metal can be cast reasonably cheaply in rubber moulds using equipment that you could install in your shed. Were you to fancy setting up in business for yourself making kits this way, then a thousand pounds would cover most of the equipment and moulding materials you would need initially. Compare that to the tens of thousands needed to do the same thing in injection moulded plastic and you can see why the material has appealed to those looking to produce short runs of kits whose sales might

not make it into the hundreds. Despite this, whitemetal kits are capable of amazing levels of detail and often don't cost any more than the better plastic models.

In the 50 years or so that whitemetal kits have been produced, technology has improved somewhat. Remember this when considering your first purchase – there are some real horrors out there from days of yore. A modern kit will normally be a much better bet with sharper detail and parts that go together without resorting to serious rebuilding of the parts. That's not to say those old kits can't be made up; an experienced modeller can put anything together, even if the best part is the box the parts came in!

In the main, assembling a whitemetal kit is similar to a plastic one. You do need to check the parts carefully before fitting and if they are bent, carefully unbend them with finger pressure; something you can't do with plastic! Many people would recommend solder for joining the bits but I have used superglue for this and have many models constructed with it that are over 15 years old. There are advantages to solder, it acts

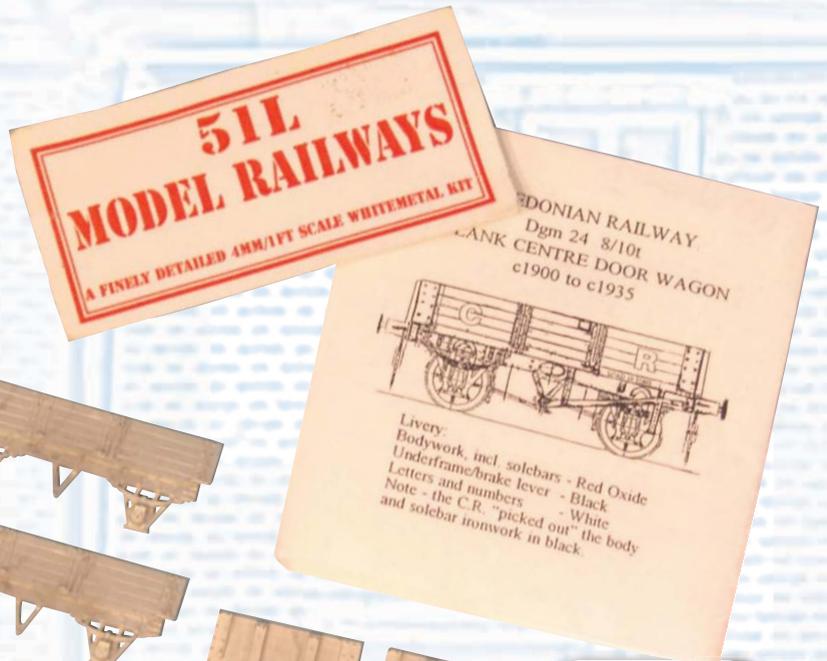
as a filler for joints that are less than perfect, but for the beginner it can be a bit daunting. My preferred glue is Zap-a-Gap green label which seems to stick well and performs some gap filling.

The kit I describe is the sort of esoteric model you could never justify producing in plastic, a Caledonian Railway 4-plank open. It's nice and simple, yet different enough to be interesting. As these kits are aimed squarely at the more experienced enthusiast, some skills are assumed. Aside from the various brake gear options, the instructions really only tell you to stick the parts together. Mind you there aren't many bits in the bag! Choice of wheels and couplings are also left to the purchaser which can be off-putting the first time you sit down to build a model. The tools required are no different to those you would use for a plastic kit.

Safety note: The castings in whitemetal kits contain lead. After a modelling session wash your hands to avoid any possibility of lead poisoning. Don't let children or pets near the parts in case they chew on them either. And don't chomp on them yourself.



The 51L wagon kit as it comes.



STEP 1

The contents of the kit. The kit is unusual in that the solebars and axle boxes are moulded in with the sides. This reduces the number of parts and should make construction easier.

In general, a whitemetal kit will need more cleaning up than a plastic one, it's the nature of the production method although modern kits are better than older ones in this respect. This kit is remarkably clean with just the mould feeds to be cleaned off the top of the sides.

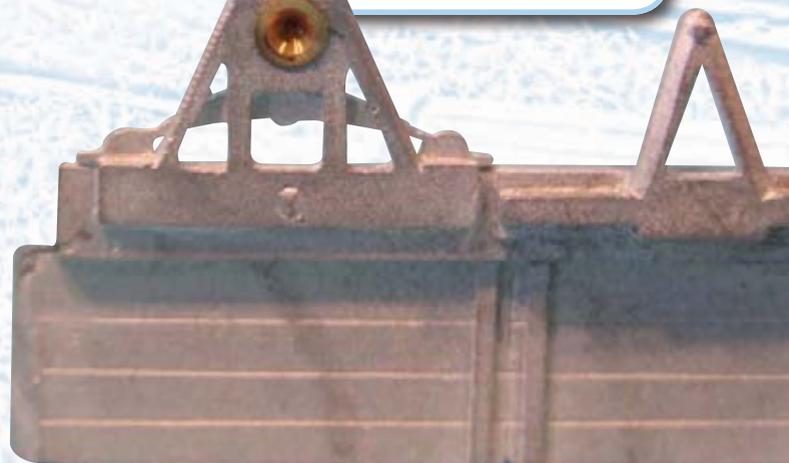
STEP 2

STEP 4

The holes are part-moulded in the back of the axle boxes but needed to be drilled out with a 2mm bit. Be careful not to go too deep as it's easy to drill all the way through and out the front of the axlebox. A dab of superglue with hold the bearing in place.

STEP 3

The builder has to supply his or her own wheels and bearings. There are various types to choose from (left to right) top hats, plain and waisted. The 'brim' of the top hats stop the bearing disappearing into the hole it fits into. I prefer the waisted version as you need to drill out less metal. For wheels I used two pairs of old Romfords but Hornby spoked ones will fit just as well.





STEP 5

The sides and ends have bevelled edges which need to be tested and cleaned up slightly to get a good fit. Gentle scraping with a knife rather than going in with a rough file is the order of the day. I like to number the ends so that I don't mix them up between dry fitting and glueing. Make up a couple of L-shapes from the sides and ends on something flat, doing your best to keep them square. Then leave the assemblies until the glue has fully set.

STEP 6

Bring the sides together whilst trapping the wheels and axles. This is easier to say than do. Try Blu-tacking one of the 'L's upside down on some glass and bring the other to it. When together, adjust so the axles are at right angles to the sides. In theory, if the body is square then the axles will be, but this isn't always the case. I prefer a slightly wonky body and square chassis if forced to decide.



STEP 7

The floor is a piece of Slaters planked plasticard which has to be cut to size and glued in place. Roughening the surface with some sandpaper makes it look a little more like wood.

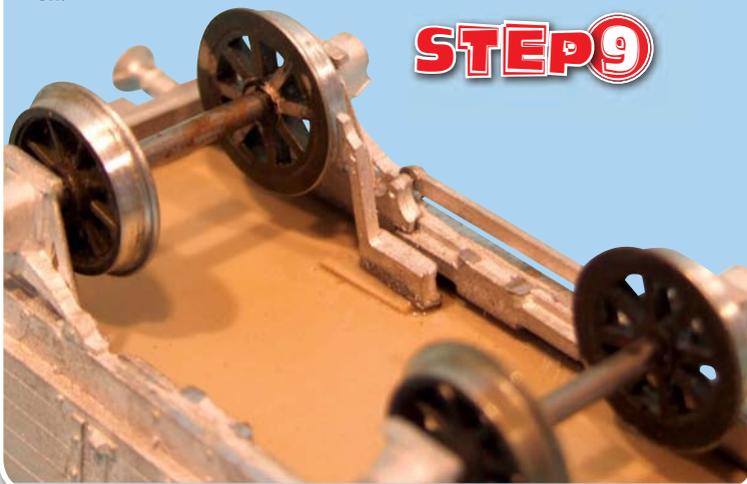
STEP 8

Two sets of brakes are supplied. The later set shown here fit on the inside of the solebar. You fit the shorter brake levers making sure the one with the extra cam (round bit) at the end is on the opposite side to the brakes. Some wire is supplied to make the rod that links the sides.



I fancied a really early wagon with only one shoe. This should fit inside the solebar, but in 'OO' this leaves the shoe out of line with the wheel so I fitted the casting to the floor, packing it with a scrap of plastic to get the height right. The pivot piece is then fitted to the solebar bottom (I had to shorten this a bit) and finally the long lever is glued on.

STEP 9



STEP 10

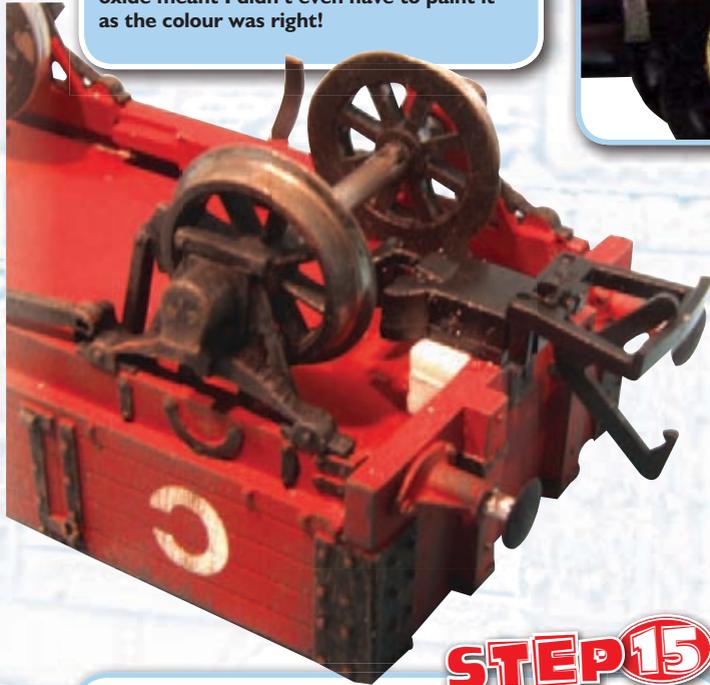
Door bangers (springs to stop the side door flapping under the wagon when it is opened) are made from the supplied brass strip. This is cut to length and fitted under the pad on the door. Make sure that if the door opened it really would hit the banger! Some gentle curving with pliers is needed to get the shape.





