CONNOISSEUR MODELS 0 GAUGE
BRITISH RAILWAYS STANDARD 20 Ton BRAKE VAN

British Railways built thousands of virtually identical brake vans from 1950 onwards to this standard design. Vacuum brake piped and unfiited versions were built. The design was based on an earlier LNER brake van. The vans lasted in service with BR until the late 1990,s and many are still in use on preserved railways.

Wheels, 3'1", Three hole disc are required to complete (Slater's Cat No 7122, Temple Rd, Matlock Bath, Derbyshire, DE4 3PG, Telephone 01629 583993)

Connoisseur Models, 33 Grampian Road, Penfields, Stourbridge, DY8 4UE, Tel 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, available from Branchlines, 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.

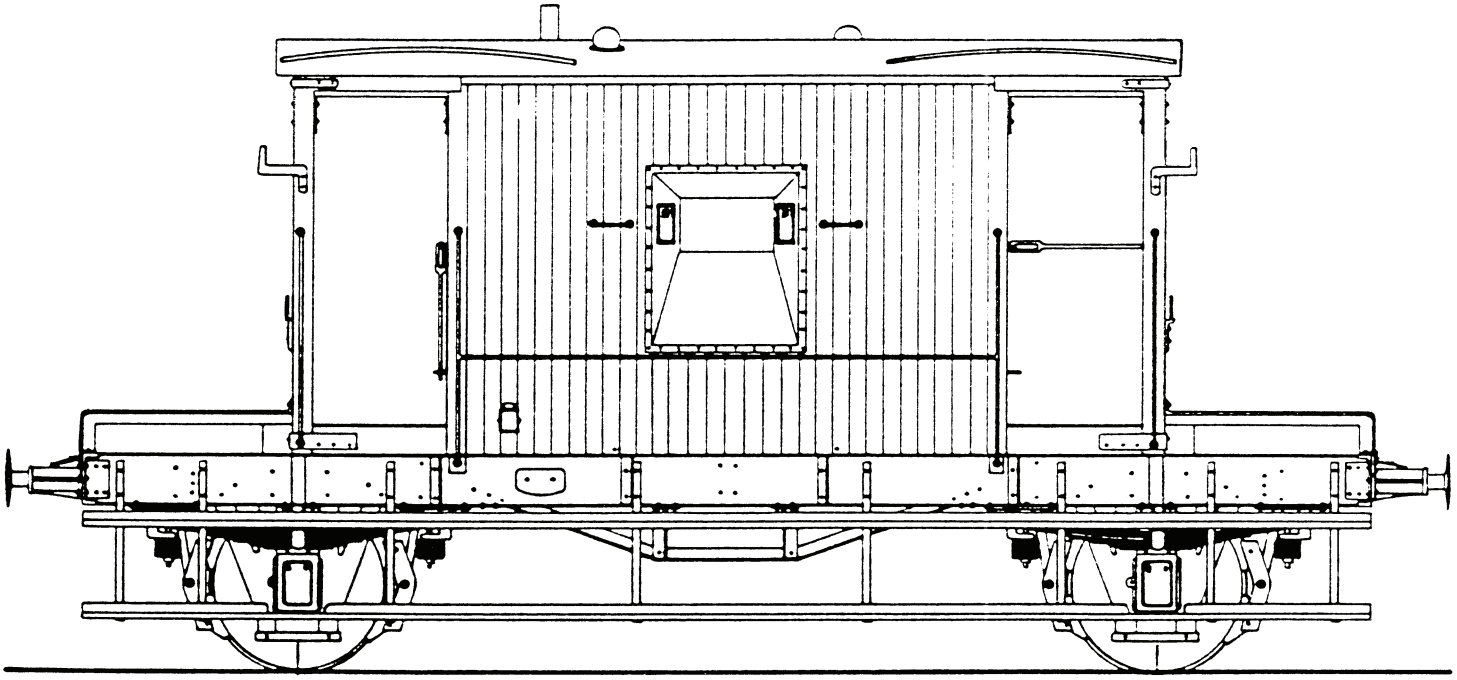
Other useful tools include a bench vice, a good pair of tweezers, a set of Swiss files (get a full set of cheap ones and then buy quality replacements for the three that you use the most), a pin vice with a selection of drills from 0.5mm to 2.1mm plus a few larger sizes that you use regularly (2.6mm 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.

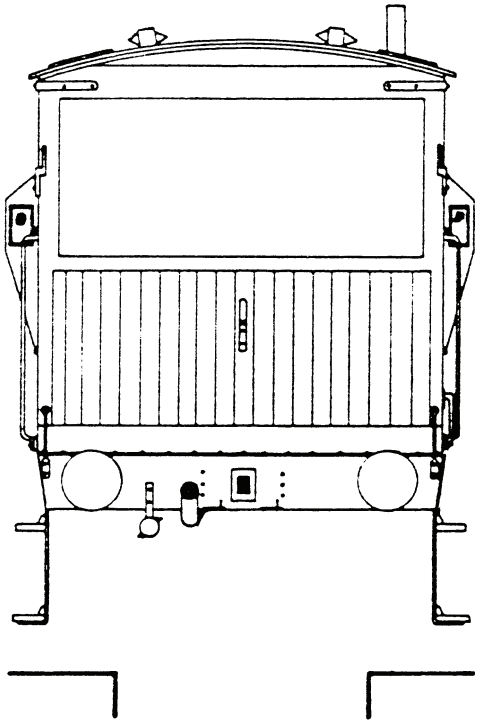
Try to complete all high-temperature soldering before attaching any of the cast whitemetal parts. These can be attached with two-part epoxy resin such as Devcon or Araldite Rapid. Ensure the surfaces to be glued are clean and free of grease.

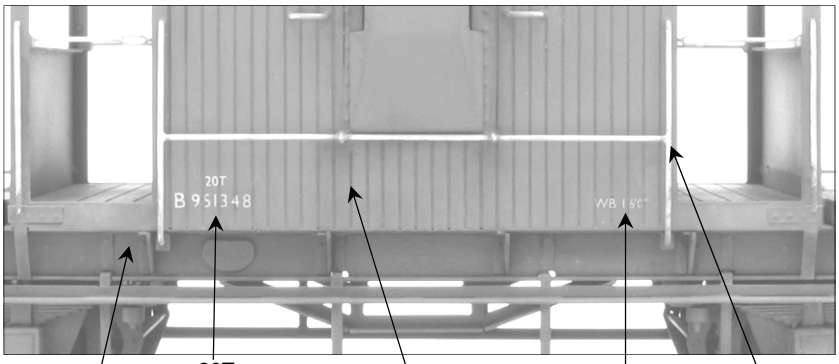
A better alternative is to solder your white metal castings using Carrs 70 degree low melt solder and Carrs red label white metal flux. The iron should be run at a much lower heat so that you do not melt the castings. I have a domestic light dimmer switch and plug socket fixed to a piece of wood, wired 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.

British Railways Standard 20 Ton Brake Van







Black Under Frame

20T B951348

20T B950866

Bauxite bodywork vacuum fitted. Grey for unfitted.

WB 16'0"

WB 16'0"

White Handrails

Livery. Under frame and buffer beams-black. Bodywork Vacuum braked vans-bauxite, unfitted vans-grey. Roof-dark grey. End platform sides (this was a metal tray into which the concrete ballast weight was cast) -body colour, top unpainted concrete. Handrails-white. Lettering-white (on top of black patches for grey vans).

