CONNOISSEUR MODELS

- 0 Gauge -

Great Central Railway

Diagram 17

10 Ton Sliding Door Van

Prototype. These were the last design of GCR van built from 1912 onwards. They were designated diagram 17 and nearly 1500 were built with a number going to the CLC. They were a very distinctive large bodied van and lasted well into BR days.

Kit. Main construction is straightforward with the thin sliding door being fabricated from etchings. W irons are etched and the roof is pre-formed.

Wheels, 3'1", 8 Split Spoke (7120) or 8 Spoke (7121) are required to complete, Available from Slater's, Temple Road, Matlock Bath, Derbyshire, DE4 3PG, Telephone 01629 583993.

Connoisseur Models, 33 Grampian Road, Penfields, Stourbridge, DY8 4UE, Telephone 01384 371418

GENERAL INSTRUCTIONS

Please read this section carefully, especially if this is your first etched brass kit. Many modellers fight shy of working in this medium, but the basic skills are relatively easy to acquire. Once you've learned how to form and solder brass, you'll find all kinds of modelling possibilities will open up for you.

Assembling an etched kit involves exactly the same skills that a scratchbuilder uses – the only difference is that the cutting out of the parts is already done for you. Some filing and trimming will, however, be necessary from time to time. Where this is the case, I have highlighted it in the instructions.

The main skill to master is soldering and I would recommend a Weller 40 Watt soldering iron. This has a 6mm diameter, removable copper bit. The bit is shaped like a screwdriver and has a bright coating of solder (tinned). This combination of iron and bit shape is ideal for running fillet joints and has a good reserve of heat, that is necessary for soldering small parts on to large components. Note the shape and condition of a new bit, as this won't last long and will need restoring back to this condition.

It is important to keep the bit clean and in good condition as you work. Get a soldering iron stand containing a damp sponge; old oxidized solder is wiped off on this before picking up fresh solder for each joint. If you haven't made a joint for some time you may find that a hard black crust has formed on the bit. Remove this with a brass wire brush (suede brush) and then feed some multicore solder onto each side of the bit to restore a bright surface (referred to as wetting or tinning the bit). After about 8 hours use you will find the bit is in poor condition, with holes and a ragged edge. File the bit back to its original shape using a hand bastard file and then polish the surfaces on emery cloth. Coat the bit with Fluxite Soldering Paste (traditionally used by plumbers) and this will prevent the bare copper oxidizing as the iron heats up. Then feed multicore solder onto the bit to form a generous coating and leave to bubble away for a couple of minutes before wiping excess off to give a bit almost as good as new.

A smaller Antex 25 Watt iron with a 3.2mm screwdriver bit is very useful for small assemblies and detail work such as handrails, but will have insufficient heat reserve for main assembly work. The Antex has a plated iron bit, after a little use with 145° solder a grey oxide appears on the bit that will prevent you from picking up the solder. Touch the bit to some multicore solder and it will flash over the bit, wetting it so that you can continue picking up 145° solder. I have found no problems with mixing the two solders in this way.

I use 145° solder for virtually all assembly work. I prefer it in wire form but it is also produced in stick form by Carrs. I find that its lower working temperature helps to give a quick clean joint. Limiting the build up of heat in components, which may cause distortion. I find that I can hold parts together with my finger ends and make a joint before heat reaches my fingers or other etched parts drop off.

I use 60/40, tin/lead, fluxed multicore electrical solder (melting point about 190°) mainly to keep the iron bits in good condition. As it gives a slightly stronger joint than 145° I sometimes use it for small spot joints on handrail wire, lamp brackets etc, but still use extra liquid flux.

For all brass and nickel silver work I use Carrs green label liquid flux. You will soon get the feel for how much to use but more problems are caused by too little flux than too much.

Before soldering components together, thoroughly clean both surfaces along the join line with a glass fibre burnishing brush. Using your tweezers or a knife blade etc, hold the parts together in the correct position and, with an old paintbrush, run some flux along the area to be joined. Still keeping the parts correctly aligned, pick up a small quantity of solder on the tip of your iron and carry it to the joint (unlike electrical soldering, when you feed solder into the joint). Hold the iron against the joint just long enough for the solder to flash between the parts. Don't let go of the parts until the solder has cooled – this takes from five to ten seconds. To run a fillet of solder along a joint, wait until the solder flashes between the parts and then pull the molten solder along

the joint with the iron tip. Don't load the iron tip with a lot of extra solder, but work the joint in 1" lengths, bringing in small quantities of solder. Brass is a very forgiving material and if you get something out of alignment, use heat from the iron to desolder the joint before starting again. For complicated assemblies, it is a good idea to only tack solder parts together. You can then make adjustments by desoldering until you are happy with the location of parts and then solder solid.

When you need to laminate two or more layers of brass together, align the parts and carefully clamp them together, either in the vice or by holding them with miniature crocodile clips. Run flux around the edges, and then go around with the soldering iron. Clean up thoroughly afterwards.

To fit small parts and overlays on to a larger assembly, such as strapping to a wagon side, when you need to prevent finely detailed areas such as planking becoming clogged up with solder. Tin the back of the small component first, then hold in place on the model and apply flux. Carefully wipe the tip of your iron on a sponge to remove any solder from it (dry iron), and then touch it against the parts to be joined. After a few seconds you'll see molten solder bubbling from the edges. Remove the iron, still holding the parts in place, and allow the joint to cool. An alternative is to use solder paint (I would recommend Carrs 188 solder paste). As the name suggests, this is a flux and solder in one. Simply apply a thin coat of solder paint to the back of the component instead of tinning. Still apply a small amount of liquid flux before you solder the part into place.

Any surplus solder should be removed using a craft knife, I find No 10 curved scalpel blades ideal, then burnish clean with a glass fibre brush. With practice, you'll learn how to use the minimum amount of solder to do the job. Flux is corrosive so, after each soldering session, give your model a good scrub with washing up liquid or Jif. After a day or two, any remaining flux residues will show as a green film, which should be washed away.

To cut parts from the fret, use a sharp Stanley knife on a piece of hardboard or a pointed scalpel blade on a block of softwood. Remove tags and burrs with a fine file.

Three-dimensional parts are formed by folding. On an etched brass kit, the fold lines are normally half-etched on the inside of the fold. You'll be able to fold most parts using smooth-jawed pliers. For longer parts folding bars are desirable.