STEP 11

The wagon ready for paint. At this point the corners look a bit rough but I ran some Zap-a-Gap in a drop at a time picking the glue up with a pin. The gap filling properties work well here and neatly fill any joints. Leave everything to harden overnight. The model can then be primed with car aerosol primer – using the red oxide meant I didn't even have to paint it as the colour was right!

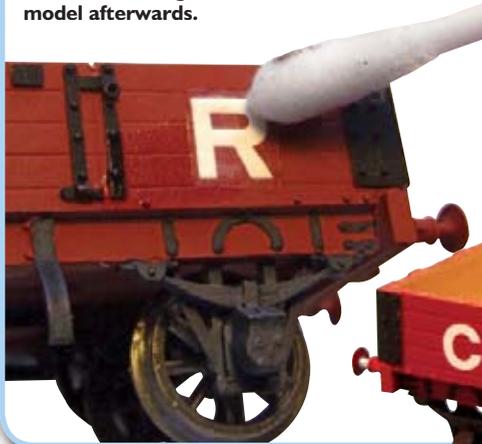


STEP 15

As with most white metal kits, no provision is made for couplings. Fitting NEM pockets under the buffer beam is easy enough though. They could be glued to the bottom of the beam but to give the glue more to grab at, some slices of plasticard were built up to give a bigger ledge. The coupling and pocket are available as spares from Bachmann.

STEP 12

Not fancying my chances at hand lettering the sides I used some transfers for the CR. These were methfix so they had to be cut from the sheets, placed in position and flooded with a 4:1 methylated spirits/water mix. Using this type of transfer is smelly but has the advantage that no film is left on the model afterwards.



STEP 13

A pristine wagon. Painting the strapping requires a steady hand and small brush. Since I had used the primer as body colour I couldn't easily touch up any mistakes but a second brush loaded with turps ready to wipe out any wobbles ensured a reasonable finish. You'd be surprised how easy it is to lift erroneous paint, don't flood the model, just wipe the brush over the error. Watercolour artists call this 'lifting the paint'.



STEP 14

The finished wagon. I felt some light weathering was required and dry-brushed the metalwork with dark grey and rust. Then some dark brown was added to the sides. Inside, the natural wood is pale grey and brown with a wash of dark brown.



TOP TIP

When working with white metal, lots of wise people will tell you not to file it as the shavings will clog your file and ruin it. That's partly true, but the purchase of a file comb, a special wire brush with angled teeth, allows the metal to be easily cleaned from the file. Regular use will make files last a long time, the one in the photo is over 20 years old and still in regular use.

The finished wagon on a layout.

Finished



Etched 02 DIESEL

People often ask me what the best locomotive kit for a beginner would be. My reply is always the same, the Craftsman Models 02 diesel. Despite being designed in the 1980s, and a little basic by the standards of more recent models, it has many commendable features so that despite building many locos over the years, I've never found a kit to supplant it.

For a start, the parts make up into an accurate model. That's not always a given with older kits. Designers make mistakes occasionally and plans aren't always easy to read. In my collection is a steam railmotor which required 2mm adding into one end as no-one had spotted this was curved and so needed to be a bit wider than supplied.

Construction is significantly eased by the pre-formed bonnet and partly curved cab roof. Major parts are located with tabs and slots too. The chassis has four wheels, no valve gear or jackshafts to contend with and is short enough not to need compensating.

Not everything is easy and the builder still has to pay attention as he or she works but if you pay attention, a respectable model should be the result. Maybe your first attempt won't be as perfect as the latest ready to run model, but it won't be far off and more importantly, since you made it, you'll be proud of it. Of course, the builder looks at the finished model and sees only faults, but rest assured, put it in front of the average visitor to an exhibition and they will be impressed.

There are a lot more steps in this project than a normal Parker's Guide but I've broken the process down as much as possible to make it easy to follow and give anyone contemplating having a go an idea what is involved. There aren't any special tools required other than the basic soldering kit and some needle files.

It is worth purchasing a set of aluminium jig axles from London Road Models. For less than a fiver they do help ensure that the wheelbase of the chassis is precisely the same as the distance between the con-rod holes. If this isn't right then the model won't run well. I've built kits without them but for so little money, take the help.

Apart from the basic kit, you'll need a motor and gears. Being designed so long ago, the kit assumes a large power unit supported by a plate in the chassis. In more modern times, a much more modest unit that employs an

etched gearbox is a far easier prospect. For the beginner, this allows the gear mesh to be set up and tested outside the chassis. I like to test every step of the mechanical work separately from the other parts because it's the bit that makes me nervous.

Finally, you'll also need to buy some wheels. This project uses Romford wheels produced by Markits. They aren't the cheapest but being made of metal and featuring self-quartering (the cranks on opposite sides of the loco should be at 45 degrees to each other) axles, they can be taken on and off the model as often as you like without fear of damaging them. Available in insulated and non-insulated varieties, I prefer the former. You could use a pair of each and have an electrically live chassis but this just increases the chances of short circuits. Anyway, I've managed to mix the wheels up in

the past and only realised the problem when taking them off, which was a nuisance. Go for all insulated, it's one less thing to think about.

People always ask why all these bits are extras. The answer is that for 4mm scale, there are three gauges to contend with – 'OO', 'EM' and 'P4', each with its own wheel profile. Would you want to pay for two sets of wheels you don't want? It's the same with motors and gears. I like 40:1 or 50:1 ratios for this sort of shunter. Others prefer something more extreme – 108:1 is possible. Some people like open frame motors, others prefer closed versions called cans. Kits like this come from small manufacturers who aren't going to be able to carry every combination.

Even when the makers do help, we modellers are a contrary lot. I once listened to someone on the stand of a larger kitmaker who also produce their own range of wheels, trying to explain to a prospective buyer that even if he could be supplied with the model minus the included wheels, he was still going to have to find some for the model and the discount would be considerably less than the cost of wheels from another vendor.

Anyway, have a read and then have a go. Don't skip steps – even something as simple as soldering the leads on to the motor straight away is important. Clean up your work at the end of every soldering session. Take it slowly and try to make every part as perfect as you possibly can. Enjoy the successes, there is nothing to beat watching a chassis you have made move up and down a test track under its own power.

Except that is, the sight of your loco, the one you built yourself, sitting on a layout. It's all your very own work and you should feel very proud.

SUPPLIERS

Rural Railways

School House, Chapel
Lawn, Bucknell, Shropshire,
SY7 0BW

01547 530016

(Note: Mail order by
cheque or exhibition
sales only)

**Craftsman 02 Diesel -
£45.50**

**Romford wheels and
axles - £19.70**

Mashima motor - £19.95

Markits gearbox - £4.20

Gears - £5.50

London Road Models

PO Box 643, Watford,
Herts, WD24 5ZJ
[www.scalefour.org/
londonroad/](http://www.scalefour.org/londonroad/)

**1/8" Alignment Jigs (set
of three) - £3.50**



Unpacking the box you find lots of flat etched parts, a couple of pre-formed ones and whitmetal castings. To this the builder has to add wheels, motor and gears.



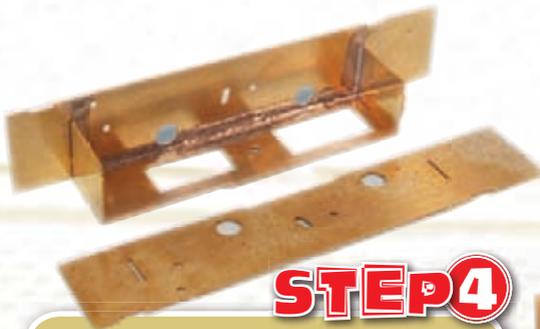
STEP 2

Before you start, get organised. I know from experience how easy it is to lose parts, especially the tiny detail ones. A few plastic boxes from a stationery store will help enormously.



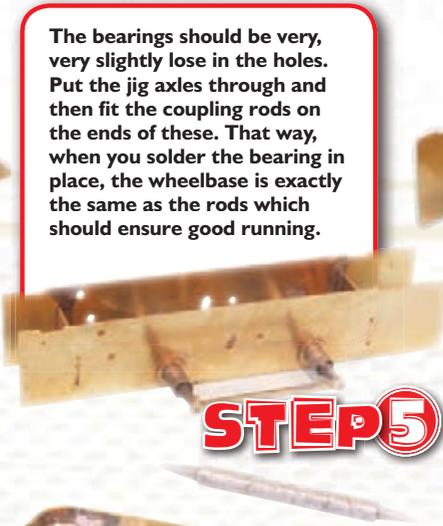
STEP 3

Construction begins with connecting rods. Two etched layers are held together and solder is run around the edge. Use lots of flux and clean the excess solder away afterwards. The holes for the crank pins must line up, but will probably need a small drill running through them after soldering.



STEP 4

The chassis is made in three parts. First, the spacer is folded up and soldered to one side. Check it's properly seated against the side before moving on and fitting the other side. Make sure everything is square.



STEP 5

The bearings should be very, very slightly loose in the holes. Put the jig axles through and then fit the coupling rods on the ends of these. That way, when you solder the bearing in place, the wheelbase is exactly the same as the rods which should ensure good running.



STEP 6

The wheels and axles are test fitted. Use a bit of insulation stripped from wire to hold the rods on. At this point everything should revolve smoothly when pushed. Ease the bearings and coupling rod holes a touch if it doesn't. Enjoy pushing the chassis around the layout, it's part of the fun.



STEP 10

Next, the steps go in. Try to solder from the back as the chequerplate treads are difficult to clean solder from.



STEP 11

The front of the bonnet fits in the pre-formed component. Start at one corner and work your way around the seam. Use lots of solder for this.

STEP 12

The prototype's nose has curved corners which require a little filing. The generous fillet of solder from the previous step allows this.



STEP 16

Overlays are fitted to the back and front of the cab. You could solder, but superglue works just as well and is a lot easier.





I like to solder the body retaining nuts to the footplate before access is blocked by any other bits. It also ensures I don't forget them, which has happened!

STEP 7



STEP 8

The buffer beams are laminated just like the coupling rods and then soldered to the footplate. In the photo, I've tacked them in place and will make the joint properly once I'm happy everything is square.

STEP 9

The sides are folded along the etched lines and fitted in place.



STEP 13

Locate the bonnet tabs through the footplate slots and solder these from underneath.

STEP 14

Tabs and slots also locate the cab front. The 'steps' for the fuel filler are fitted to the sides and then these are fitted in place. Keep checking everything is square as you work.