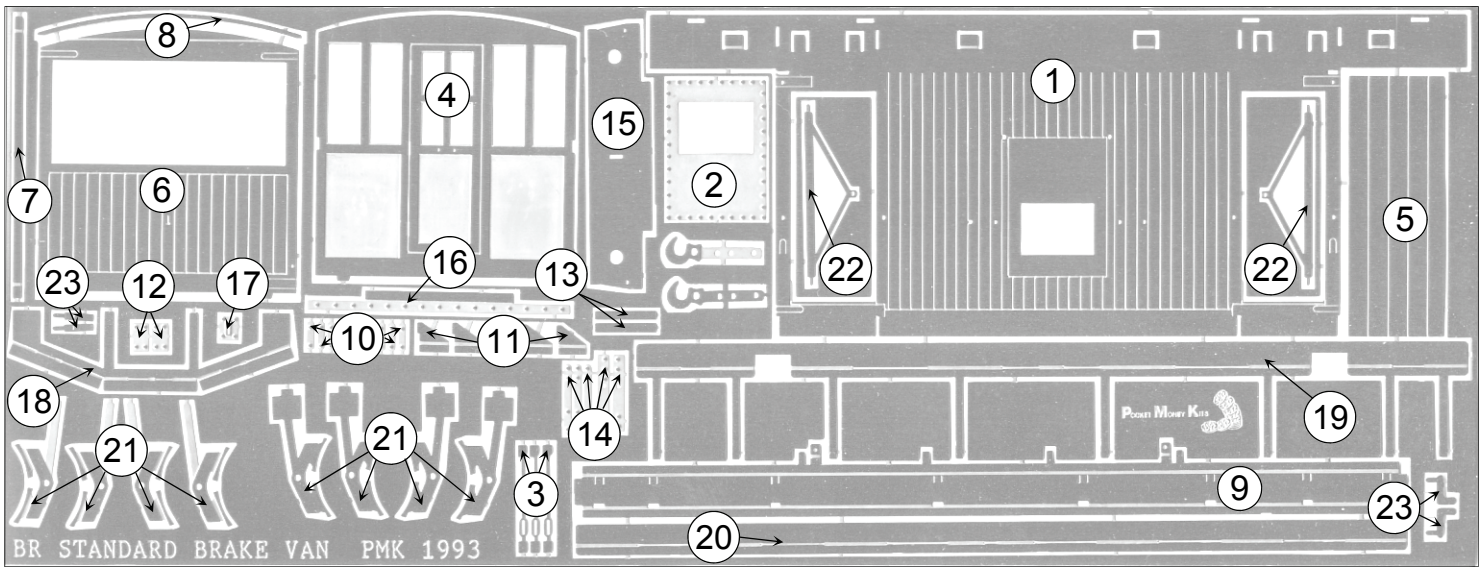
Transfers for lettering are available from the Historical Model Railway Society, 8 Gilpin Green, Harpenden, Herts, AL5 5NR. You will require sheet number 25, BR revenue wagons. They are also stocked by some specialist model shops.

References: this kit was developed from an article in Model Railway Constructor May 1983. A useful reference book is British Railway Wagons, Cattle & Brake Vans, Railways In Profile Series No 5, Cheona Publications, ISBN 1 900298 05 8. You can get it from your local library via their inter library book loans system.

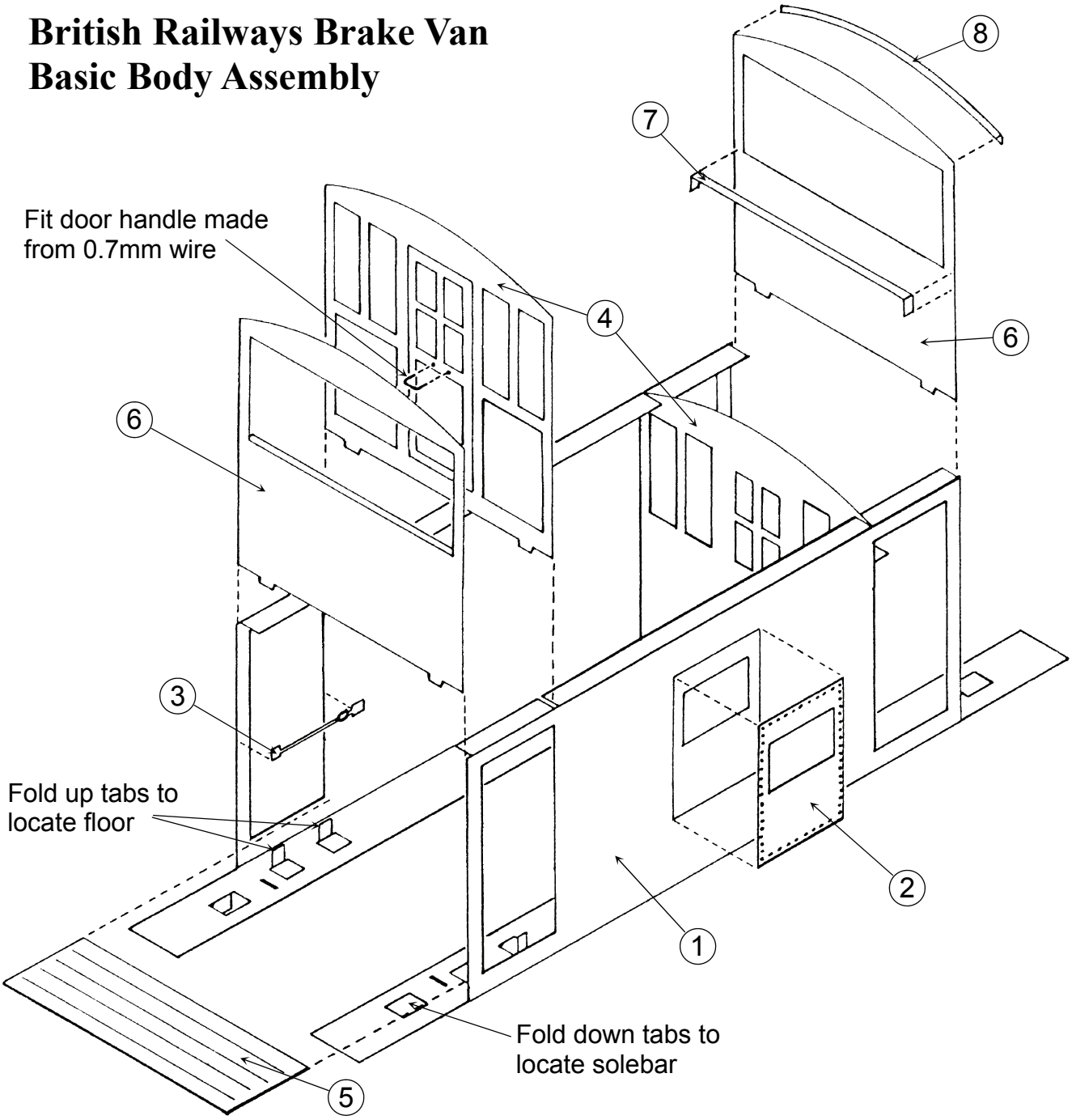
Sample running numbers. Many unfitted vans were later vacuum piped so use photos.