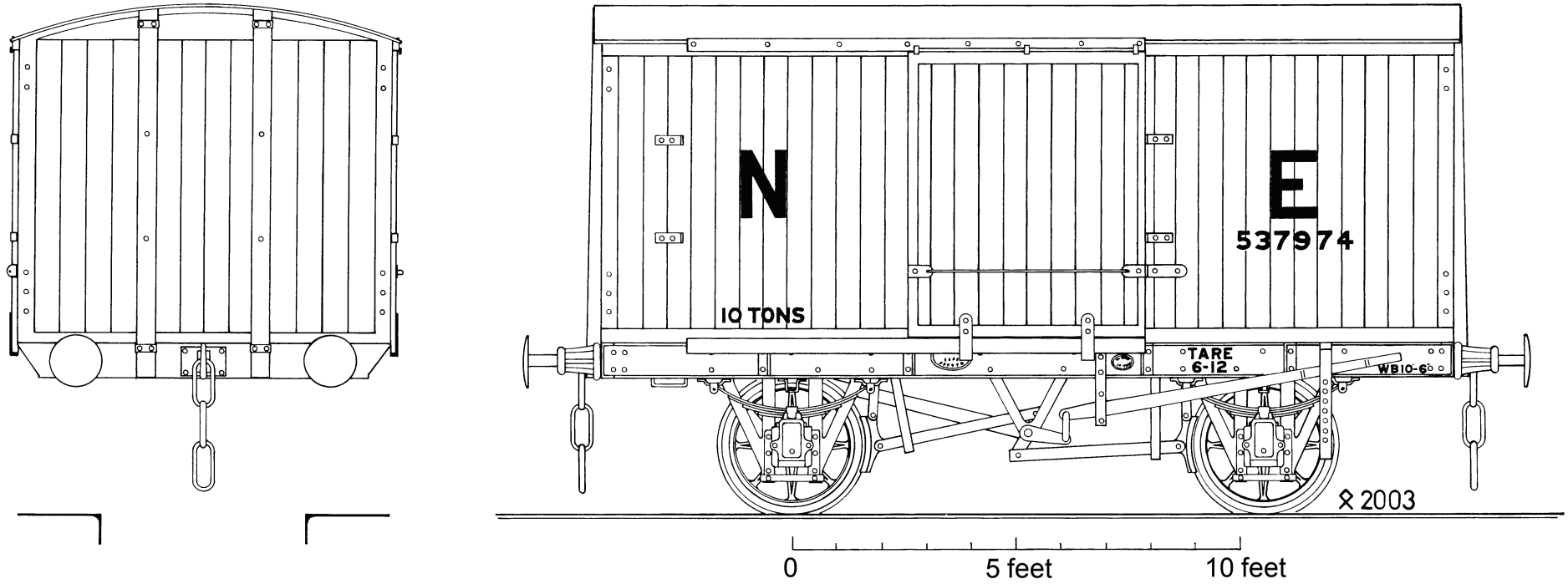
Other useful tools include a bench vice, a good pair of tweezers, a set of Swiss files (get a full set of cheap ones and then buy quality replacements for the three that you use the most), a pin vice with a selection of drills from 0.5mm to 2.1mm plus a few larger sizes that you use regularly (2.6mm for axle bearings etc), some square-nosed pliers and some very pointed-nosed ones, preferably with smooth jaws. Buy cheap tools first and duplicate the most used ones with quality.

Try to complete all high-temperature soldering before attaching any of the cast whitemetal parts. These can be attached with two-part epoxy resin such as Araldite Rapid. Ensure the surfaces to be glued are clean and free of grease.

A better alternative is to solder your white metal castings using Carrs 70 degree low melt solder and Carrs red label white metal flux. The iron should be run at a much lower heat so that you do not melt the castings. I have a domestic light dimmer switch and plug socket fixed to a piece of wood, wired up with a lead and 3 amp mains plug to the input side of the dimmer switch and the output of the dimmer switch into the plug socket (remember to continue the earth). Plug your 40 Watt iron (25 Watt iron won't work) with a clean and freshly tinned bit into this and experiment with adjusting the switch until you find the range of temperature at which the solder melts, but a scrap casting does not. **Note** as the iron is running at a lower voltage it will take longer to heat up, so when you think the adjustment is correct do check a few minutes later on another scrap casting to see that it doesn't melt. Then scribe a mark on the switch knob to indicate this position.

When attaching white metal fittings to brass the surface of the brass must be tinned with 145° solder, to allow the solder to grip. The surface of the casting at the joint should be burnished bright. The casting can then be soldered into place with 70° solder and fillets of solder run into any gaps with no risk of melting the casting.

Great Central Railway 10 Ton Sliding Door Van



Livery. GCR bodywork-grey, solebars and running gear-black, roof-white or light grey lead, lettering-white, large G & C in about the same position as N & E on drawing.

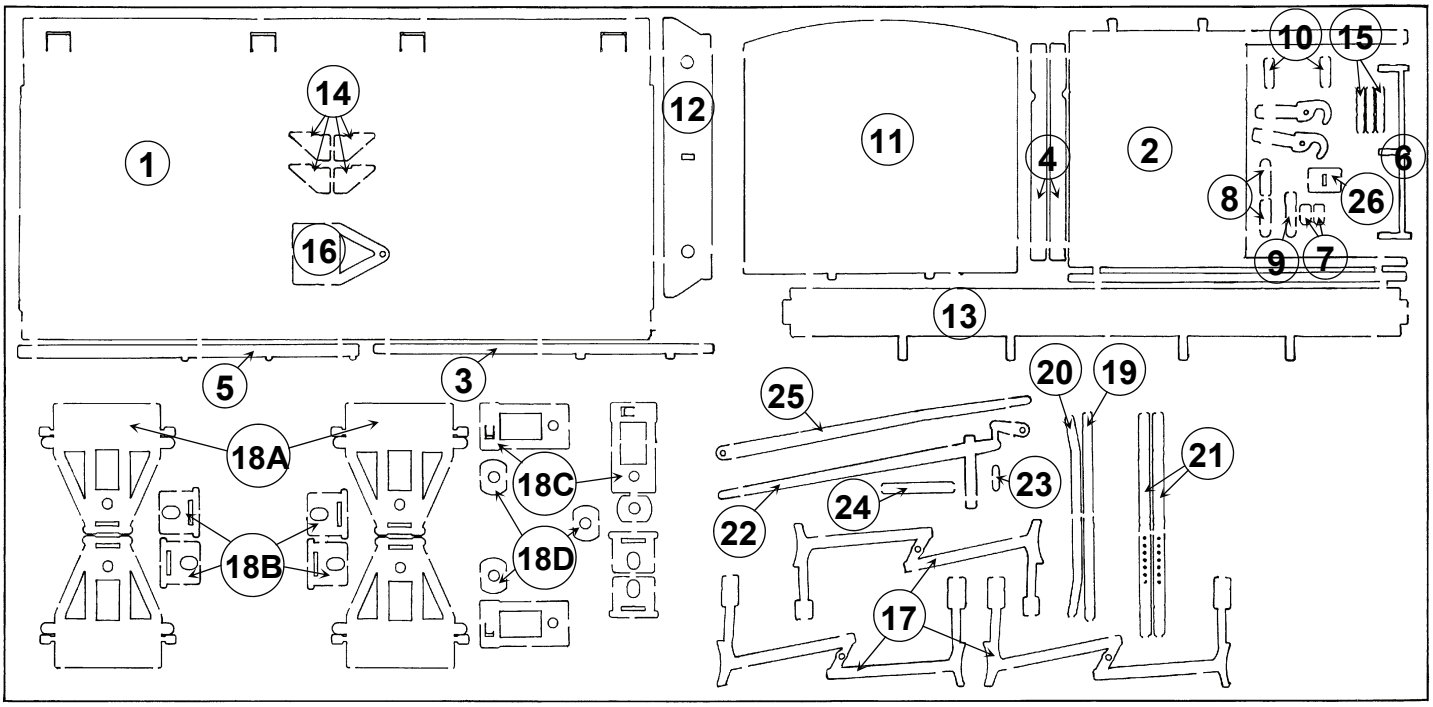
Livery. LNER bodywork-grey, solebars and running gear-black, roof-light grey lead, lettering-white, pre 1936 as drawing, post 1936 'NE' were reduced in size to 4", placed over the capacity in 3" which in turn was above the running number in 4". All to the bottom left hand corner with 3" spaces between lines. The tare weight was shown in 3" letters on the bottom right hand corner.