The cab interior is built up before fitting the back. Notice how little space there is above the body retaining nut. The bolt that goes in here will need to be shortened or it will stop against the floor before being tightened.

STEP 15



Solder thin wires to the motor and test it for a few minutes in each direction.

STEP 17

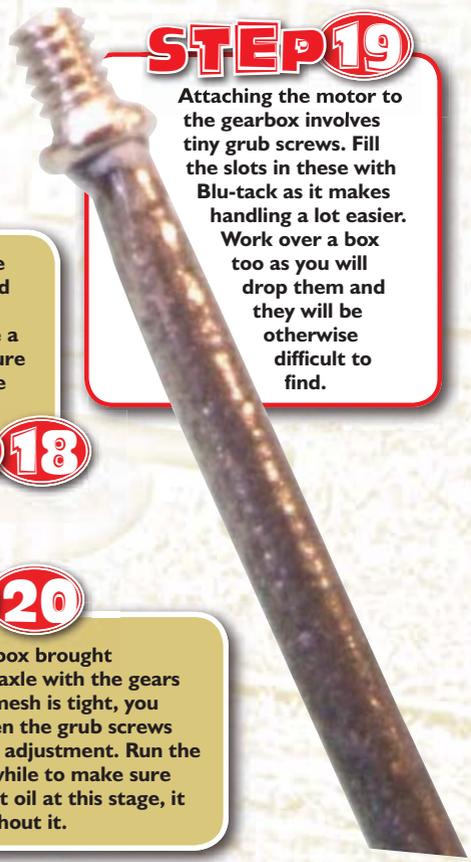


Fold up the gearbox and solder in the bearings. Use a jig axle to ensure these are in line with each other.

STEP 18

STEP 19

Attaching the motor to the gearbox involves tiny grub screws. Fill the slots in these with Blu-tack as it makes handling a lot easier. Work over a box too as you will drop them and they will be otherwise difficult to find.



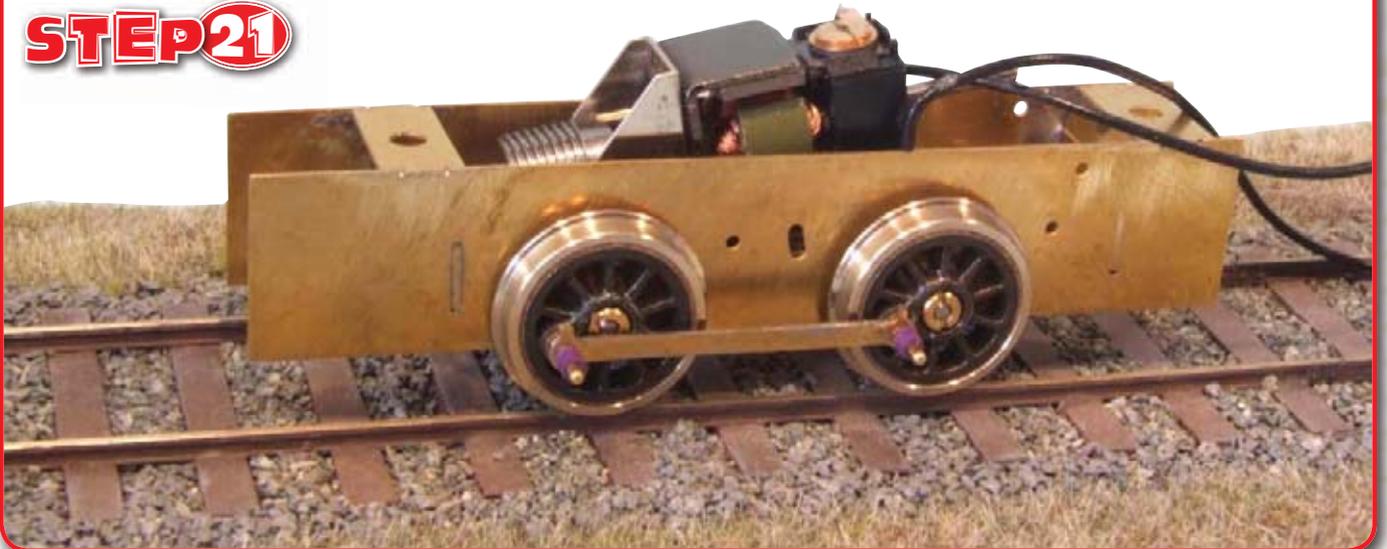
STEP 20

Motor and gearbox brought together. Fit an axle with the gears and test. If the mesh is tight, you may have to open the grub screws up a bit to allow adjustment. Run the whole lot for a while to make sure all is well. Do not oil at this stage, it should work without it.



Fit the power unit in the chassis and test again. Everything should be OK without lubrication but a small drop on each bearing is okay.

STEP 21



STEP 24



The paxolin is glued to the plate in the bottom of the chassis. Then the pick-up wires are bent to touch the back of the wheels and cut to length. Make sure they don't touch any other metal or you'll create a short circuit.



Shorten the motor wires and solder them to the paxolin plate. Clean the wheels and your chassis should run on the track. If not, look for electrical problems such as pick-ups not touching the wheels.

STEP 25

STEP 26

Returning to the body, fit handrails to the bonnet. A strip of melamine that fell off the kitchen worktop makes an excellent spacer to keep them all the same distance out.



Take a strip of 2mm deep plastic and use this as a guide to cut all the handles to the same length.

STEP 30



The cab roof is partly pre-formed but the end bends need to be added. Use small pliers and keep testing the part in place. Little gaps can be filled later but the smaller the better. Add rainstrips from wire. Leave it off so the cab inside can be painted.

STEP 32

STEP 31

Fit the buffers. You could solder the whitmetal castings in place with a special iron. I prefer to use superglue as it's a lot easier.



Pick-up wires are attached to a bit of paxolin. Slit the copper down the middle to insulate one side from the other. I use 28swg phosphor bronze for this. One roll is good for many, many engines. Brass and nickel-silver will also work if you have them to hand.

Once happy that the chassis runs, remove the motor, prime the metal and paint. The bearings should be scraped clean, do this while the paint is fresh as it's easier to remove.

STEP 22



STEP 23



STEP 27

Make the veranda handrail up from wire using the plan as a guide. Solder it together on the flat and clean up all the joints. This way, you know it will be robust enough to survive handling.



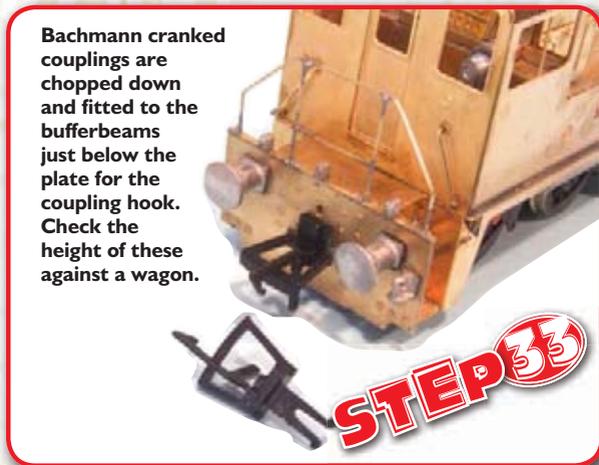
Fitting will probably involve opening up solder filled holes in the footplate. Work quickly when attaching it to avoid desoldering the joints, or just use superglue.

STEP 28



STEP 29

Door handles are formed and then soldered from inside the bonnet. Concentrate on making them all stick out the same distance and mostly point downwards.



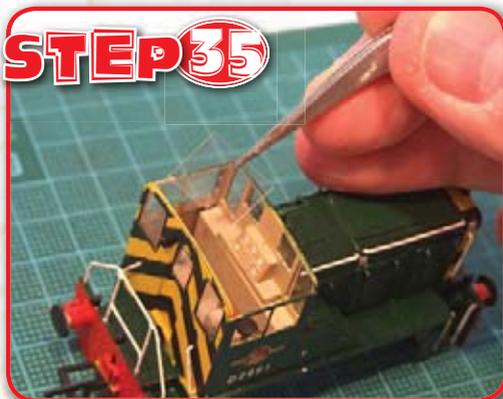
Bachmann cranked couplings are chopped down and fitted to the bufferbeams just below the plate for the coupling hook. Check the height of these against a wagon.

STEP 33



STEP 34

Give the body a final clean, then mask the couplings. A spray of primer from a car aerosol will provide a key for final painting and show up any areas of the body that could do with attention before finishing.



STEP 35

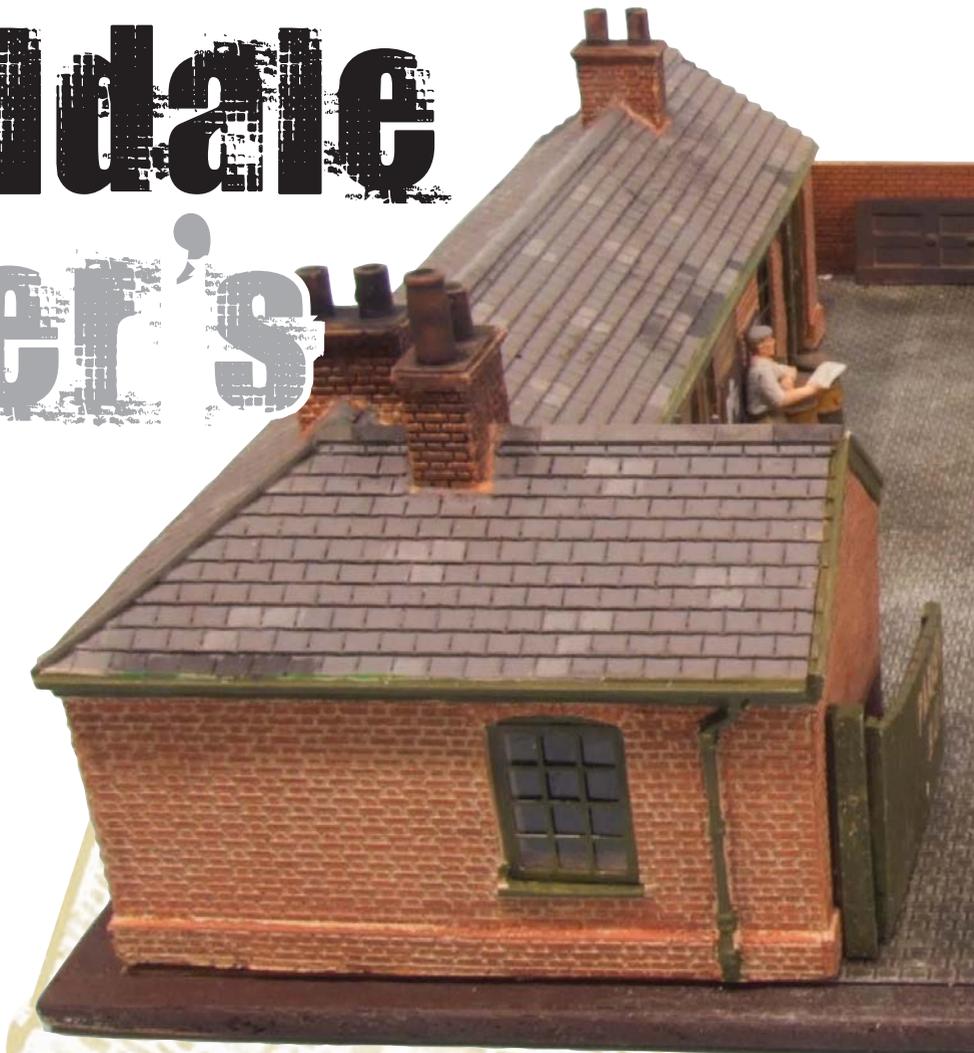
Glazing can be purloined from any flat plastic packaging. At the front and back it fits into recesses behind the windows. At the sides it just sticks on the back of the window holes. Use canopy glue or PVA here, superglue can dry foggy if there is any finger grease on the plastic.