B950616-B950865	built 1950	Vacuum	B951516-B951715	built 1952-53	Unfitted
B950866-B951115	built 1950-51	Unfitted	B952716-B953115	built 1955	Vacuum
B951116-B951275	built 1951	Vacuum	B953116-B953415	built 1956-57	Unfitted
B951276-B951515	built 1951	Unfitted	B953416-B953675	built 1957	Unfitted

British Railways Brake Van Etched Parts Identification

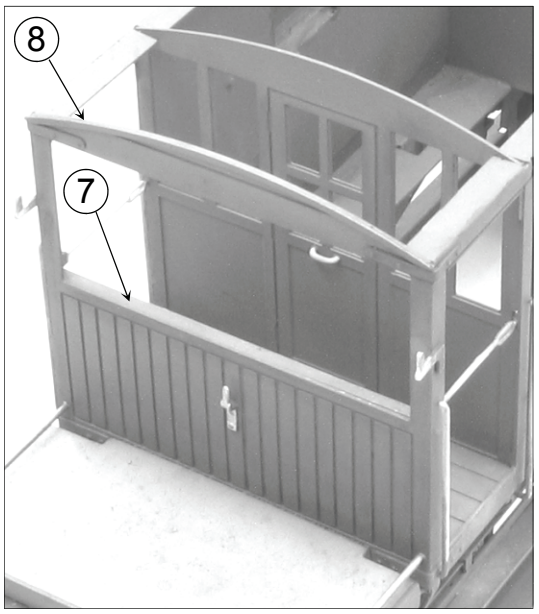


British Railways Brake Van Basic Body Assembly



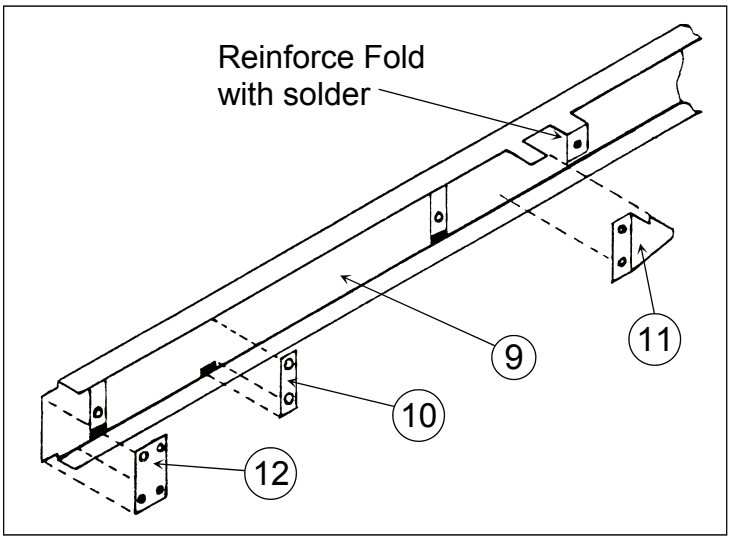
1. Remove the components within the doorways and then fold the top and bottom edge of the side (parts 1) through 90 degrees. Fit the ducket bolt head detail overlays (parts 2) to the sides. Fit the safety bars (parts 3) to the inside of the doorways. Note that there are etched marks to help with positioning.

2. Fit 0.7mm brass wire handles to the doors in the cabin ends (parts 4). File the wire tails flush on the inside face to prevent them interfering with the glazing after painting. Then assemble the sides and ends to make up the basic box of the van body. Use an engineers square to check that the van ends will be square and exactly opposite each other. Fold up the tabs to locate the veranda floor at the correct height and then fit the veranda floors (parts 5). As you are fitting the floors keep checking with the engineers square that the van ends are exactly opposite each other (even if this means that the floors are not quiet square with the cabin ends).

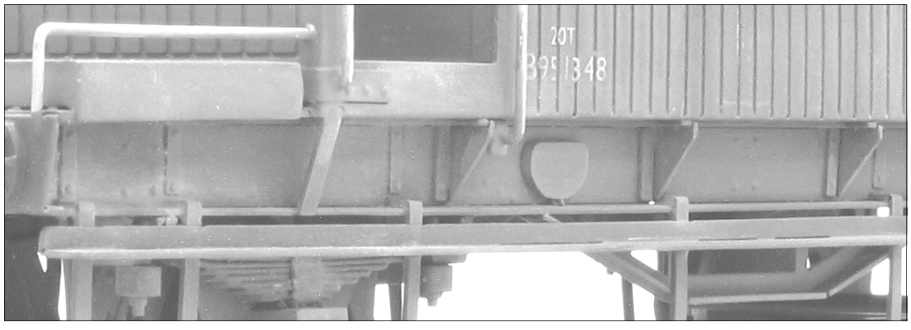


3. Fit the strips (parts 7) to the veranda ends (parts 6). These strips are to give an impression of depth and thickness to the visible edge of the veranda opening. The ends of the strips are designed to be folded at 90 degrees to aid soldering the strip square and flush with the edge of the veranda opening. Once the strip is firmly in place the ends can be snapped off. Fit the curved beading strip (part 8) flush with the top edge of the veranda end. Then solder the veranda ends into the main assembly. Run solder up the outsides of the joints and then clean up with a flat file so that you blend the joint to form a crisp square corner.

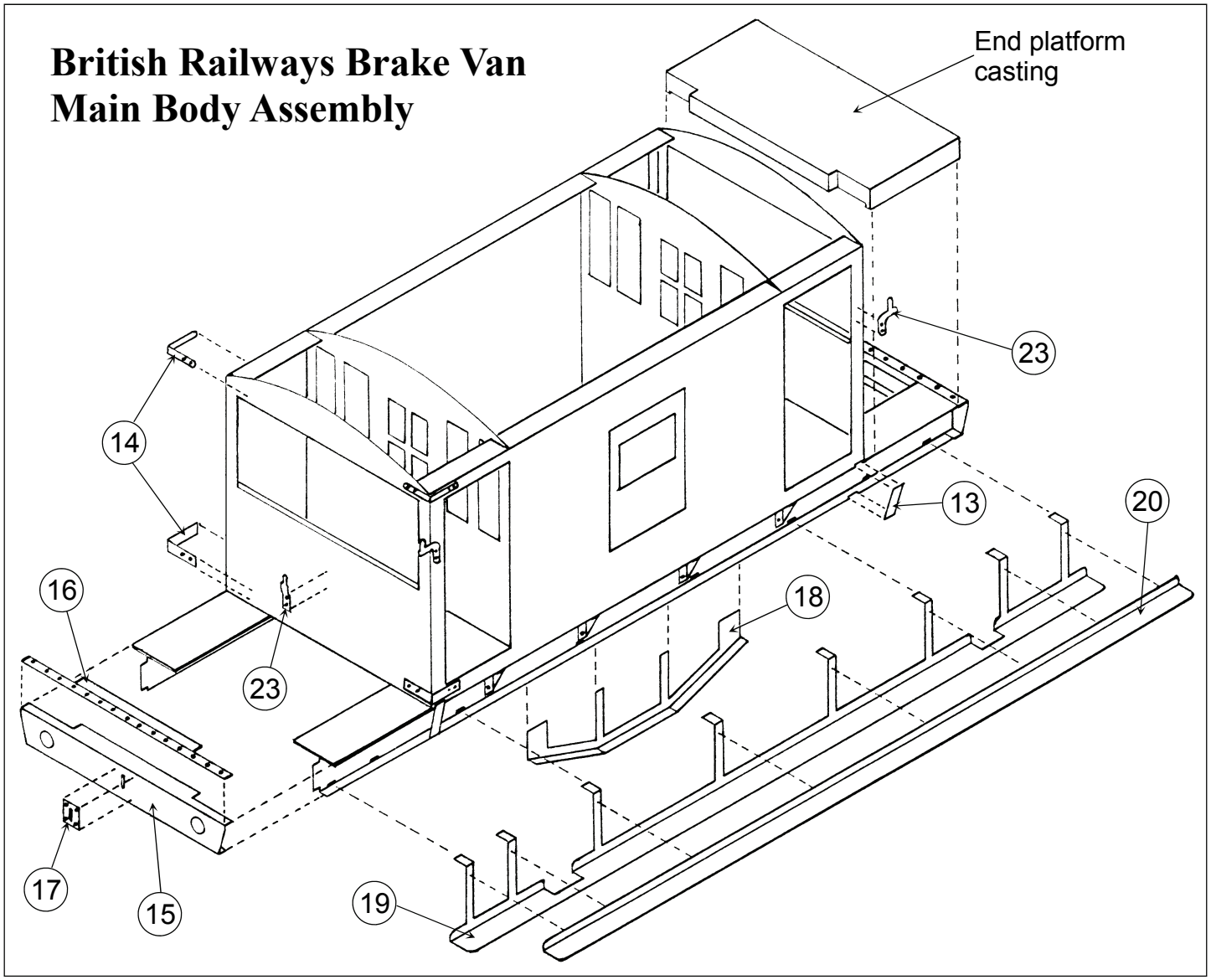
4. Emboss the rivet detail on the solebars (parts 9). This is best achieved with a rivet-forming tool. Alternately, you can use a scriber, with the point rounded off slightly on an oilstone. Place the part face down onto a block of softwood and then firmly press down into the half etched hole. This may distort the part so gently correct this by bending back with finger and thumb pressure. Then fold the top and bottom edge through 90 degrees. I prefer to detail the solebars before fitting as I find it is easier at this point to fit parts and then clean off excess solder with a knife blade, dressing the tops of the triangular brackets with a file.