Livery. BR bodywork-light grey, solebars and running gear-black, roof-grey to very dirty, lettering-white on black patch with number prefixed with E below 10T to the bottom L/H corner, Tare R/H corner.

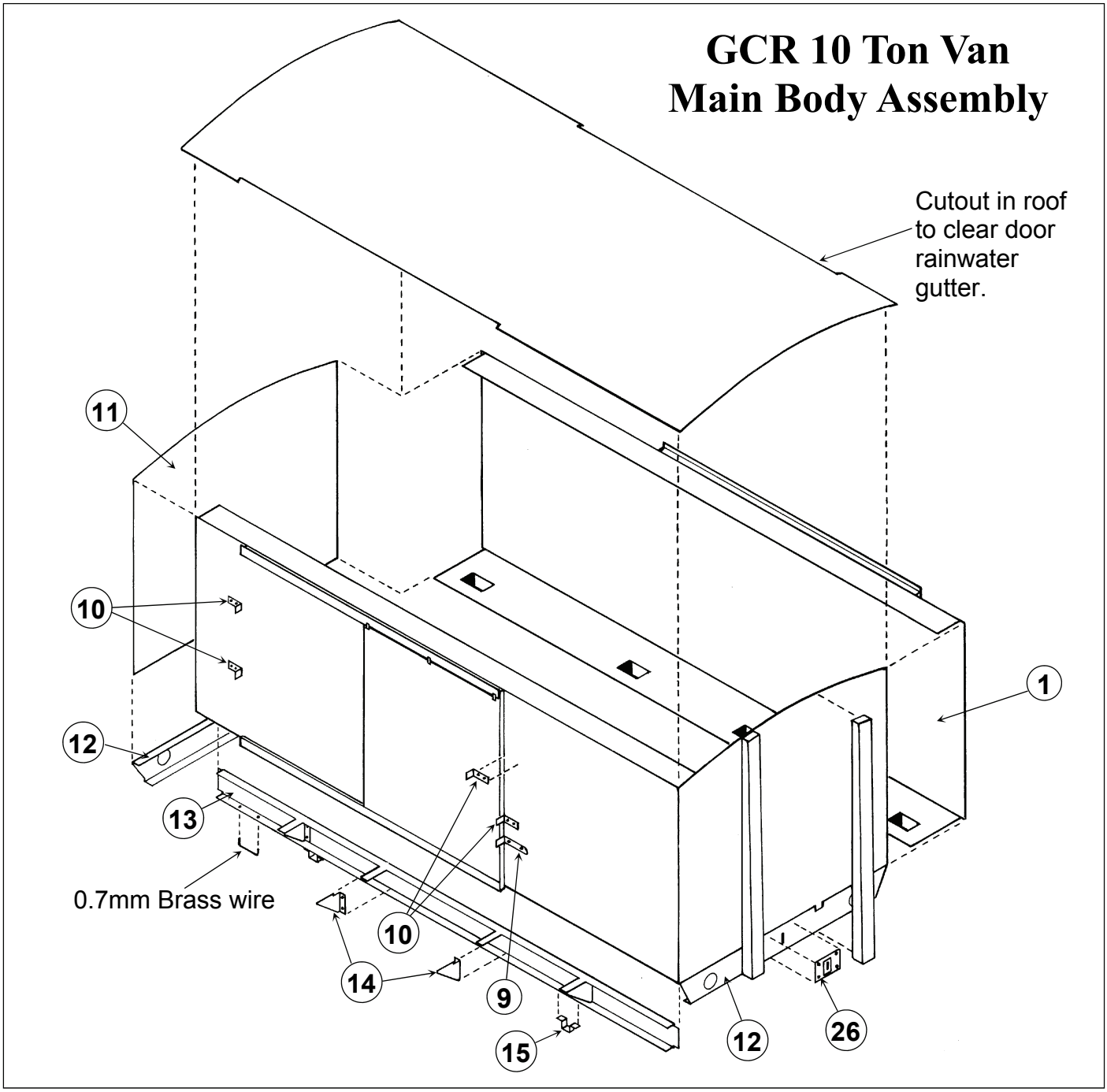
Some sample running numbers are 537974, 537853, 542495, 542795. For GCR numbers subtract 500000 for BR numbers prefix with E.

Transfers for LNER & BR lettering is available from the Historical Model Railway Society, Brian Webb *(volunteer sales 0fficer),* 8 Gilpin Green, Harpenden, Herts AL5 5NR *(SAE for list & order form)* or stocked by some specialist retailers. These are Pressfix type and you will require sheet 12 LNER goods vehicles or sheet 25 BR revenue wagon.

For waterslide type, Fox Transfers, 138 Main St, Markfield, Leicestershire, LE67 9UX, Tel 01530 242801.



GCR 10 Ton Van
Main Body Assembly



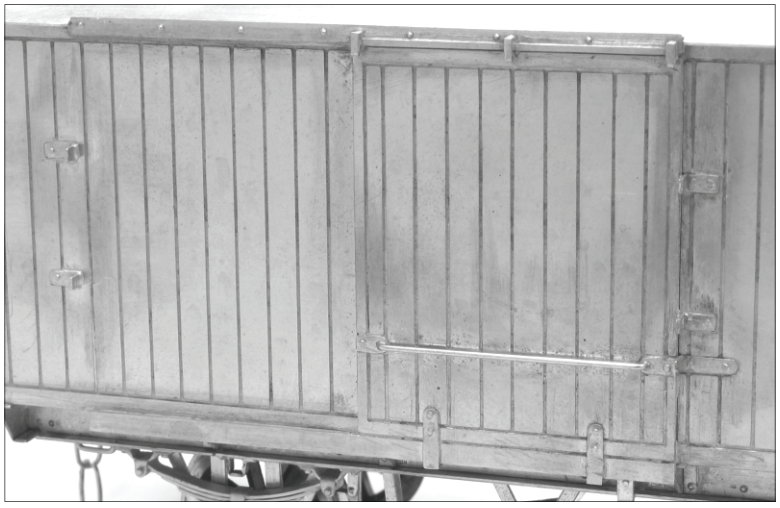
GREAT CENTRAL RAILWAY 10 Ton VAN ASSEMBLY INSTRUCTIONS

