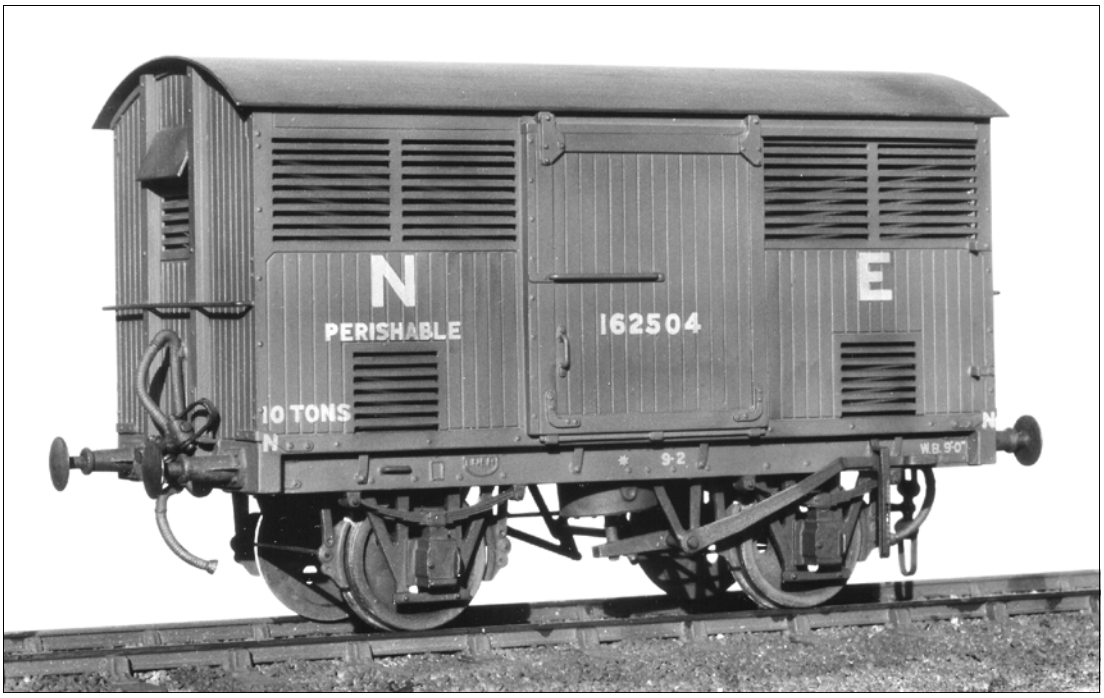
CONNOISSEUR MODELS

- 0 Gauge -

LNER 10Ton Perishable Goods Van



Prototype. These vans were a sliding door development of a NER design built by the LNER. They had louvered sides and ends to create a through flow of air to keep the perishable goods such as fruit and vegetables in good condition. This traffic was moved with the utmost haste and the vans were fitted with vacuum brake and through steam pipes to enable them to run in passenger trains.

Livery. Bodywork and solebars – Red Oxide. Buffers, vacuum pipe and metalwork below solebars – black. Roof – white lead (probably better as dirty grey). Lettering – white (note NE are not standard size).

LNER transfers for lettering are available from the Historical Model Railway Society (HMRS), Voluntary sales officer, 8 Gilpin Green, Harpenden, Herts, AL5 5NR. They are also stocked by some specialist 0 gauge retailers. You will require sheet 12, LNER goods vehicle insignia. Pressfix type.

POW Sides, Poplars Farm, Aythorpe Roding, Dunmow, Essex, CM6 1RY, produce dry rub down type.

Wheels, 3’1”, 3 hole disc (7122) are required to complete, Available from Slater’s, Old Road, Darley Dale, Matlock, Derbyshire, DE4 2ER, Telephone 01629 734053.

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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.