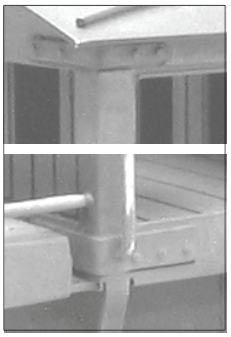
Fit the footboard bracket tops (parts 10). Note that there are etched marks to help with positioning and make sure that the slots for the footboard brackets are kept clear. Form bolt heads on the triangular reinforcing plates (parts 11) fold up and fit to solebar. Then fit the end plates (parts 12) and fold the mounting plate for the vertical handrail through 90 degrees. Now fit the solebars to the body. There are fold-down tabs that the rear of the solebar fits against and these help set the solebars at the correct distance apart. Fold the end tabs back into the body once the solebar is positioned or they will prevent the fitting of the axle guard castings later. Ensure that the solebar ends are level with the ends of the bottom strip of the body. Fit (parts 13) between the etched rebate in the body side and notch in the solebar. Solder generously, trim to size and blend in with a file.



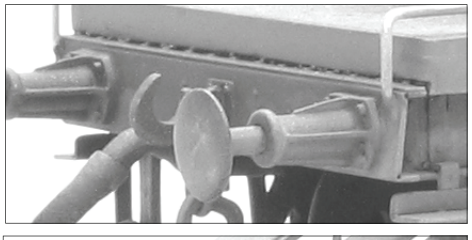
British Railways Brake Van
Main Body Assembly



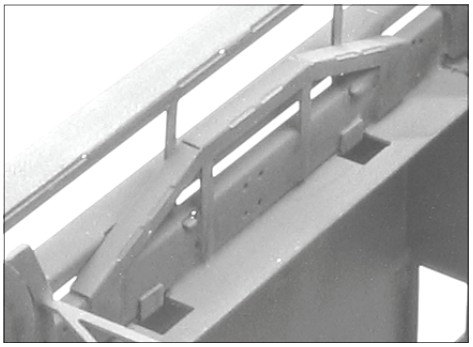
5. Fit corner strapping (parts 14) noting that there are etched location marks. I tin the back of the parts first and then remove them from the fret and clean off the tags. I then hold the part in place on the side with the end of a file (lining up the handrail hole on the bottom strapping) and apply plenty of flux and a dry iron to the edge of the part until molten solder runs out from all the edges. I then fold the strapping around the end, pressing with a flat file at the corner to form a sharp fold (you may need a few strokes with a square file to remove any solder that has run out onto the back of the strapping and will prevent a sharp corner). Now clean up around the strapping with a knife blade and fibre brush.

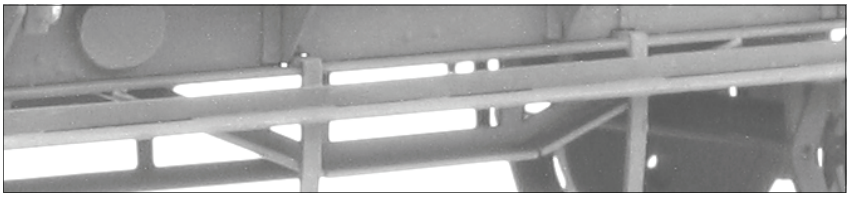


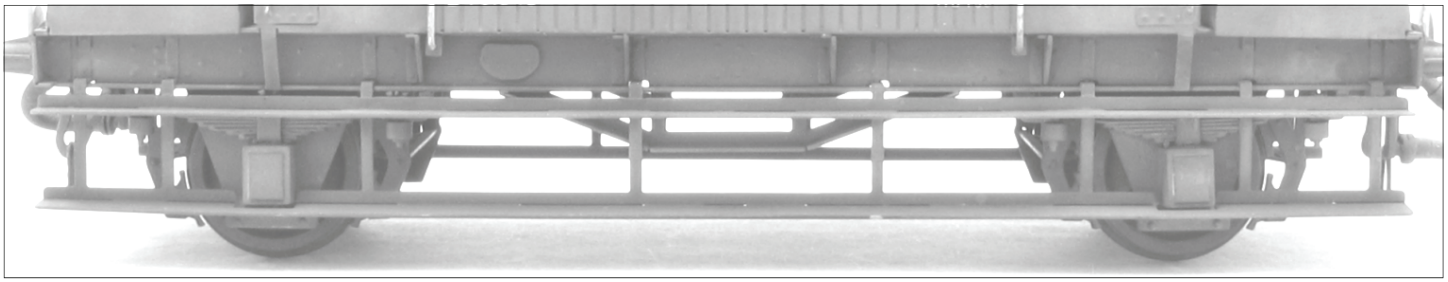
6. Emboss rivet heads and then fold up the buffer beams (part 15). Fit the detail overlay (part 16) to the top edge of the buffer beam and the coupling plate (part 17) over the coupling slot (ensure that the slot is free of solder). Then fit buffer beam into place making sure that it fits snugly onto the ends of the solebars and check that it is square to the rest of the van.



7. Fold up the solebar (strengthening angles) trussing (Parts 18) and then solder the legs behind the solebars. There are etched marks to help with location.