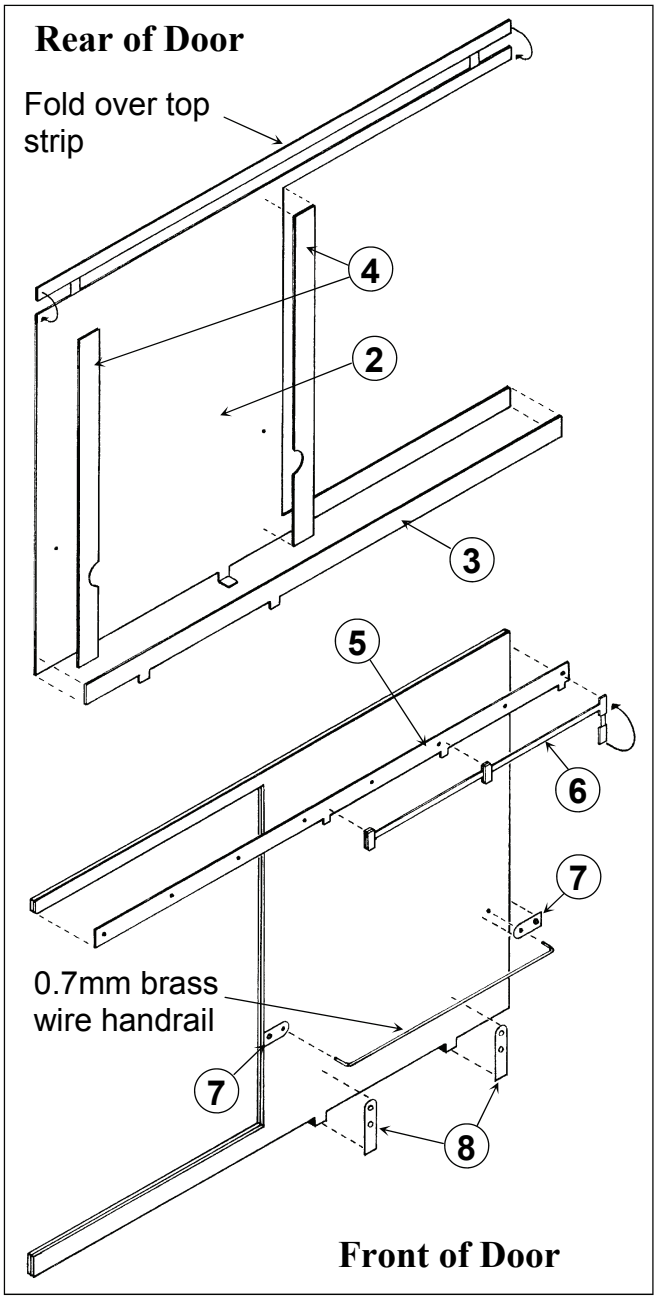
1. Remove the sides (parts 1) from the fret. Then remove and store safely the parts located in the doorways. Fold the top and bottom of the sides through 90 degrees and then emboss the five bolt heads at each end. These bolt heads are can be embossed using a scriber, with the point rounded off slightly on an oilstone. Place the part, face down, onto a block of softwood and then press the scriber point firmly down into the half etched hole, this may distort the part slightly, so gently correct this by bending back with finger and thumb pressure. If you have a rivet forming tool, particularly of the drop weight type, you should find this ideal but you may find that some of the half etched holes are a little large for this to work properly and you may be better pushing the spike into the hole with finger pressure rather than using the drop weight.

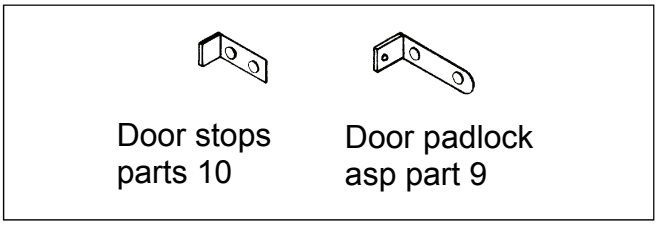
1. I prefer to make up the doors, apply detail and fit to the sides before assembling the main components. Take the doors (parts 2) fold over the top strip and solder at the rear. Fold through 90 degrees the bottom of the runners and then fit the bottom strip (part 3). Fit the two side strips (parts 4) and then work around all edges with a flat file blending the thickening strips into the main door component.

3. Emboss bolt heads and then fit the top strip (part 5) to the front of the door. Fold over and solder the three lugs on the runner track strip (part 6). Then solder to the top strip. Add the door handrail detail plates (parts 7). Bend a length of 0.7mm wire and solder through the holes to form the handrail. Add the bottom runner detail plates (parts 8). The position of these detail overlays is marked by an etched outline.

4. Solder the door assembly to the side. The top and bottom door runner strips should project above and below the side (refer to main drawing for help with positioning). Fold up and fit the door padlock asp (part 9) and the two R/H doorstops (parts 10) next to the door. I fitted the other two L/H doorstops towards the end of assembly of the van to avoid them being bent during handling.







5. Emboss bolt heads on the van ends (parts 11) and then assemble the ends and sides into the body of the van. I soldered two sides to one end first and then fitted the second side. Try to get the bottom of the end flush with the bottoms of the side. Take care to ensure that the body is square and not twisted. Tack solder together first and then work around each corner joint, soldering about 1/3 of the joint and checking that the body is not twisted. Once happy with the assembly dress the outside of each corner joint with a flat file to blend the side into the end and give a crisp square corner.

6. Fold up the buffer beams (parts 12) and fit underneath the van flush with the van ends. Emboss the bolt heads on the solebars (parts 13) and then bend the top and bottom edges through 90 degrees. Fit a grab handle (hooking point for horse shunting) made from 0.7mm brass wire to the bottom edge of each solebar. If you wish solder wagon plates into place now or paint separately and glue into place after painting the van. Fold down the four tabs at the bottom of each side to form a positive location for the back of the solebars. Fit the solebars (a little filing at each end may be necessary to get a snug fit at each buffer beam) but try not to solder to the outer tabs as these need bending back into the floor once the solebar is solid (to maintain clearance for sprung buffers).

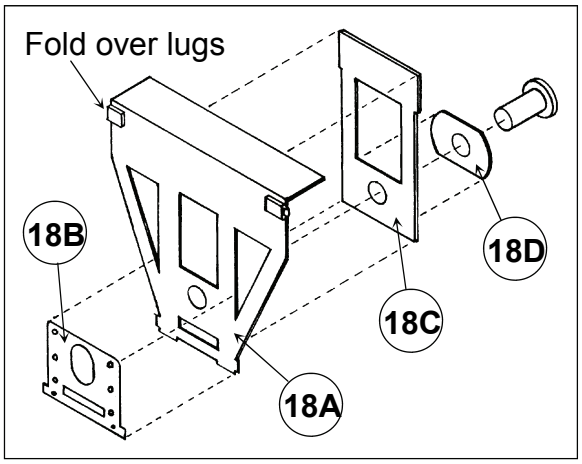
7. Now take the triangular body supports (parts 14) and emboss the bolt heads, fold through 90 degrees and solder into place (note that they are handed each side of the centre line). Take the spring stops (parts 15) bend as shown and solder into the recesses in the underside of the solebar.

Spring stop part 15 & horse hooking point

8. Fold up the vee hangers (parts 16) and fit hard against the back of the solebar. There are etched marks to help you locate the vee hangers on the centre line of the van.

9. Laminate together the three parts of the brake blocks and push rods (parts 17). Pass a length of 1.6mm brass rod through one vee then through the centre of the brake block assembly and then through the second vee hanger. Solder the rod at each vee hanger but leave a short length of rod projecting through each vee hanger. The brake levers will be fitted to this projecting rod later and then the ends can be trimmed back and squared off. Leave the brake block assembly lose on the rod.