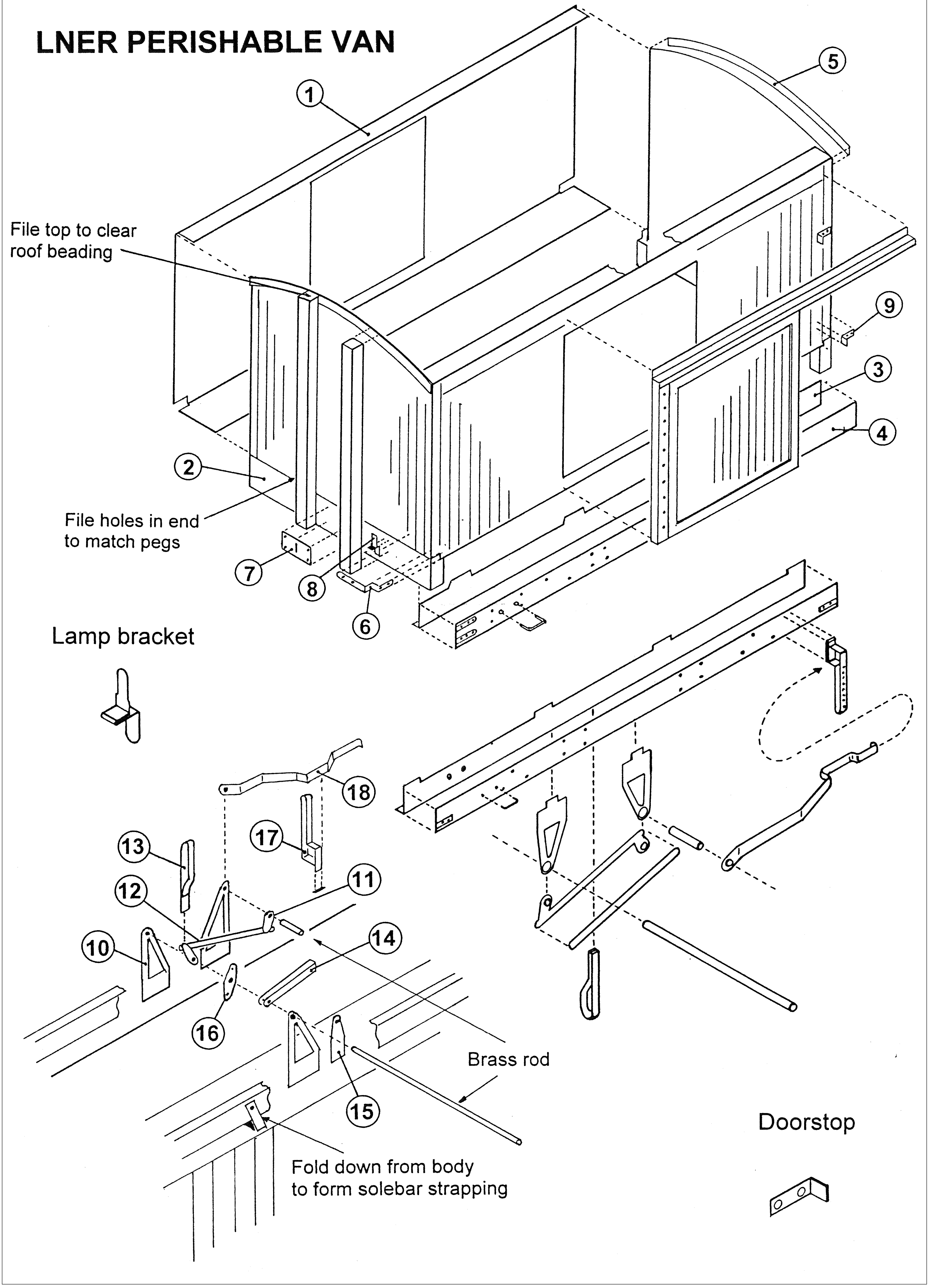
Other useful tools include a bench vice, a good pair of tweezers, a set of Swiss files (get a full set of cheap ones and then buy quality replacements for the three that you use the most), a pin vice with a selection of drills from 0.5mm to 2.1mm plus a few larger sizes that you use regularly (2.6mm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