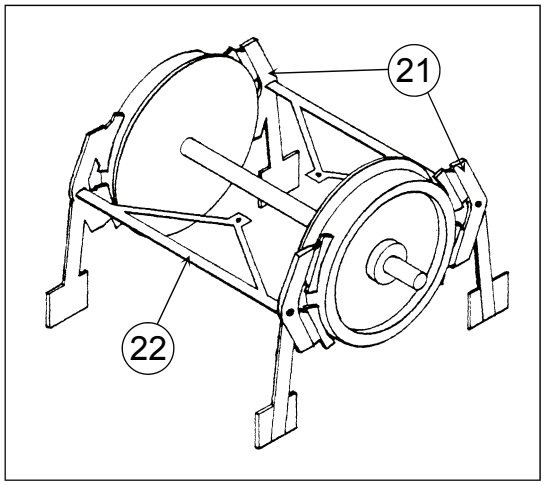


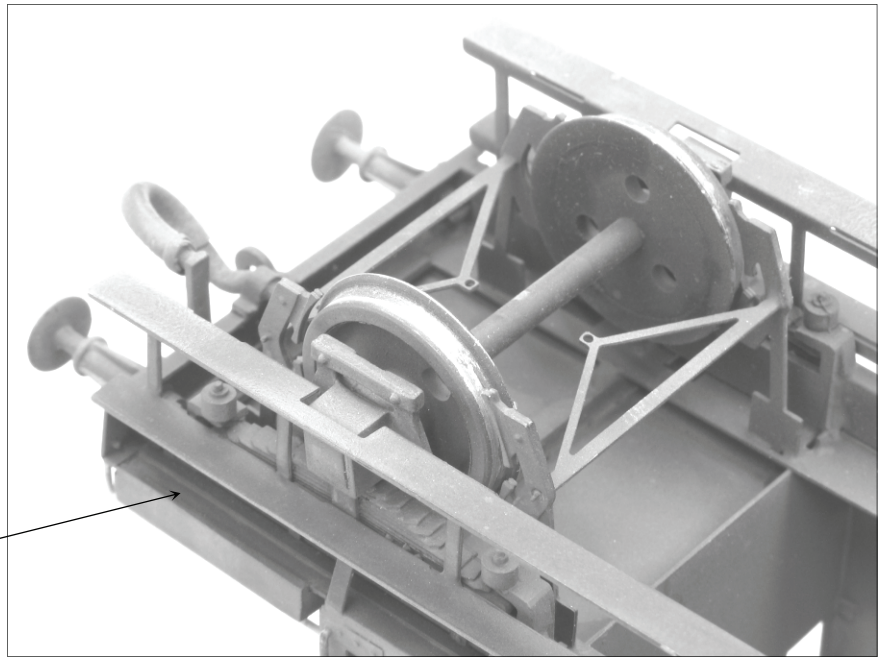
8. Fold up the bottom footboards and supports (parts 19). There are full etch bend relieving lines on the footboard fold to reduce the amount of pressure required to make a sharp fold. Once the bend is made you may wish to run a fillet of solder down it to strengthen it. Fold the tops of the footboard supports and fit into slots in the solebar. Then tack solder the rear of the supports to the web of the solebar. Use plenty of flux so the solder flows around all the edges and into the etched fold lines of the supports to give a really strong fixing for the footboards. Then solder the upper footboards (parts 20) into place, there are etched rebates on the back, which locate onto the supports. Then dress back with a file the ends of the footboard supports where they come through the inside face of the solebar so that they will not interfere with fitting the cast axle boxes.

9. Fit axle guards and wheel sets. My casting technology is not very sophisticated and I never seem to be able to cast axle guards cleanly, so clean out any flash between the W irons with a sharp pointed scalpel blade. Drill out to 2.6mm diameter the hole to take the brass axle bearing (go carefully as you don't want to drill through the front of the axle box). This hole is formed by a small rubber peg in the mould which tends to flex as metal flows into the mould cavity and you will probably find that the hole is not quite square to the back of the axle guard. To correct this use a drill held in a hand pin vice (chuck) and by applying a gentle sideways pressure as you drill out the hole, you will be able to square it up. Then fit the axle bearing into the slightly oversize hole in the axle guard with a blob of Evostick, as this takes a little time to set you can make adjustments to the axle guards and then leave the wagon on a flat surface for the glue to set.

Slip wheel sets with the axle guards on between the solebars and tack solder each axle guard with low melt solder to the solebar (the cut-outs in the footboards will help with positioning). Check that the axles are parallel and the wheel centres are about 112mm apart. Place the van onto a flat surface and adjust if necessary, by re-soldering each axle guard until the van sits without rocking, when happy solder solid.

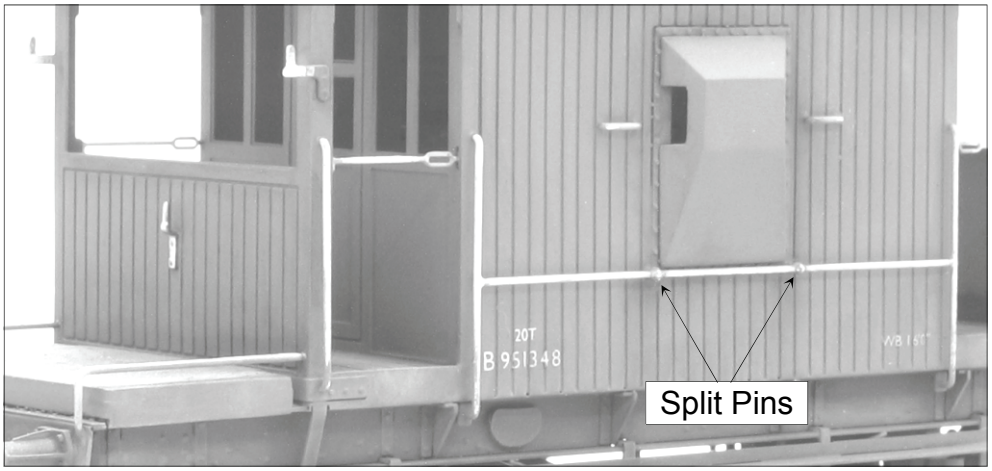
10. Laminate together the two parts of the brake hangers (parts 21) together. Then fit into slots on the underside of the body so that they line up with the wheels (I find it useful to hold them with miniature electrical crocodile clips). Spring the brake yokes (parts 22) between the brake hangers and solder so that they run towards the axle. Fit the cast end platforms. A little filing may be necessary to achieve a snug fit over the brass body bottom strips.

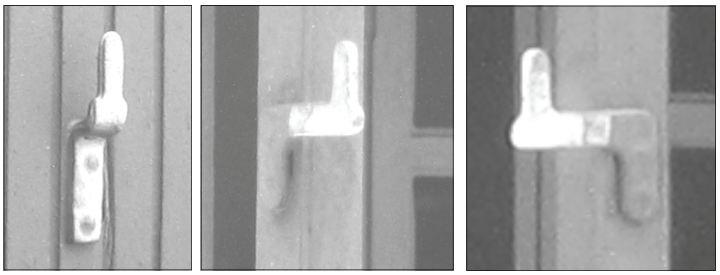




Note that end platform casting fits over the brass bottom strips of the body.

11. Fit the handrails, made from 0.7mm brass wire. I find some strips of thin card (0.8mm-1mm thick) useful to help space out the handrails from the body as they are being soldered into place. I fitted all the vertical handrails first (make sure that the ends of the wire doesn't come too far inside) and then the horizontal ones. The horizontal side handrail is supported by two split pins either side of the ducket plate. I spot-soldered the horizontal to vertical handrail joints using 60/40 electrical solder as this gives a stronger joint than using 145° solder. Use plenty of flux and make sure the solder runs all around the joint. The end platform handrails are the trickiest to do, the buffer beam end is bent into a U shape and soldered into a hole in the buffer beam.