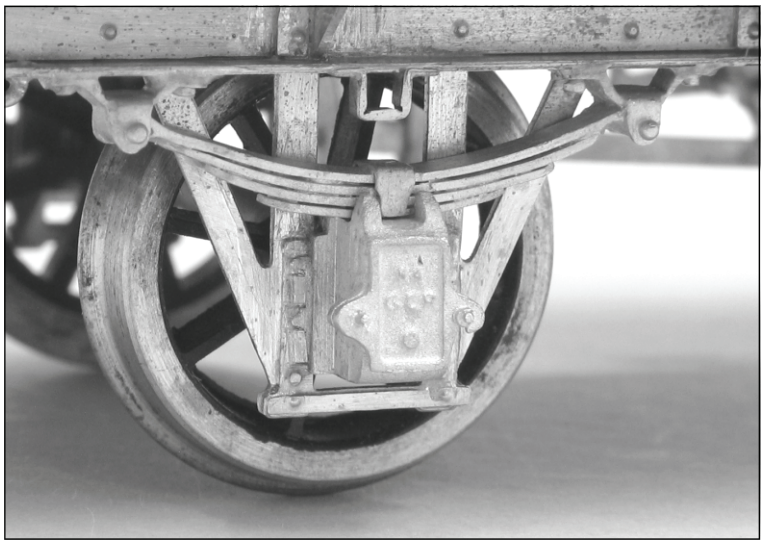
10. Make up the etched W irons (parts 18). My original intention was to improve the appearance of the wagon by having simple etched W irons with separate cast axle box and spring rather than a one piece casting of over scale thickness. Then as I was designing the W irons it occurred to me that with a few additions and modifications it would be possible to make them so that those who wished to could modify them for a fully sprung wagon. First I will describe how to make up the W irons as intended to give a rigid wagon (I expect that this is what most customers will wish to do).



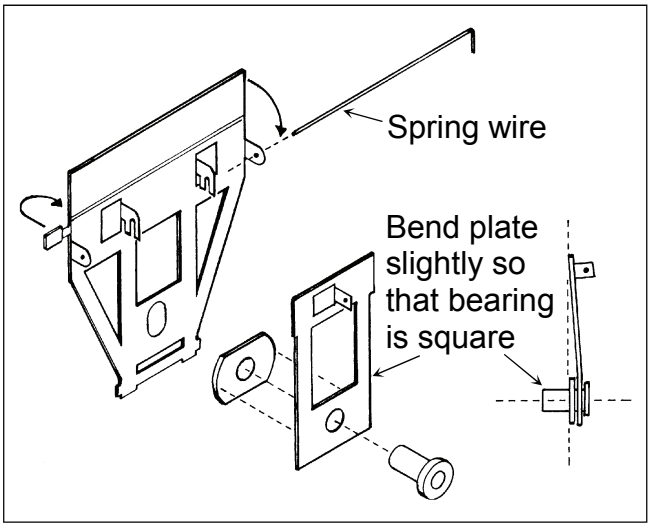
Remove the W iron (part 18A) from the fret and note that the plain side is the outside face and the side with half etched fold lines is the inside face. Push out the two bolt heads and then laminate the detail overlay (part 18B) to the outside face. Fold the top of the W iron through 90 degrees to give a flat surface for mounting onto the underside of the van. Fit the strengthening plate (part 18C) to the rear face of the W iron. Make sure that the axle bearing holes line up. Then fit spacing washer (part 18D) over the bearing hole. Make sure that a brass axle bearing will fit snug and square into the hole (gently open out with a round file if necessary). Fold over the two spacing lugs and solder to the front face of the W iron (these are to space the W iron slightly away from the back of the solebar).

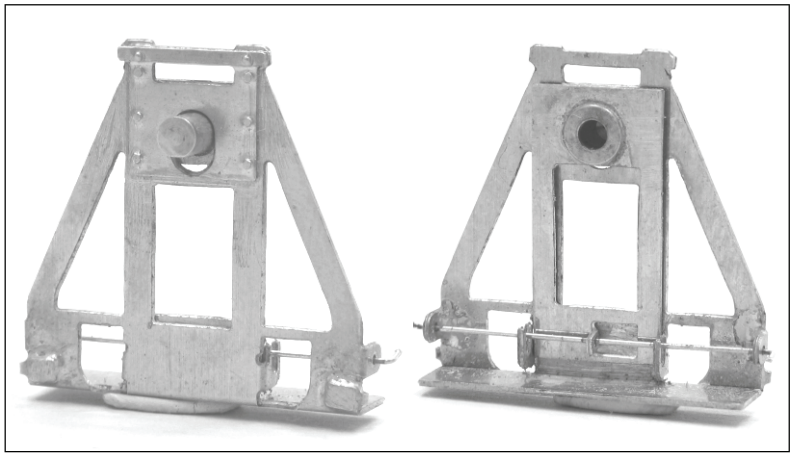
Fit axle bearings (unsoldered) into W irons and with a wheel set between fit the W irons between solebars. I would recommend temporarily fitting each W iron with a single tack solder joint so that adjustments can be made if required. The brake blocks will help to position the wheel sets at the correct distance apart and check that the axles are parallel and square to the wagon ends. Place the wagon on a flat surface and check that the wagon sits without rocking. If you have built the body slightly twisted you may have to adjust two of the W irons with a piece of shim brass between its base and the underside of the wagon. Once you are happy solder the base of the W iron solid to the underside of the van. Then place the wagon back onto a flat surface and solder the bearings into the W irons. Then solder the brakes into place so that they are just clear of the wheels.

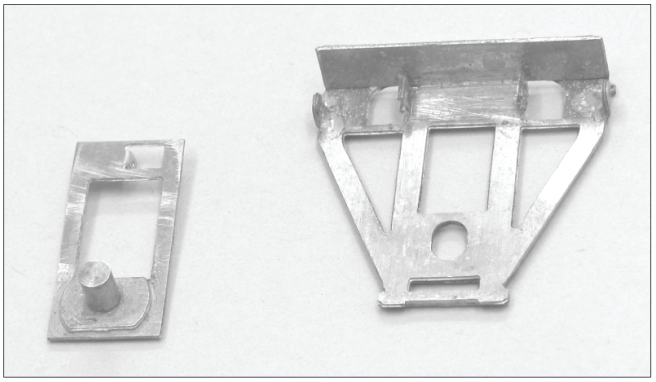
I then fitted the cast axle box and spring. I preferred to fit the axle boxes first and then the springs. There is just enough clearance to twist and ease the spring into place but if it is a tight fit don't force it but file a little off the bottom strap of the spring so that it will twist into place. It would appear more logical to fit the spring first and then the axle box and of course you can do it this way if you wish but I found that the axle box automatically positions itself and then this helps to centre the spring. Fitting the castings now means that you must take care not to melt them when you complete the brake gear but access would be difficult if fitted later.



If you would like to try springing the W irons then this modification was not intended as part of the kit but as something of an optional extra. First file the axle-bearing hole on the W iron (part 18A) into an oval hole that the bearing will slide freely in (half etched marks to help with this). Then solder the detail overlay (part 18B) to the front face but ensure that the oval hole is still clear. Then fold out at 90 degrees the four lugs at the top of the W iron and fold the top mounting plate through 90 degrees and solder to the front face the two spacing lugs.