STEP 36

The finished model given a wash of dark brown and smothered with weathering powders. While not perfect, if you've got this far you have a model that you can be very proud of.



Skaledale Builder's Yard



Ready to use resin cast buildings have been a welcome addition to the modeller's armoury over the last few years. Many people no longer indulge in building cardboard kits for their structures, something unthinkable a decade or so ago. Just like the card buildings, the RTR versions suffer from people looking at them and saying, "Ahh yes. That's Skaledale" as you see the same structures appear on every layout.

It doesn't have to be like that. If you consider the buildings a means to an end then they are fantastic raw materials for modification into something a little more personal. Editor Mike Wild passed me a couple of the exclusive *Hornby Magazine* Southern Region station buildings, suggesting I could make some radical alterations to them. I think he was expecting some new paint work and perhaps a couple of new bits stuck on.

Removing the models from the box I was initially very impressed. They are really nice and if that's what you want then fantastic. Pondering a conversion, my initial thoughts turned to stable blocks but I don't think most people have any use for those so something more urban would be better. After a week or so of looking at the models a trip into town on the bus gave me an idea. I pass a small builder's yard behind a local supermarket. The design wasn't important, in fact before I finalised my plans I'd seriously considered a tower over the gateway complete with 'Bates Motel' style roof, it was the idea that mattered. If I arranged the building around a courtyard, the finished model could be fitted in anywhere.

The photos show the steps I took to build the model in detail but I ought to comment on the biggest modification I made. To make a corner building I cut the ends off the two stations. This needs to be carried out reasonably accurately and while you might be able to do it freehand, I'm a bit hopeless at this. The same problem affects my woodwork so a couple of years ago, twenty quid at my local DIY store saw me the proud

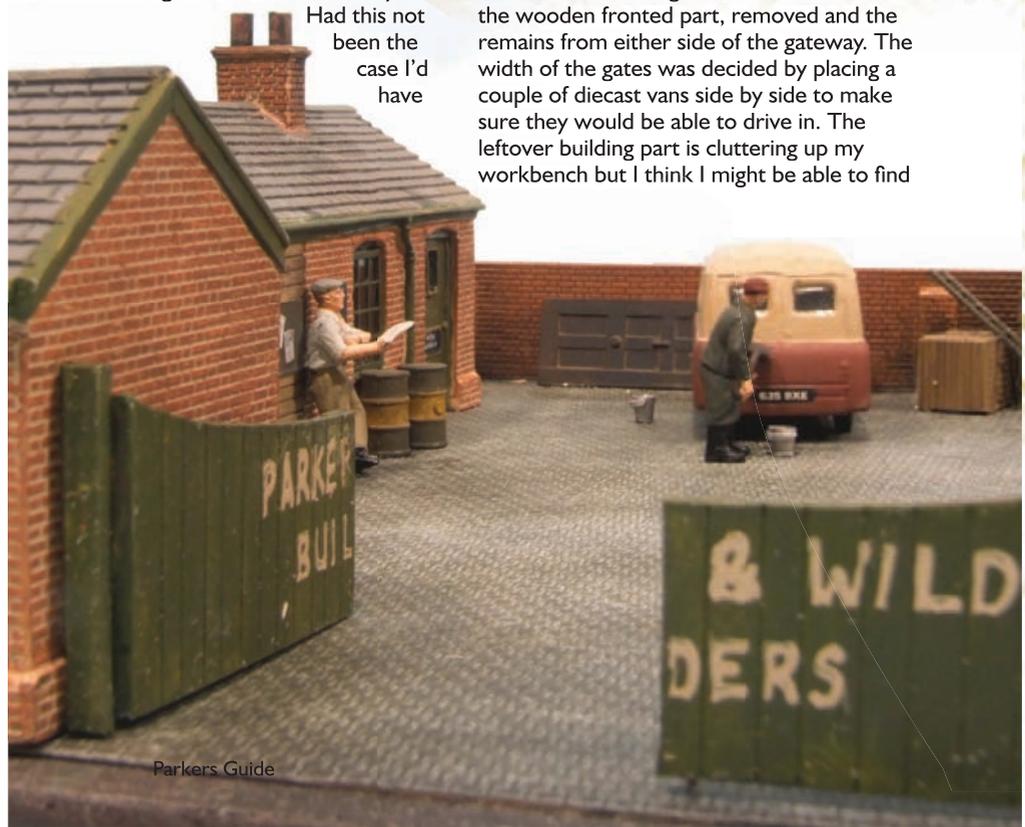
owner of a mitre saw. The price hasn't gone up much in the last couple of years and it's a fantastic tool which enables me to achieve nice neat and accurate cuts at any angle in wood and as it turns out, resin.

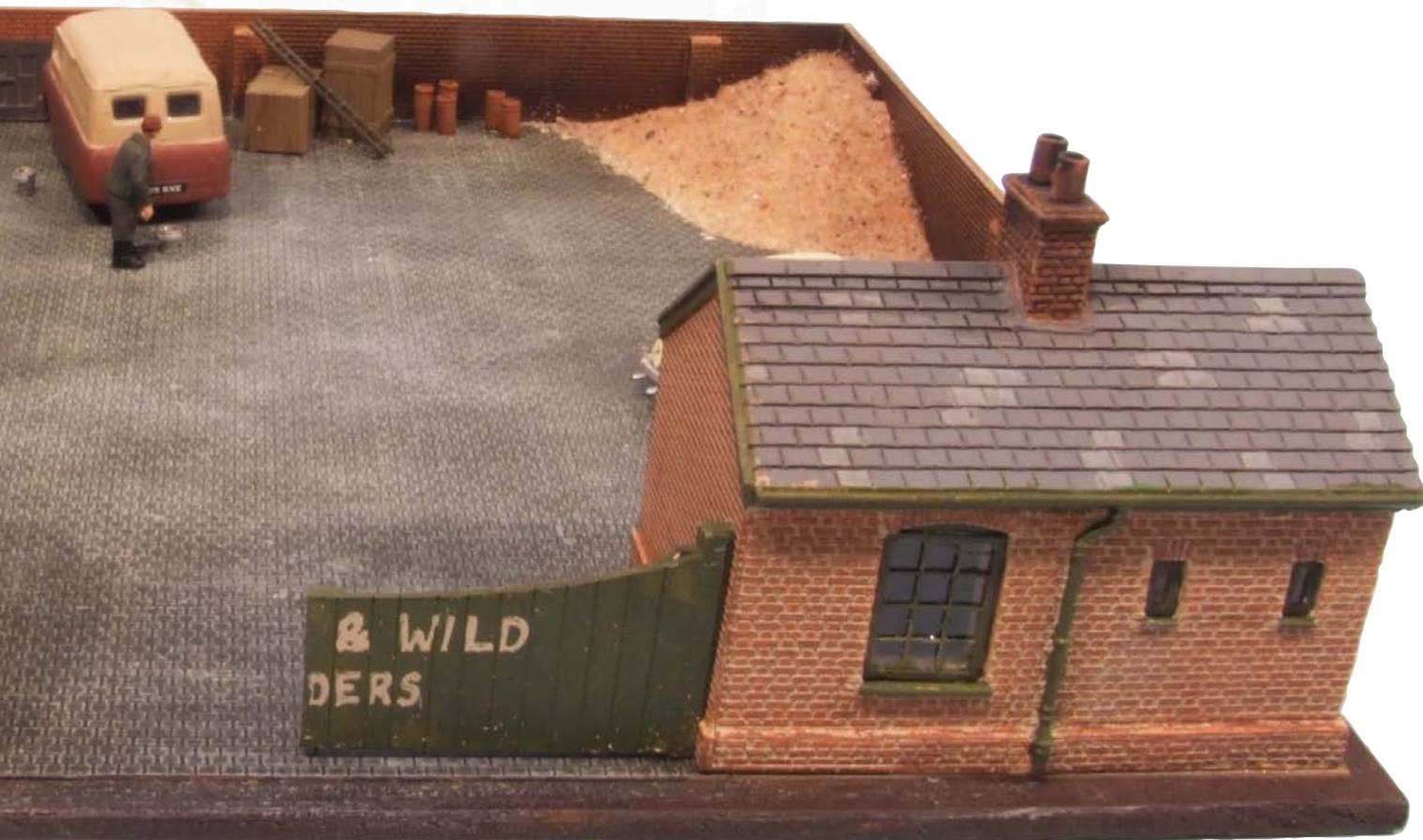
When doing this I struck lucky in that the saw blade managed to miss the chimneys.

Had this not been the case I'd have

hacked them off and replaced the tiles with bits of thin card. Once cut, the outside corner was nice and neat, requiring only a slight touch of Green model filler to tidy things up. The inside of the corner was a different matter as you can see.