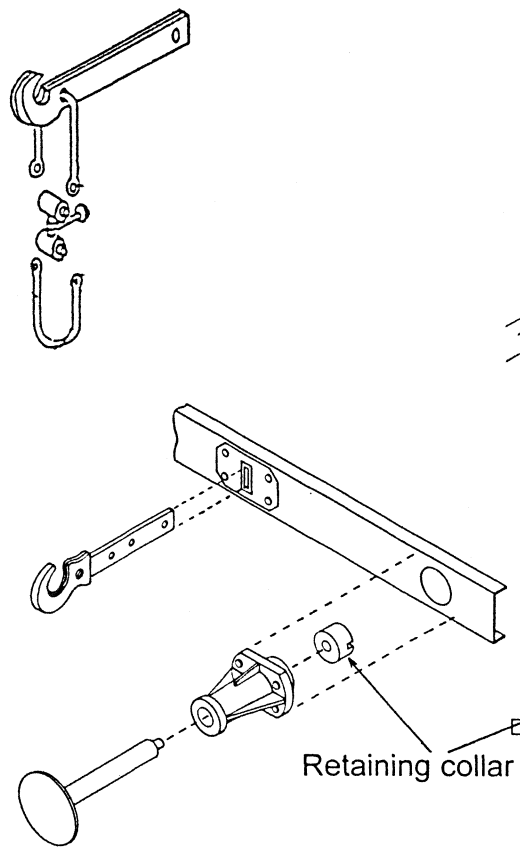
A better alternative is to solder your white metal castings using Carrs 70 degree low melt solder and Carrs red label white metal flux. The iron should be run at a much lower heat so that you do not melt the castings. I have a domestic light dimmer switch and plug socket fixed to a piece of wood, wired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

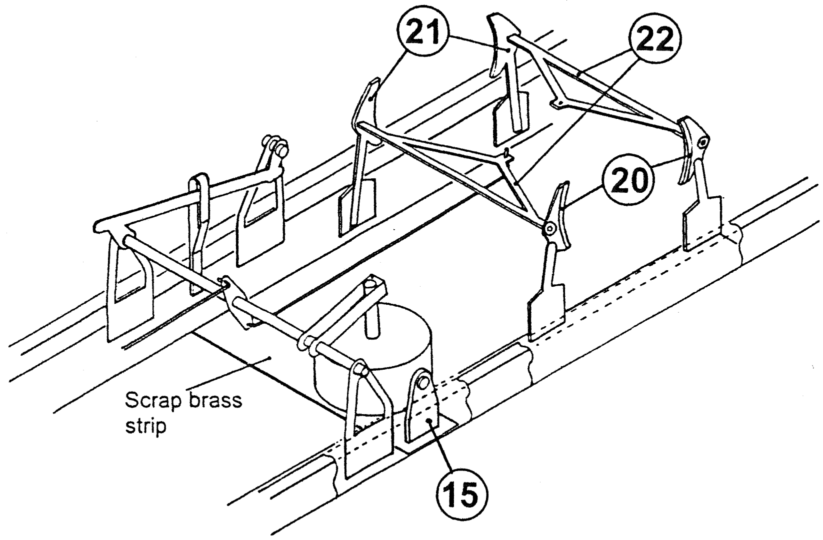
When attaching white metal fittings to brass the surface of the brass must be tinned with 145° solder, to allow the solder to grip. The surface of the casting at the joint should be burnished bright. The casting can then be soldered into place with 70° solder and fillets of solder run into any gaps with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