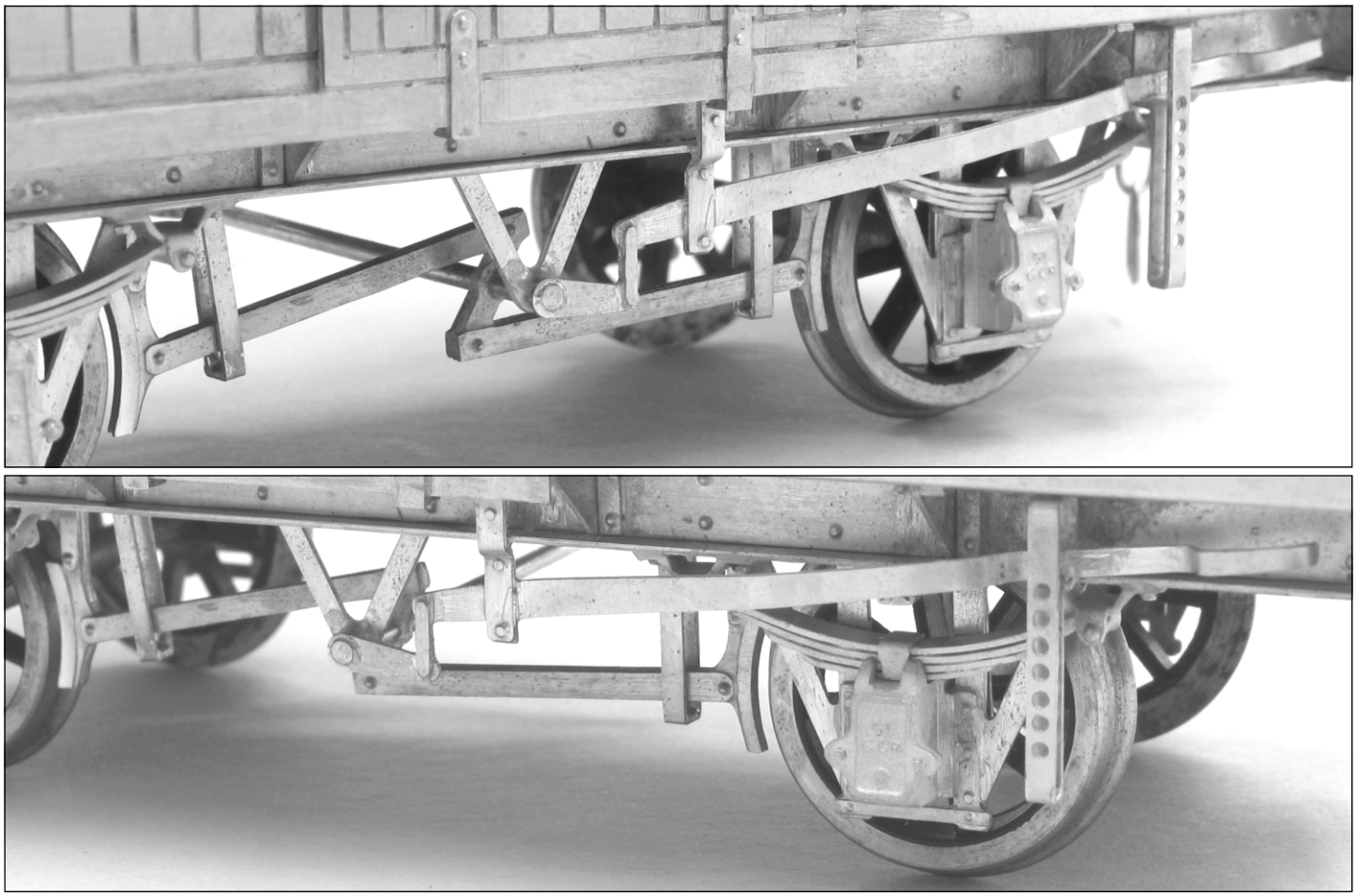


Then take the strengthening plate (part 18C) and fold the small lug at the centre of the top through 90 degrees. The side that this projects from will be the inside face (nearest the wheel) and the other side will be the outside face that slides against the W iron. Place an axle bearing onto a flat surface and place the bearing hole of part C (inside face down) over it and then the spacing washer and solder solid. Clean up and check that part C will slide freely (about 1mm movement) up and down the back face of the W iron, with the axle bearing in the oval hole and the top guided by the two central fold out lugs (a little dressing with a file may be required to achieve this). The spacing washer (part 18D) will keep the two plates slightly apart and help to prevent paint creeping between and making everything solid. Bend a slight angle in part C so that the bearing is square in the W iron hole and the top edge lies against the inside face of the W iron.

Springing can then be achieved by passing spring wire through the lugs of the W iron and through the central lug of part C. It may be necessary to clear the holes in the lugs with a fine drill. For the spring wire I used steel guitar strings. This is a wonderful material and can be purchased from musical instrument shops. It is sold in small packets in thousands of an inch sizes and I would recommend that all modellers would find a selection of sizes an essential addition to their materials box. I used 0.015” wire and found that it gave a very soft spring but if you used 0.017” wire this would give a harder ride. If you only tack the W irons into place first you can experiment with the wire thickness until you achieve the ride that you desire. If you bend the ends of the wire through 90 degrees before sniping off this will retain the wire with no need to solder it into place.

I would suggest fitting the cast axle boxes before fitting the W irons to the wagon as you can then check that they do not impede the movement of the bearing. I had room on the etch to include two extra W irons and I would recommend that you make these up first to evaluate the system and if you don’t like it you can use the other four as solid W irons. If you do have a go at springing then I would be most interested in what you thought of it.

11. Fit the remaining brake gear components. The diagrams and illustrations give a clearer picture of the assembly than words would. So study these to make yourself familiar with the components and I will just give additional notes for components if necessary.



Brake safety loops (parts 19 straight and 20 angled). I folded up and reinforced each fold with solder before fitting over brake push rods and soldering to wagon floor.

Brake pin guide (parts 21). I folded these up and reinforced each fold with a spot of 60/40 solder and soldered the two ends together to form the top. The top then locates into a slot in the floor (open out slot with knife blade or reduce thickness of pin guide if slot is slightly blocked by solebar) with the rear fold of the pin guide level with the bottom of the solebar. Solder pin guide at inside of body and bottom of solebar (careful not to melt the spring casting).

Take the lifting link brake lever (part 22) and fit bracket overlay (part 24) and lifting link (part 23). Then bend a 45-degree set into the vertical bracket (fold lines on rear) and reinforce fold lines with solder. Bend sets in the brake lever to clear the axle box and form handle at the end. Pass handle end of lever through pin guide, locate the vertical bracket into slot in floor and locate end of crank onto brass rod projecting from vee hanger. Solder from the inside of the van the bracket into its slot, the lever to the pin guide and the crank to the brass rod. Cut off projecting brass rod and dress the end square with a file.