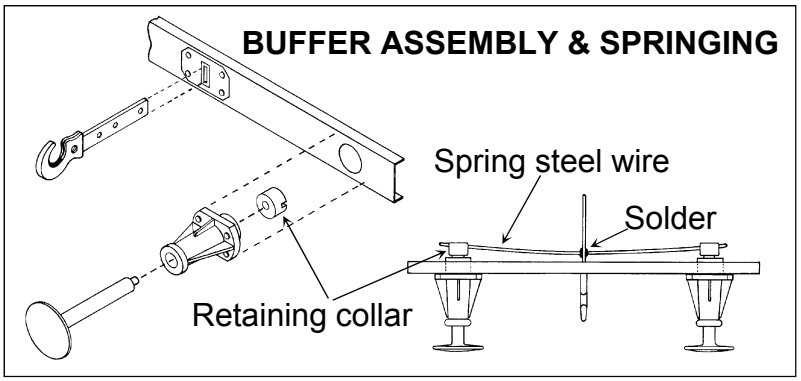




Emboss bolt heads on the lamp brackets (parts 23) and then fit to the body using the etched location marks to help with positioning.

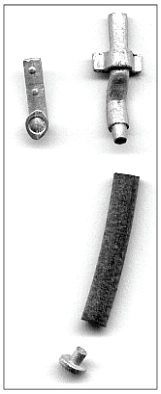
Now is a good point to fit the remaining castings. The side duckets castings distorted slightly in the mould and the back doesn't sit completely flat. To rectify this, bend the casting slightly so it will sit on a flat surface without rocking or rub the back on a piece of emery paper until it is completely flat. I then tinned all around the edges of the bolt head plate with 145° solder, fitted the ducket casting into place and then, using plenty of flux and with the iron running through a dimmer switch, ran a thin fillet of 70° solder around the edge of the casting. Don't worry about some of the solder running over the bolt head detail. Clean it up with a knife blade and then vigorously scrub with a fibre brush, blending the casting into the brass.

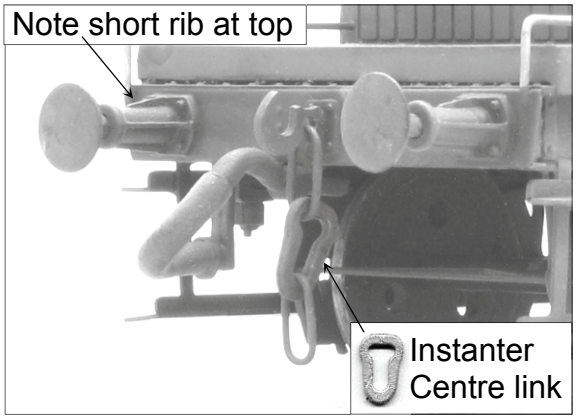
Drill out 2.1mm the buffer bodies to take the cast head/shank. I hold the drill bit in a pin vice (chuck) and grip the buffer body between finger and thumb. Drill through the body from each end so that the hole breaks through in the middle. Use a little spot of spit on the end of the drill (some more technical people have a block of furniture polisher's bees wax that they smear on the drill end). This will prevent the drill wandering in the white metal and breaking through the side of the buffer (a little lubrication on the drill will make drilling holes in any white metal casting more accurate). The prototype brake van had quite long buffer shanks, so I filed about 1mm from the back of each buffer body (this is a standard casting and I didn't want to damage the master by modifying it) so that the heads will stick out further from the body. Then fit the shanks through the 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 the holes in the buffer beam with a tapered reamer and then fit the assembled buffers into the holes.



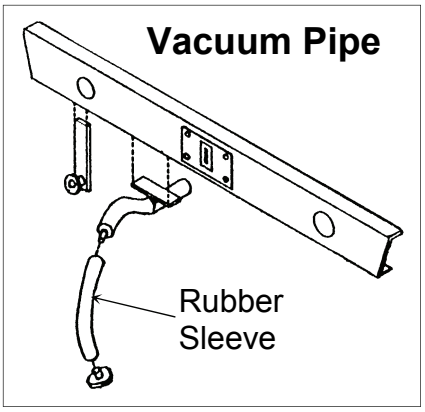
Now laminate together both halves of the coupling hook, and make up the links. I close up the links by holding the curved end in the jaws of a pair of round-nosed pliers in one hand and squeeze the flat parts of the link parallel with long-nosed pliers held in the other hand. Once you have six even-shaped closed links, you can open each one slightly 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. There is also an alternative cast instanter centre link.

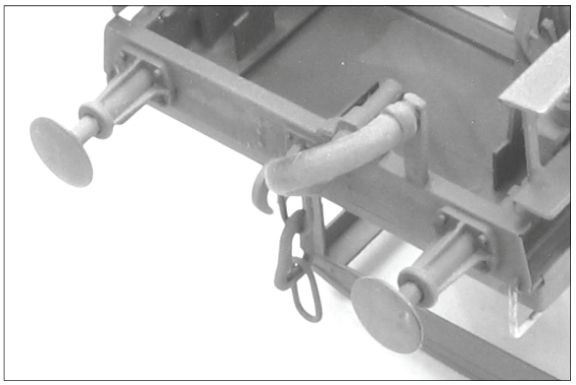
Pass the coupling hook through the buffer beam slot and retain it with a length of spring wire. Polish the centre of this wire with emery cloth first so that you can solder it to the coupling hook shank once you are happy that the buffers spring freely.





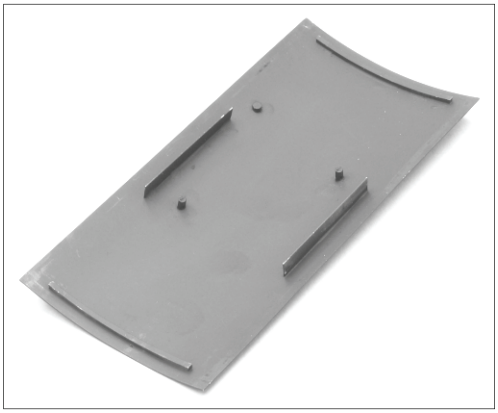
Fit the vacuum pipe castings. Solder the top of pipe and hose support (known as the dummy) casting to the buffer beam. Push the end of pipe coupling casting into the rubber sleeve and then push the sleeve onto the top of pipe casting. You can then leave the pipe hanging down (this was the case in about half the photos I looked at) or you can secure the end of the pipe to the dummy with a spot of low melt solder so that it is secured as required by good railway practice.