One of the buildings had its middle section, the wooden fronted part, removed and the remains from either side of the gateway. The width of the gates was decided by placing a couple of diecast vans side by side to make sure they would be able to drive in. The leftover building part is cluttering up my workbench but I think I might be able to find



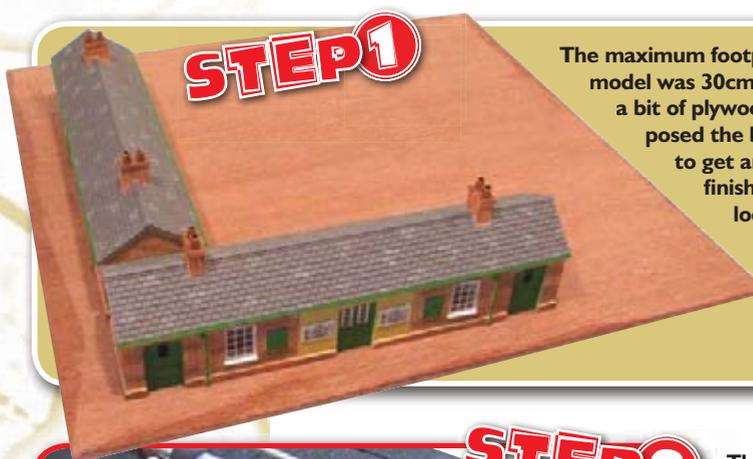


it another use. Initially I tested methods of removing the noticeboards on it. Having unsuccessfully tried some ideas, the resin is very hard, the smart move seemed to be to leave them in place on the final model!

For me, the best thing about a project like this is the opportunity for detail work. You'll see a couple of vehicles from my scrapbox for example. The 1957 Beetle is an old 'HO' scale model, matt varnished and given British black numberplates. The van is a plastic kit but is now available from Oxford Diecast. Various bits and bobs came from the Wills building details pack and ladders are Ratio as are the oil drums. Bicycles are from the Merit cycle rack. None of these were bought specially for this project, I just had them lying around.

One advantage of doing a job like this is that you get something finished. Okay, so maybe I ought to put some greenery around the base of the buildings to bed them in a little, but this module didn't take that long to produce and I'm very happy with it. If it were part of a bigger layout, it would make the ideal break from wiring, ballasting or any other job that takes a long while but isn't very interesting.

Hopefully though, you will look at ready made buildings in a new light. You might not be able to buy exactly what you want, but you may be able to get something that is close and can be modified to do the job, even if it does mean hacking it up with a saw!

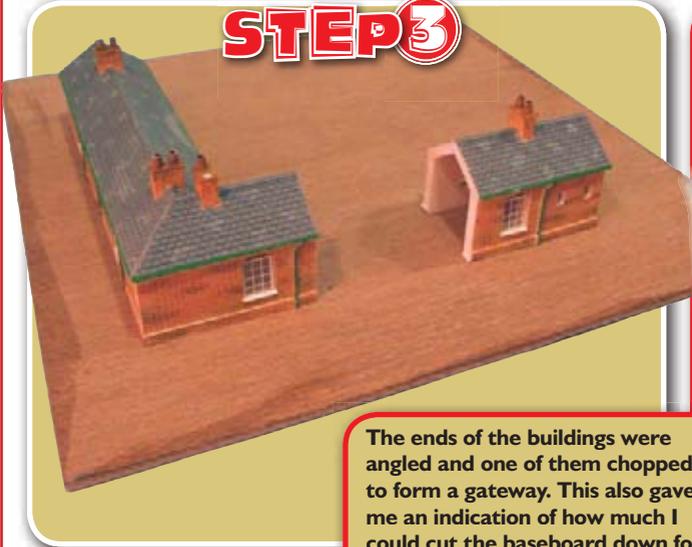


The maximum footprint for the model was 30cm square so I cut a bit of plywood that size and posed the buildings on it to get an idea how the finished model would look. After a little playing around, this looked the best use of space.



This has ruined the re-sale value of these models! Using my mitre saw, the resin was surprisingly tough to cut. I worked outside as the dust given off makes a real mess and breathing it in isn't healthy. Wear a face mask to be on the safe side.

STEP 3



The ends of the buildings were angled and one of them chopped to form a gateway. This also gave me an indication of how much I could cut the baseboard down for the final model.

STEP 4



The inside of the corner presented problems. The windows overlapped and would need to be filled in.

STEP 7



The roof was masked off and then the entire building given a spray of Humbrol pale stone (121) enamel to give the mortar base colour.

STEP 8



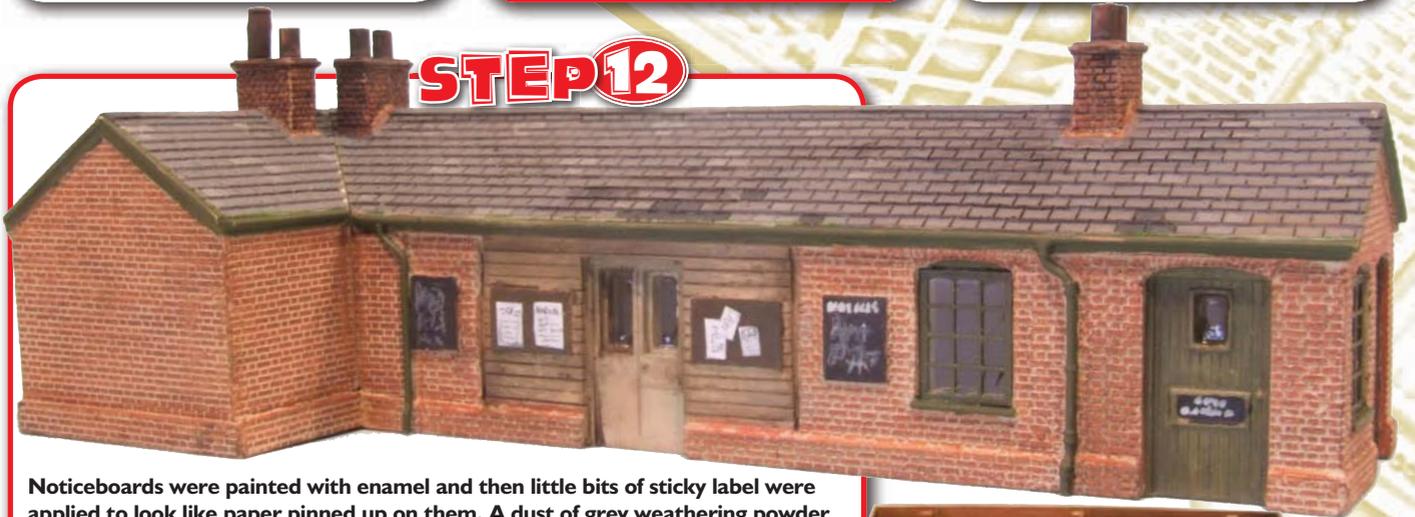
While the paint dried I started on the rest of the scene. Slater's produce an embossed plastic that claims to be cobbles. They are OK but looking through the selection in the shop I decided that the 2mm tiles looked more like the cobbles I was familiar with.

STEP 9

Around the edge of the baseboard is a wall made of 30 thou plasticard with embossed brick either side. This was painted in the same way as the buildings.



STEP 12



Noticeboards were painted with enamel and then little bits of sticky label were applied to look like paper pinned up on them. A dust of grey weathering powder took away the whiteness. Blackboards are scribbled on with pale grey Berol colour pencil. You might notice one of the chimney pots has been replaced with a Wills plastic one as I accidentally knocked off the original.

STEP 13

The base received a coat of dark grey and then a spray of 'Mud Brown' Modelmates spray dye. Finally dry brushing with pale grey simulated the wear from traffic in the yard.





STEP 5

Rather than reach for the filler, I simply covered the ends and windows with Slaters embossed plastic. The roof ends are finished with plasticard barge boards. They aren't quite a match for the Sakeldale version but near enough. The wire downpipe disguises the join between plastic and Hornby building wall.

STEP 6

Before finishing the brickwork I popped all the windows out by pushing them from the inside. They are really nice brass etchings which I intended to re-use.



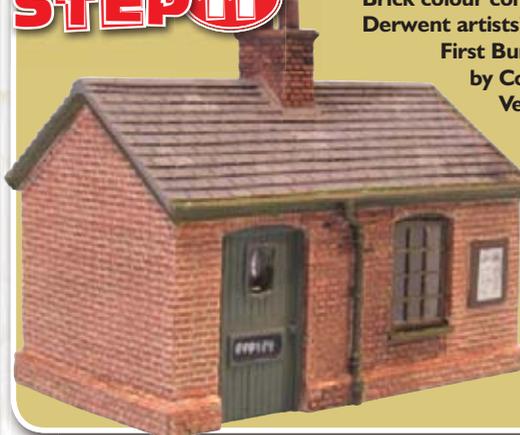
The windows were stuck to a piece of wood with double sided tape and then brush painted. It's a lot easier to hold on to them if you do this. Better still, when you peel them away, enough sticky remains on the back to fix them to the glass.

STEP 10



STEP 11

Brick colour comes from a rub of Derwent artists' pencil crayons. First Burnt Sienna, followed by Copper Beech and Venetian red. A spray of Testors Matt Varnish kills the slight sheen this method gives. Finally, the windows go back in and the doors and gutters were carefully painted.



In the corner a bit of balsa wood was carved to a mound shape and then covered with PVA glue and sprinkled with sand.

STEP 14



The gates were marked out on a sheet of plastic. To get a nice curved top edge I simply drew around the edge of an old sweetie tin.

STEP 15



STEP 16

After scribing and painting, the company name was painted using a bow pen, although a Gel pen from a stationers would have been easier and probably neater. Masking tape keeps the letters in line and the same height. The result isn't as neat as transfers, but I think imparts a hand painted feel.

GWR V5 Wood Mink Van

Variety is the spice of life apparently. On a model railway this often results in an assortment of rolling stock that would never be seen in real life. What we really need are lots of open wagons full of coal and a slightly smaller number of covered vans which we can pretend are full of goods. This doesn't mean that the trains have to be boring. It just requires a bit of subtlety on our part. That, and a keen eyed viewer to spot the small changes.

Here, I'm building three Wood Mink vans. All are based on the Cooper Craft plastic kit (Code number 1003W) for the V5 variant, yet each are subtly different from each other.

First, some history; from 1886 to 1902, the Great Western Railway built their famous 'Iron Mink' vans to replace the earlier wooden versions. However, they

discovered that despite lasting better than the wood version, the higher initial cost and subsequent maintenance bills upset the accountants so construction reverted to wood, albeit with an iron angle frame.

The story gets a bit confusing after this. My understanding is that the initial batches were slightly shorter than most vans at 7ft, something that gradually changed with later orders.