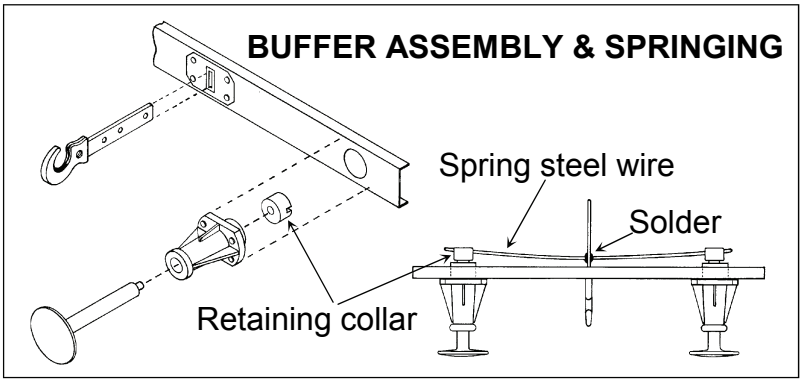
Fit second pin guide to the other side (the side without brake blocks) and bend sets in plain brake lever (part 25) again to clear axle box and form handle at end. Fit brake lever, soldering at pin guide and vee hanger brass rod.

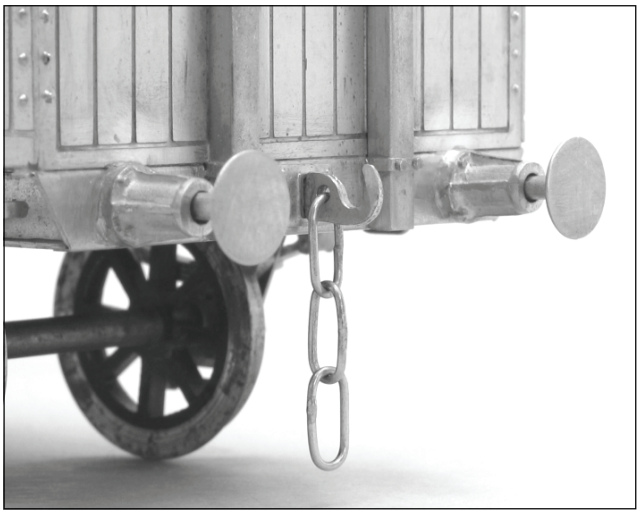
12. If not already done, fit the remaining doorstops (parts 10) and the coupling plates (parts 26) over the slots in the buffer beam.

13. I now prefer to fit the roof. On the prototype van the top runner of the door was inset into the roof to form a rainwater gutter. The roof is guillotined out of brass sheet and so requires two rebates filing to accommodate the door runners. Lightly scribe a line about 3/4mm from the edge of each side of the roof. Offer the roof into place against the door runners and mark the ends of the cutout. Now using a sharp, flat Swiss file, file into the roof just short of the scribed line. If you work along the cutout filing a series of notches the width of the file you will remove metal very quickly. You can then more carefully work up to the line using a draw filing technique. While regularly offering the roof into place until you achieve a good fit. I find this technique is just about as quick and more controllable than using a piercing saw.

14. Fit the cast end stanchions referring to the main drawing for position and using the etched plank lines as a guide. You may find that the stanchions are slightly over length (this is to compensate for shrinkage in the mould) and require shortening by filing a little off the tops.

15. Drill out the buffer bodies with a 2.1mm drill to take the cast buffer head/shank. Hold the drill in a hand pin vice (chuck) and grip the buffer body between finger and thumb. Drill through the body from each end so that the hole breaks through in the middle. Use a little spot of spit on the end of the drill (some more technical people have a block of furniture polishers bees wax that they smear on the drill end) and this will help prevent the drill wandering in the white metal and breaking through the side of the buffer. Then fit shank through buffer body, snip off some of the narrow end of the shank to leave just over 1mm from the step and solder a retaining collar onto the shank. Open up holes in buffer beam slightly and fit buffers.





Laminate together both halves of the coupling hook and make up the links. I close up the links by holding the curved end in the jaws of a pair of round-nosed pliers in one hand and squeeze the flat parts of the link parallel with long-nosed pliers (angled long-nosed pliers with serrated jaws are even better) held in the other hand. Once you have six even-shaped closed links, you can open each one slightly with long-nosed pliers and thread three together. The last link passes through the hole in the coupling hook. I reinforce the joint of each link with a spot of 60/40 solder.

Pass the coupling hook through the slot and retain it with a length of spring wire. Polish the centre of this wire with emery cloth first so that you can solder it to the coupling hook shank once you are happy that the buffers spring freely.

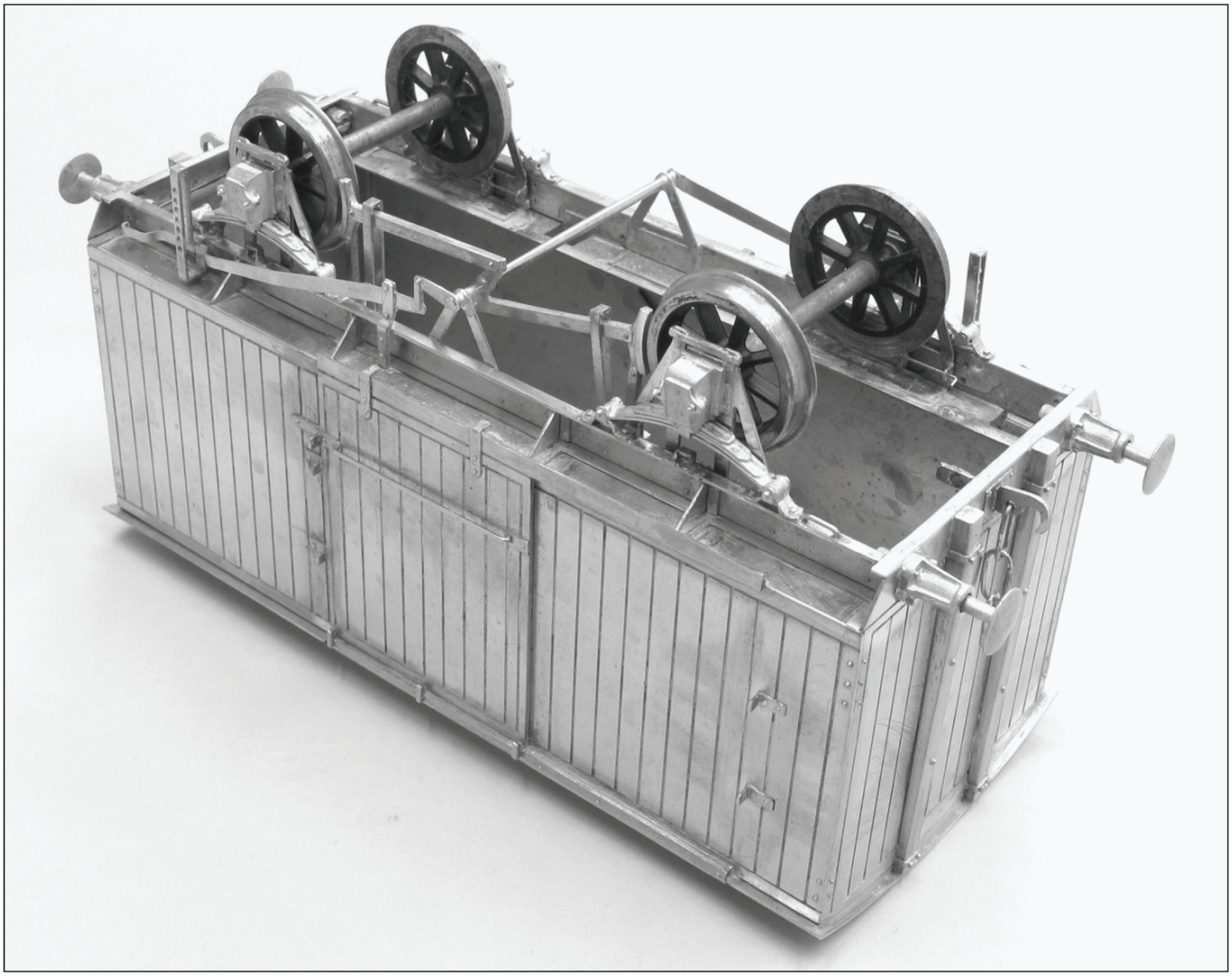
16. Painting is a vast subject that cannot be covered fully here. The important thing with a metal model is to get a good base coat of primer. Hopefully you have been cleaning up and washing the model at the end of each modelling session but it will still need thoroughly cleaning before painting. I give my models a good scrub with a stiff-bristled paint brush in a sink full of hot water, as hot as your hands can bear, and cheap washing up liquid (the expensive stuff that's kind to your hands has an oil in it that will stop the paint keying to the metal). If you know somebody who works in catering and can scrounge you some industrial-strength liquid this is better still. Then rinse the model a couple of times in clean warm water and place in a dust-free box to dry. I use car aerosol primer and Halfords grey primer is one of the best. For the best results you want to spray at room temperature (25°C) on a dry day, avoid cold, damp or humid days. I find it helps to warm the model to about 30°C (put it in the airing cupboard overnight) and I warm up the paint tin by putting it onto a radiator (about 40°C, but use your common sense as I don't want anybody blowing themselves up). I find it best to prime the model in two light coats, about 15 minutes apart and then leave for 48 hours to harden off (in the airing cupboard in a dust-free box).