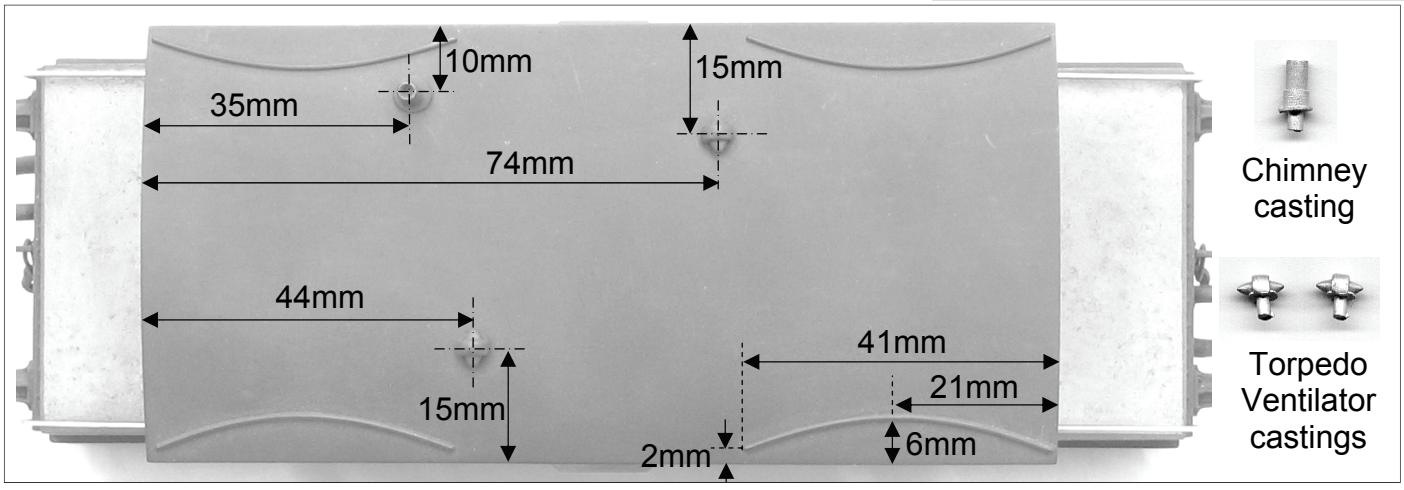




There are also castings for wagon number plate and label clip. The position of these varied from van to van so check photos. The label clip in particular wandered about and was sometimes absent. The cast clip looks OK on the solebar but is a bit heavy for mounting on the bodyside. In this case you may be better representing the clip with a U shape of fine wire.

12. Now for the roof. I have pre-rolled this in my rolling bars but you may have to work it a little with finger and thumb to get it to the exact profile. Mark out and drill holes for the chimney and ventilators. Mark with a pencil the position and centre point of the rain strips. The rain strips are made from soft wire by gently pulling the wire through finger and thumb to curve it (offer the curved wire up to the photo to check radius) and then spot soldered to the roof at the centre point. Trim square the two ends of the wire with side cutters and then holding the wire down with a knifepoint, solder the two ends to the roof. Apply plenty of flux and solder again at the centre point with the iron tip on the inside of the curve. The solder should flash along the wire soldering it solid to the roof. The wire will tend to expand with the heat but by soldering on the inside it should still keep an even curve. Clean up with knife and fibre brush. It is intended that after painting the roof is glued into place with Evostick, used as a contact adhesive (follow the instructions on the tube) but if you wish to have a removable roof, solder four tabs made from waste etch to the underside of the roof so that they will clip inside the cabin body. Then fit chimney and ventilator castings.