The very first batch didn't have any ventilation but this was quickly rectified with a single central hopper vent and earlier vehicles were modified. After 1906, some vans were fitted with end louvres to cater for perishable traffic, such as fruit, flowers, vegetables, fish and meat. These vans were used in express freight trains. Many survived in useful service until nationalisation.

In 1912, double bonnet vent were introduced and older vans were altered

when being rebuilt or replanked.

What all this means is that there are many variations to be built from a single basic kit. A train of at least ten vans all superficially similar could each be unique if you build all the Mink variants on offer from Cooper Craft. Since they all go together in the same way, once you get into the swing of it, your fleet can grow at an impressive rate.

As supplied the kit is impressively complete. Cooper Craft are a well respected manufacturer and the model is very suitable for the beginner. The only area that requires more care than normal is removing parts from the sprue. The attachment points vary in thickness and proximity to delicate detail. I suggest starting with a scalpel and moving on to a Stanley type knife on the large runner.

Tension lock couplings are supplied and while these work, people often prefer to



SUPPLIER

Cooper Craft

Broom Lane, Oake, Taunton, TA4 1BE. UK

sales@cooper-craft.co.uk

www.cooper-craft.co.uk

**I003W - Dia. V5 Wooden Mink Van
- £6.30**

**I017 - Louvred Vent Alternative Van
Ends for 1003/7/8 - £2.50**

**I018 - Bonnet Vent Alternative Van
Ends for 1003/7/8 - £2.50**

use standard Bachmann or Hornby versions and mounting plates are included for the older variations of these. To continue the variety theme I've also fitted a wagon with Spratt & Winkle couplings to you can compare the end results.

Finally a word about painting. Even the livery on Minks is simple – an all over dark grey. Humbrol 69, tank grey, looks pretty good to me. The roof should be white but unless you are modelling the outside of Swindon's paint shop, I recommend Humbrol 147, matt light grey, which is almost white and gives a better clean, 'in service' appearance.

Oh, and there are plenty of leftovers too. Two sets of brake gear, handles and other parts can find their way into the spares box for future projects. After all, there's no point in wasting things is there?



A big pile of kits this time. Three vans plus some alternative ends.

STEP 1



The Cooper Craft kit is very complete. As well as the plastic parts there are wheels, bearings, ballast weights and transfers. Everything you need to build the model apart from paint and glue.



Brass bearings have to be fitted into the plastic sideframes. The holes seemed a touch tight for them. The correct way to cure this is to open them out with a suitable sized drill bit. I just filled the hole with Mek Pak, left it a minute for the plastic to soften and then pushed the bearings in.

STEP 2





STEP 3

Wheels from the Alan Gibson range are supplied. I was concerned that these might be too fine for reliable running on my track but compared to Hornby wheels, which I know will work fine, the tread width is the same. The diameter is 12mm as compared to Hornby's 12.5mm.

The running chassis. Make sure it is flat or track holding will be awful. The pointed brake gear hangers at one end need to be removed while you have the wagon upside down. I also needed to clean out the big holes in the solebars with a round file.



STEP 4

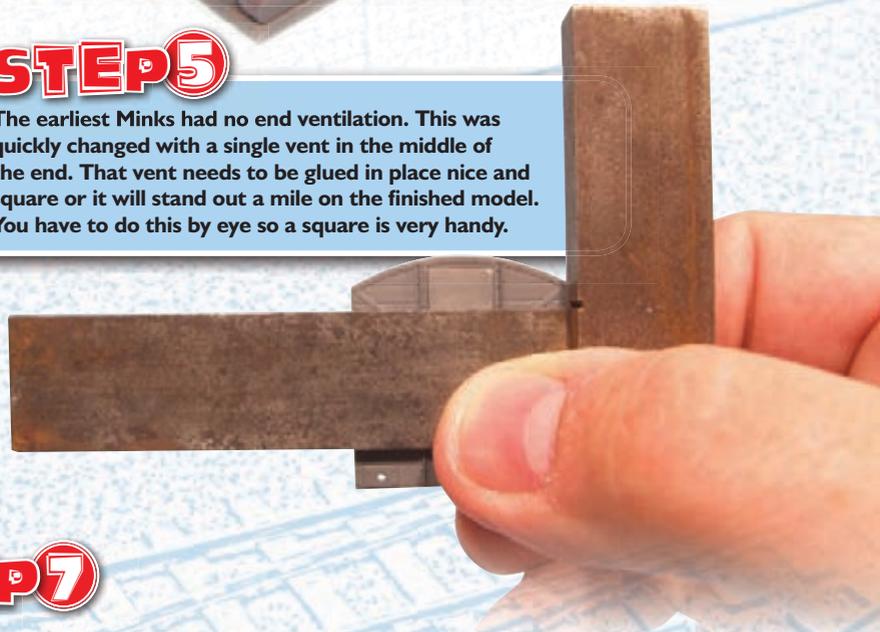
STEP 6



The alternative ends are supplied on sprues with three different sizes for different Minks and with two sprues per packet. Buying alternative height minks allows you to use up the leftovers.

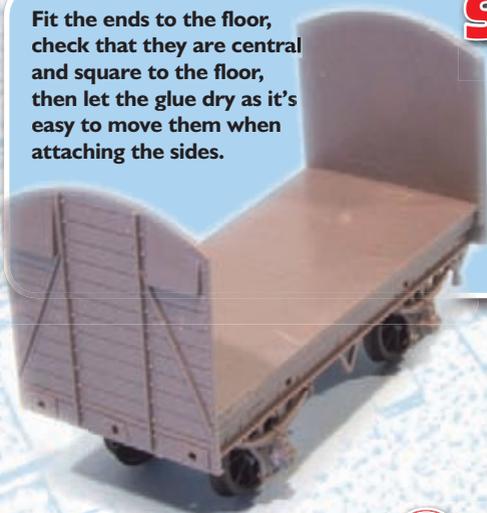
STEP 5

The earliest Minks had no end ventilation. This was quickly changed with a single vent in the middle of the end. That vent needs to be glued in place nice and square or it will stand out a mile on the finished model. You have to do this by eye so a square is very handy.



STEP 7

Fit the ends to the floor, check that they are central and square to the floor, then let the glue dry as it's easy to move them when attaching the sides.



STEP 8

The sides fit in with mitred corners. The fit is good but there are gaps between the floor and the sides. This isn't a problem, in fact by letting solvent fumes out this might be a good thing when you fix the roof in place.



STEP 9

The steel ballast weights fit in the floor and are held in place with a plastic cover. While adequate, I found a little more weight inside the van brought the overall mass up to the same as my other wagons. For good running, keeping this consistent over your layout is sensible.





STEP 10

On the left, the brake gear as supplied. On the right I've added cross shafts from plastic rod. It's not a difficult addition, but worth it. The only problem is that at the end, the shaft will get in the way of coupling supports so some improvisation might be in order depending on your preference in that area.



From left to right – early van with single hopper, later version with louvered ends and then final double hoppered version. If you want the full set then the earliest version had no end vent at all

STEP 11



The entire set of vans.

STEP 12



STEP 13

This isn't playing, it's testing. Running the part completed wagon over your layout, in whatever state of completion it's in, isn't a bad idea in case any adjustment is called for. Make sure the brake gear isn't rubbing on the wheels and that the bearings aren't pressing too hard on the pinpoints.

STEP 14

For added variety I've fitted a different set of couplings to each wagon. Left to right: Supplied tension locks, Bachmann, Spratt & Winkle.



STEP 15

From the underneath the same couplings. Three different mounts are supplied. For Bachmann I used the triangular ones but with the locating lugs which were filed smooth.

FINISHED: EARLY HOPPER VENT VAN



FINISHED: LOUVERED END VAN



FINISHED: LATE DOUBLE HOPPERED VENT VAN.



Churchill once said "He who fails to plan, plans to fail" and that very nearly summed up my efforts with this project. However, as you can see from the photos, all the obstacles were overcome, it's just that they needn't have been there in the first place.

In 1968, Darlington works rebuilt six 08 diesel shunters onto twin Master and Slave units for working Tinsley hump shunting yard. The locomotives would slowly push a string of wagons up to the top of the hump where they would be released one by one and directed onto the

correct trains by gravity.

The conversion mainly entailed removing the cab from the slave unit and adding weight to the pair, bringing them up to 120 tons. Initially the locomotives were coupled cab to cab but due to difficulties for the driver seeing the top of the hump, this changed to a nose to tail configuration.

Livery started as BR green with wasp stripes on the outer ends. Numbers were D4500-02. In 1973 they were repainted in blue and numbered 13 001 to 003. Hump shunting ceased in 1985 and all the locos

REFERENCES

The Diesel Shunter
by Colin J Marsden
Published by OPC
ISBN 978-0860-935797

were scrapped. The machines' lives were largely confined to the yard apart from trips to Darlington for overhaul. The most spectacular exception was probably a leg of the Sheffield Merrymaker charter in October 1978 when 13 003 pulled