I brush-paint my models with Humbrol enamel. For years I just stirred it up and painted straight from the tin but I was never completely happy with the results. Recently two things have transformed my painting. The first was a copy of Martyn Welch's book, The Art of Weathering, Wild Swan Publications, ISBN 1 874103 11 9. Martyn's basic techniques are very useful and almost foolproof. Martyn's method of mixing coarse talcum powder into the paint to give a textured roof is particularly effective. The second thing is to mix the paint in the tin and then transfer it to a palette (a sheet of

clean plasticard) with blobs of lighter and darker shades of paint surrounding the main colour. Then work the paint with the brush on the palette, slightly varying the tones of the paint. This seems to totally change the texture of the paint and the way it goes on and covers on the model.

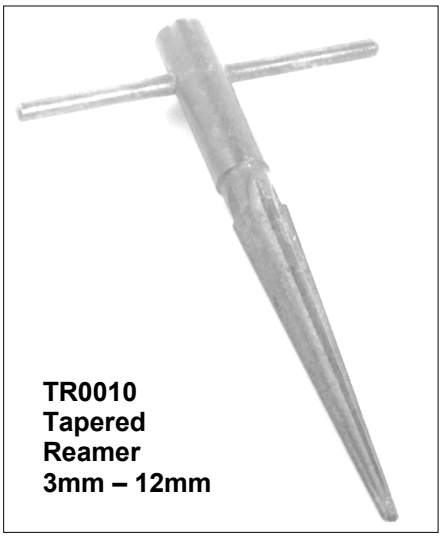
There are some etched number plates that you may wish to glue to the solebars after painting. Refer to the main drawing for positioning.

GREAT CENTRAL RAILWAY 10 Ton SLIDING DOOR VAN Diagram 17



Tapered reamer & Fibreglass Scratch Brush

The use of these tools is mentioned in the instructions. These and most other general modelling tools can be obtained from Squires Model and Craft Tools, 100 London Rd, Bognor Regis, West Sussex, PO21 1DD, Tel 01243 842424. They do a free catalogue and a very good mail order service.

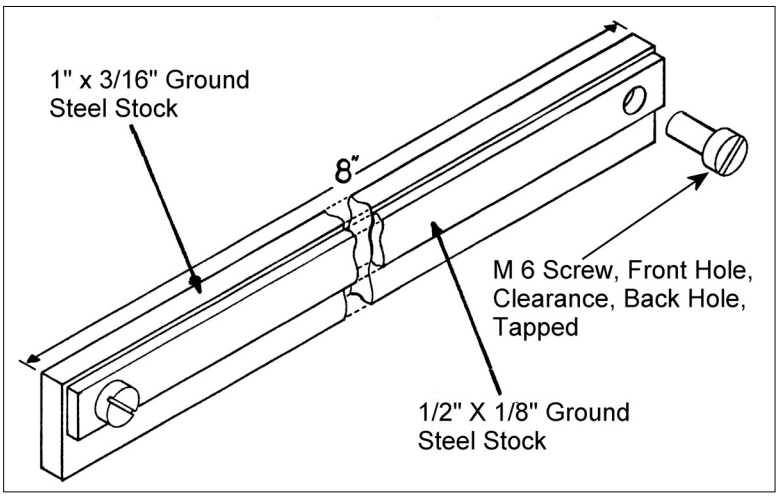


TR0010 Tapered Reamer 3mm – 12mm

The scratch brush is like a propelling pencil holder into which a fibreglass refill is fitted and which will give a vigorous abrasive action. I find this tool indispensable for cleaning up and removing solder. One very useful tip is to soak the refills in dilute PVA glue (Evostick resin W wood glue let down 50/50 with water and a spot of washing up liquid) and then drill holes in a block of wood and stick the ends of the refills in the holes while they harden off. This will make the refills much more abrasive and longer lasting, and also stops the fibres breaking off and ending up in your fingers. You will need to give the refill a good rub to get it started but if you use green label flux you will soon have plenty of rusty tools that need cleaning.

I used a tapered reamer to open up the holes in the buffer beams. I find this tool invaluable for building etched kits

Folding Bars



You will find a set of these very useful and here are details of the set that I have made for myself, in fact I have made three sets of different sizes. The dimensions or materials are not critical so make yourself a set to suit the materials you can get hold of. The important thing is that you can clamp the part along its entire length, with the etched fold line just above the front bar. Then clamp the bars in the jaws of your vice, a couple of 1" G clamps are also useful for long folds, and laying a steel rule at the back of the part to help transfer the pressure from your fingers evenly, pull forward to make the fold. Once the fold is close to 90° you can finish by pressing down on it with a block of wood and moving the block along the fold with a stroking action or by giving gentle taps with a small hammer on the wood block. Occasionally it is necessary to emboss bolt heads onto a part before folding, by lining the face of one of the bars with two or three layers of masking tape, you can still clamp the part without crushing the bolt heads but you wont get such a tight fold, so deepen the fold line with a triangular file.

Can You Help Me?

If you have enjoyed building this kit and have been satisfied with the quality, I would be most grateful if you could recommend it to your friends and fellow modellers. Although my kits are not perfect, I try to put a lot of time and effort into producing them. If I can get extra sales of a kit through customer's personal recommendation and I find that word of mouth is the best form of advertising. This will help me to put extra time and money into developing the next kit. Hopefully this will give me more satisfied customer to recommend my kits to their friends.

If you are not happy with this kit then please tell me. Hopefully I will then be able to help and sort out any problem.

Best Regards And Happy Modelling

Jim McGeown