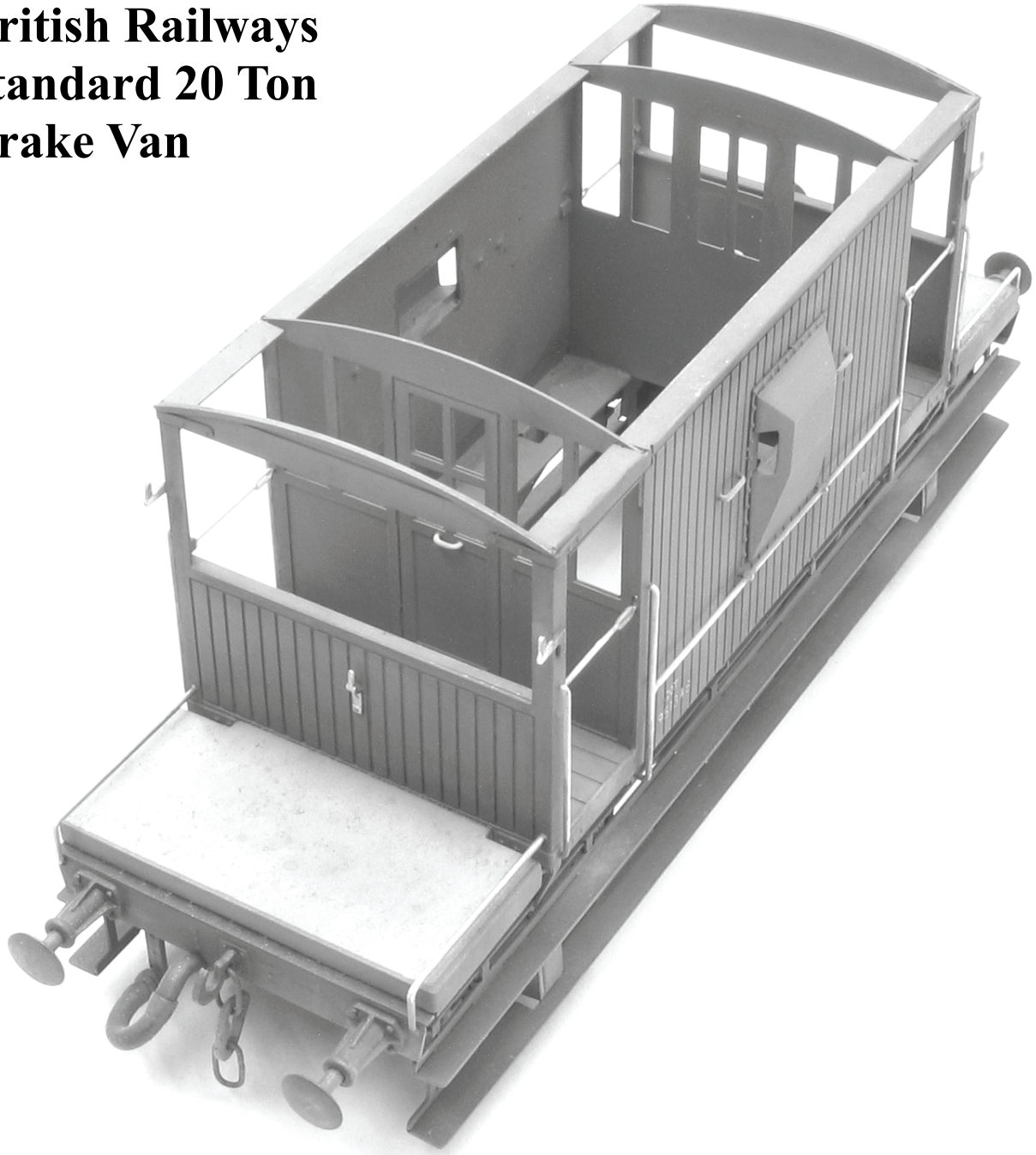


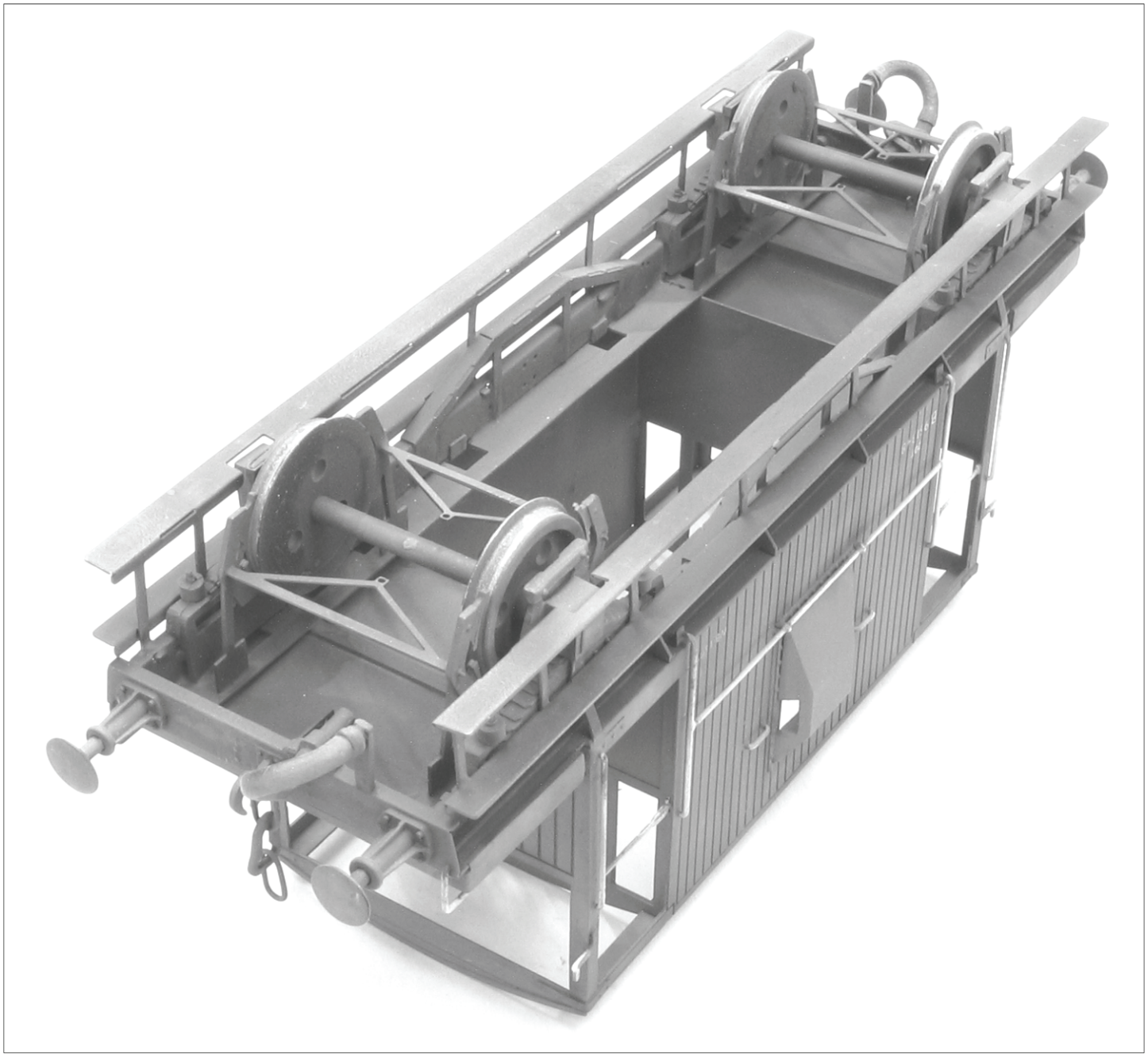
13. Painting is a vast subject that cannot be covered fully here. The important thing with a metal model is to get a good base coat of primer. Hopefully you have been cleaning up and washing the model at the end of each modelling session but it will still need thoroughly cleaning before painting. I give 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.

Make a floor from the quality card that the etch was packed onto and glue inside the cabin with Evostick. I prefer a card floor as this helps to deaden the rattling empty box noise that you can get when the wagon is running on a layout. For glazing the end windows, you can use clear plasticard, but I prefer to cut flat sheets from the clear blister packs that many items are packaged in nowadays. This has a textured surface probably caused by the moulding process, which gives it a slightly opaque quality that I think represents dirty windows just right.

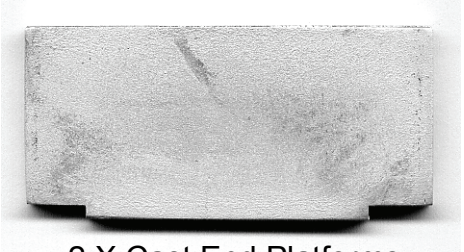
British Railways Standard 20 Ton Brake Van



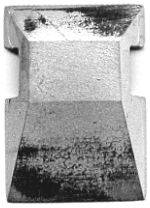


Parts Identification and check list

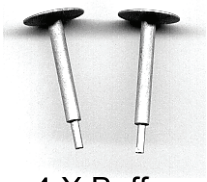
2 X Identical etched frets to give all components as the left and right sides of van are the same. 1 X guillotined brass roof approximately 58mm X 118mm. 6 X 10” length 0.7mm brass wire. 1 X 6” length spring steel wire (may be tarnished black). 1 X 8” length 22 swg soft tinned wire (rainstrips).



2 X Cast End Platforms



2 X Cast Side Ducket

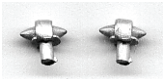


4 X Buffer Heads/Shanks

1 X Chimney

Vacuum Pipe Components.
2 X Dummy support.
2 X Buffer beam top of pipe.
2 X Rubber sleeve.
2 X End of pipe coupling

2 X Instanter coupling links



2 X Torpedo ventilators

6 X Coupling links

4 X Cast Axle Guards/Boxes

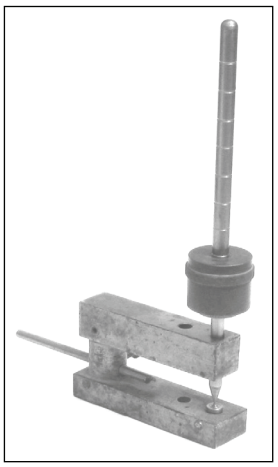
4 X Buffer Bodies

4 X Buffer Retaining Collars

2 X Number plates and label clips

4 X Split pins

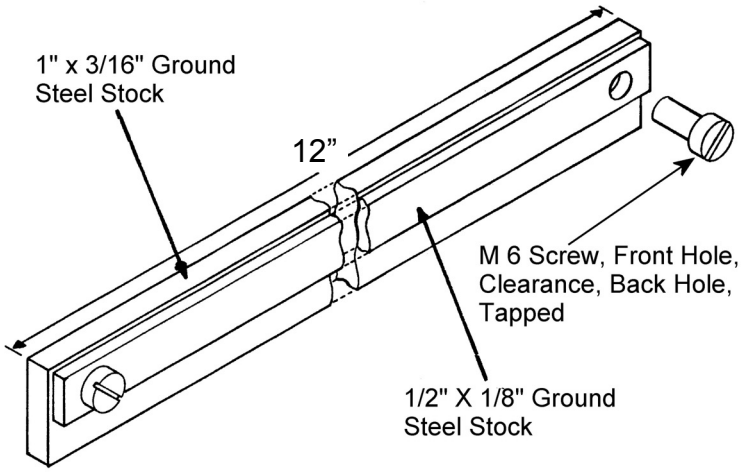
Bolt Head and Rivet Forming Tool



Although a very reasonable job can be done with a scriber point, a rivet forming tool is very desirable if you are going to do a lot of kit building. These are produced by a number of different people but I use and would recommend the one produced by Dick Ganderton, Graskop, Dewlands Road, Verwood, Dorset, BH31 6PN, Tel 01202 822701. It is available with a number of different sized punches and anvils but if you were only going to get one size then I would recommend the 7mm scale 1½" diameter. I have got ten years hard use out of mine so far so this is an ideal tool to put onto your Christmas present list.

Fibreglass Scratch Brush

The use of this tool is mentioned in the instructions. This 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. 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.



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