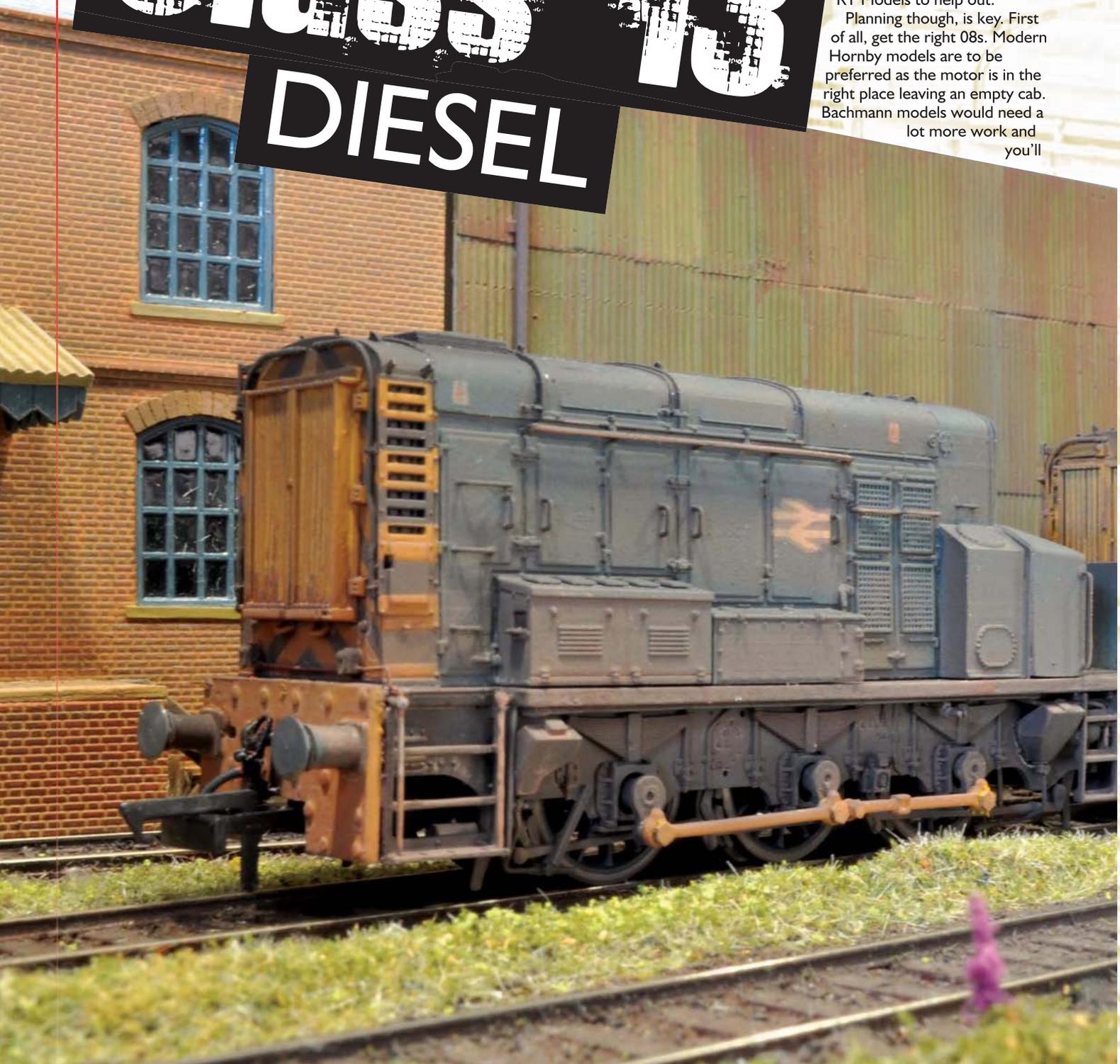
passengers for almost certainly the only time in this classe's life.

Basically, this is an odd-ball prototype that spent its life in a yard that would require an area approaching the size of a tennis court to model. Still, that's never stopped anyone wanting one, has it?

The conversion itself can be summed up simply – take a pair of 08s, hack the cab off one of them, replace this with a sloping top box and veranda. That's pretty much what BR did and they didn't even have the advantage of a set of parts by RT Models to help out.

Planning though, is key. First of all, get the right 08s. Modern Hornby models are to be preferred as the motor is in the right place leaving an empty cab. Bachmann models would need a lot more work and you'll

CLASS 13 DIESEL



probably end up with only one powered loco. The old Lima model suffered from the same problem. As for the Hornby-Dublo version, I don't know how the power unit is configured but suspect that your biggest problem will be facing the wrath of collectors the moment you attempt to defile a collectable model.

Next, get the right Hornby 08s. The real locomotives feature a myriad variety of boxes and lockers on the footplate, not all of which are appropriate for a class 13. I picked my models from the *Hornby Magazine* review pile which provided me a SERCO liveried version that was spot on and an Intercity version with cabinets over some of the grilles. Pulling these off left me with blank bonnet sides so I had to manufacture grilles by resin casting.

Even the livery requires some planning. My poor choice of loco was compounded by the discovery that all yellows are not the same. Intercity yellow ends are darker than SERCO ones and only the later matched the

Railmatch yellow I had to hand for the bufferbeams. Never mind, some careful

SUPPLIERS

RT Models

75 Yew Tree Close, Spring Gardens, Shrewsbury, SY1 2UR

www.rtmodels.co.uk

SGLP007 – Pair of Class 13 Buffer beams - £2.50 (Two pairs required)

SGLP008 – Class 13 conversion kit - £10.50

Alan Gibson

PO Box 597, Oldham, O11 9FQ

www.alangibsonworkshop.com

4903 – LMS & BR 16" head sprung buffers - £4.17 (two pairs required)

touching in by hand and a heavy weathering job hid all this.

I did manage to get one thing right. Even with a class of locos as small as this, there were livery variations. 13 002 and 3 retained wasp stripes on the front of the master loco and exhibited a matching set on the back of the veranda. 13 001 had a plain yellow nose and a blue veranda back – which is why that is the one I chose to model. If you chose to be different, mask the Hornby nose on the master unit and try a Fox Transfers set of stripes for the back of the slave.

The access enthusiasts

had to these engines throws up another problem. Photos tend to show nice three-quarter views but give very little detail on the gubbins in the middle. I've had to take guesses at the pipework arrangements based on the best information to hand. The result looks reasonable but I'm sure someone out there has the information for a perfect model.

In the end, watching the finished locomotive trundling along the track, it all looks very nice indeed. I didn't worry about liming the two units electrically, the Hornby mechanism is so good that it's probably unnecessary and certainly would be fiddly to achieve. It's a bit like a diesel powered Garratt with two sets of rods moving at the same rate. I know I'll never build the correct layout for my model to run on, but that won't stop it taking a trip on the ones I have. Build time was doubled by picking the wrong donor loco for the slave unit, but then learning from my mistakes is why you are reading this isn't it?



Raw materials for the conversion, a couple of Hornby 08s, the RT Models kit and some Gibson 162 head buffers.



I used one body to provide a pattern for the grilles. Plasticard and Blu-tack provided a well into which mould making compound was poured. This was then used to produce an extra set of grilles in resin. (*Hornby Magazine* July 2012 goes into resin casting in more detail).



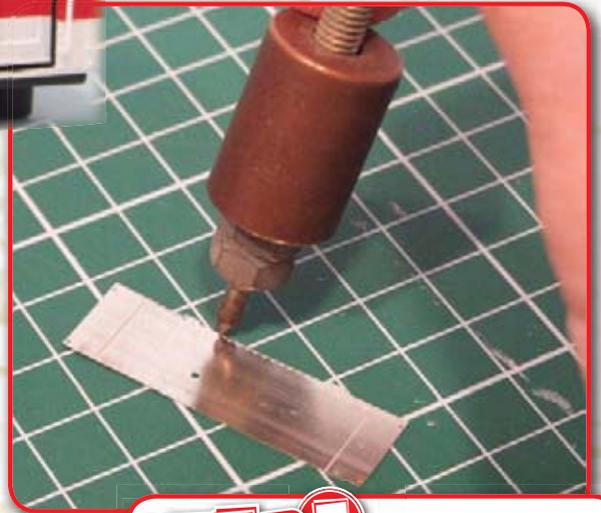
STEP 3

The new grilles were set into a hole cut in the side of the slave loco. I tried to ensure all the cuts followed panel lines so the joins weren't too obvious. Of course, if you pick the right donor loco in the first place, you save all this work...



STEP 6

Both photos and plans show a pipe or conduit emerging from the back of the hood. Using a washer, tiny nut and bit of wire, I mocked something up that looks about right. It's a bodge but for a working model, looks OK.



STEP 7

The back of the footplate has a small veranda. This is bent up from a metal part which needs its rivets pushing out first. A drop hammer or small nail will do this. Once complete, the part is soldered to the metal floor using the locating slots and tabs and then glued to the chassis making sure everything is central and square, but only after the bufferbeam is fitted.



STEP 10

The models ready for paint. I don't like to fit the buffer heads at this stage. You'll notice that on the inner ends of the locos the mounting holes for the Hornby screw couplings are used.



Once the paint is dry, buffer heads are superglued in place – I couldn't see a way of making the springing work on this model and don't see the need with a tension lock coupling anyway. Vacuum pipes are from the extras packet that came with the locomotives.



STEP 11

STEP 12

It saves a lot of effort if the wasp strips are masked at the ends of the locos before painting as Hornby did a far neater job than anyone but an expert can hope to achieve. The cab windows have been masked with a drop of PVA glue, effective and easily removed with a cocktail stick when required.

STEP 4

The cab should slide upwards away from the body. Mine took a bit of waggling but there doesn't seem to be any glue holding it in place. The excellent cab interior can then be pushed out. Cut the loco down the back of the hood, where the cab front used to be.

STEP 5

The nickel hood back piece should be tried in position. I found the end of the motor block stuck out about 2mm preventing it sitting flush against the hood back, so trimmed this with a big file. Blow the swarf away regularly while you work so none of it creeps back into the mechanism. The lump below the motor shaft is also a tight fit in the resin 'desk' but it's easier to hollow this out a bit more with a file than modify the metal chassis parts further.

STEP 8

The Hornby front bufferbeam is filed flat in preparation for the new whitmetal item to be fitted. Make sure you pick the right beam as front and back are different.

STEP 9

If you are using tension lock couplings, holes need to be made to allow these to pass through the buffer beams. A piercing saw makes quick work of this although a file would be nearly as easy. Use the NEM pockets as guides for the height and position of the gap.

STEP 13

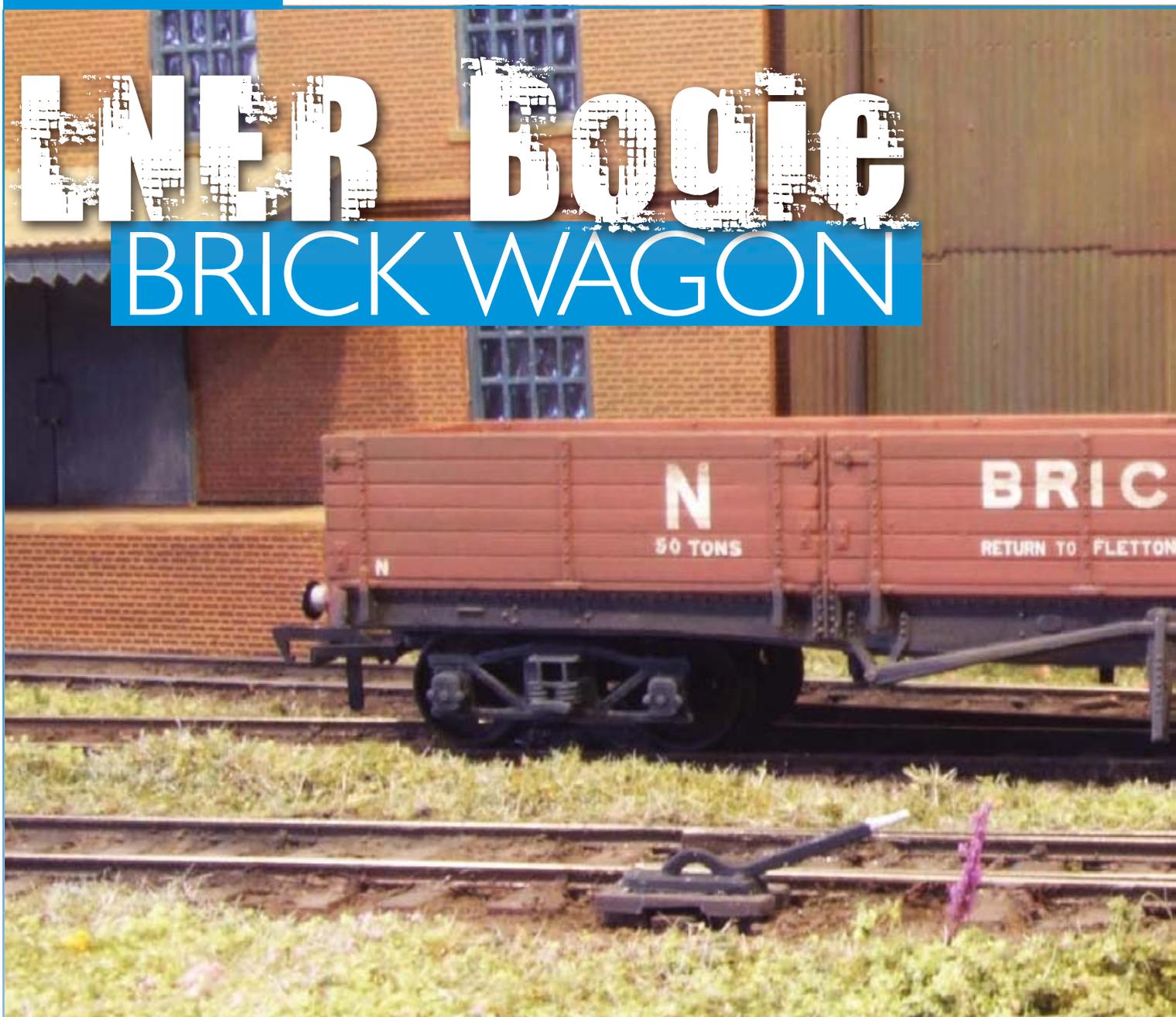
Master and slave units are connected by a fat cable from bufferbeam to veranda and a vacuum pipe. Photos are scarce of this area so some electrical wire was glued to the master loco in the right places.

STEP 14

The other ends of the wires go through the bufferbeam, there are holes for this, and the back of the veranda. This wire was glued to the back wall and lead to the floor. It's another area I couldn't find a picture for but my attempt is a reasonable guess. Coupling is achieved with the original Hornby item.

LNBR BOGIE

BRICK WAGON



I'd like to say that the subject of this Parker's Guide, a bogie brick wagon, is something the ready-to-run manufacturers wouldn't bother with. However, older modellers will immediately take me to task and point out that Triang produced one in 1959. Someone will then remember that the catalogue number was R219 and it remained in production until 1967. They still turn up on second-hand stalls up and down the country too. Those with even longer memories will recall the Trix Twin version in printed tinplate from 1951.

All this is fine but even though this was one of the company's more realistic products, 50 year old models don't stand up to the standards of today's rolling stock – those steam roller wheels won't like your modern trackwork much for example and the detailing is a bit cruder than we now expect. Some dealers will try still and charge premium prices for what was one of the less-popular items in the range

due to its rarity though, so this makes kitbuilding even more appealing, especially when the components are very reasonably priced.

A little history of the prototype; the Great Northern built the first batch of 25 50-ton brick wagons in 1921 to transport the London Brick Company's products from Peterborough to the capital.

A second batch with minor detail changes arrived courtesy of the LNER in 1930. They were still seen in the 1970s

as internal user wagons at a Vauxhall car plant. In the harvest season apparently, they were also used to move vegetables. That must have been quite a sight!

This isn't a difficult kit to assemble, it just requires a bit more care than normal. At a couple of points, while assembling

MORE INFORMATION

A Pictorial Record of LNER wagons - by Peter Tatlow
Published by OPC

Out of print at the moment but turns up regularly on the second hand market.

the bogies and putting the body ends on, it pays to let the glue harden fully so the joint doesn't move or fall apart as you perform the next step. This is anathema to anyone who likes to rush through a model, but I can speak from experience when I say taking your time will result in a better

wagon.

At the moment, my wagon runs without a load. It appears that in the prototype, bricks would have been stacked by hand with great efforts being made to fill the wagon so the load could not move. This might mean stacking them on their sides to plug any gaps. To represent this, I suggest scribing a piece of plastic sheet to show the visible faces. Lightly roughen the surface to give it a bit of texture and paint in a suitable bricky colour for your area. It appears that the loading was sufficiently tight that no other packing material was required.

KIT FROM

Parkside Dundas
Millie Street, Kirkcaldy, Fife,
Scotland, KY1 2NL

www.parkside Dundas.co.uk

**PC23 LNER Bogie
Brick Wagon - £11.30**



This isn't one of Parkside's more modern kits, hence the price, the downside is that there is a little more flash than normal, but you do get plenty of parts in the bag, not least four axles of Romford wheels plus bearings.



Starting with the bogies, glue in the bearings with a little liquid glue. Make sure the top hat brim is flat against the top of the hole all the way around. Next carry out a dry run to make sure the stretcher fits the socket on each side frame and goes all the way into the moulded ridge. I had to trim mine a little and file the horizontal surface for a good fit. Once happy, glue one side and then put it aside to harden before adding the other side and trapping the wheels. Make sure all the wheels sit on a flat surface (piece of glass or an old CD) before the second joint hardens.



STEP 2

The pivot pin goes upward through the bogie and into another stretcher that will be attached to the wagon. This seemed a bit tight to me, so I opened the holes out with a tapered reamer. If you don't have one of these, a round needle file works just as well. A tiny little slop in the bogie hole isn't a bad thing as it will allow the wagon to ride over less than perfect track – not that this is a problem for me of course! To fit the pin, a drop of glue through the hole in the top stretcher works well. Just a drop though as it could easily seep through and glue the pivot up solid.

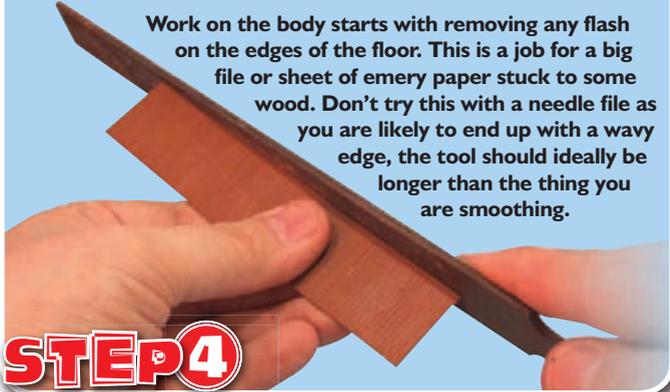
Couplings are supplied in the kit but I prefer Bachmann mini versions whose metal hooks work better than the purely plastic kit versions. Dispensing with the NEM pockets and filing the bottom of the tails a touch makes them a pretty good match for the height of a Hornby coupling. Superglue is better for the joint to the tongue sticking out from the bogie than plastic glue, as the later doesn't seem to adhere to the soapy material the couplings are made from.



STEP 3

STEP 5

The ends are glued to the floor and left to dry. Make sure they are central and at right angles to the floor and resting on the ledges behind the buffer beams. Care at this stage makes the rest of the job a lot easier. Rush it and you'll regret it, something I've learned through experience.



Work on the body starts with removing any flash on the edges of the floor. This is a job for a big file or sheet of emery paper stuck to some wood. Don't try this with a needle file as you are likely to end up with a wavy edge, the tool should ideally be longer than the thing you are smoothing.

STEP 4

STEP 6



The sides overlap the ends and should sit nicely in the notches moulded in to them. While the glue joint is soft, check the floor is flat with a rule held diagonally across the floor. Check this is flat too, you can normally remove any problems with a twist in the opposite direction using gentle finger pressure.



The solebars have odd little projections from the hinges that have to be nicked off with a knife. The long file is needed to clean the top edge too.

STEP 7

A tiny bit needs to be trimmed off one end of both solebars to get them to fit perfectly between the ends. The positions for the bogies are nice and obvious in this picture and while the wagon was upside down I fitted them in place.



STEP 8



There are two brake levers per side and they are handed. The longer, cranked one goes on the right. There is a lump on the back of the vertical part which had to be trimmed off to ensure it sat firmly against the solebar.

STEP 9



STEP 10

Under the wagon the vacuum cylinders are fitted followed by the fiddly and slightly fragile cross bars. If they break, and it's easy to do when cleaning the parts where they join the sprue, I have been known to replace with microstrip and no one ever notices. There's plenty of space under here for some lead weight, in fact it's tempting to add too much.



STEP 11

No vacuum pipes are supplied in the kit so I found a set of whitmetal ones to fit on the ends. These sort of bits are worth stocking up with when you are at an exhibition as they often come in handy.



STEP 12

The model has been painted with Humbrol Brick red above the solebars and matt black below. Brick red isn't a bad match for bauxite, especially after a light weathering such as the wash of dark brown I gave the finished model. Transfers came from PC Models – you only get one 'Brick' word per sheet so you might want to shop around if you fancy building a rake.



STEP 13

Once painted I added the buffer heads. Plastic versions are supplied but these need quite a bit of flash cleaning from them so I used some metal versions from Slater's.

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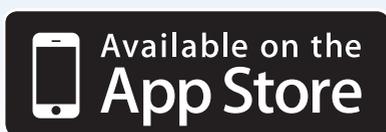
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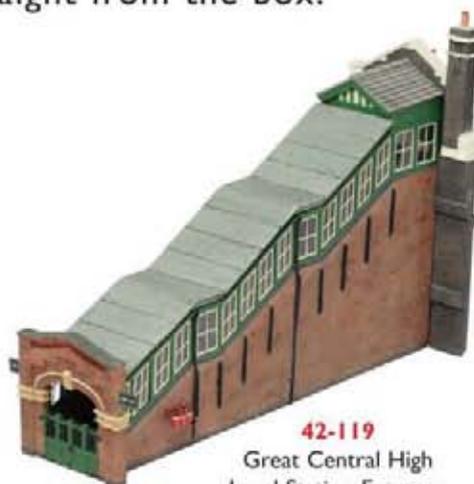
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