LNER PERISHABLE VAN

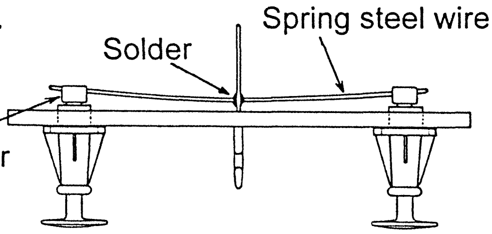


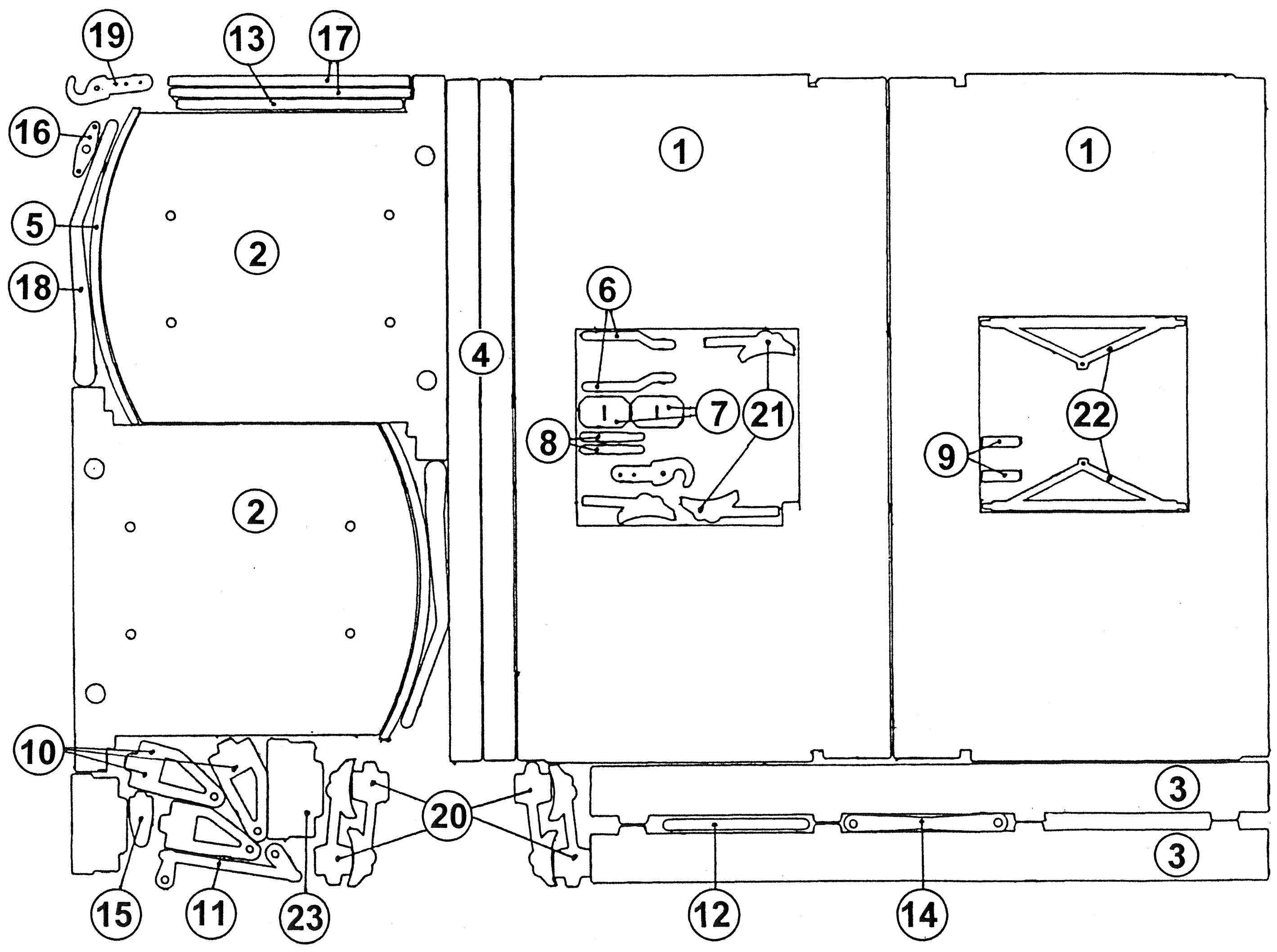
SCREW COUPLING





BUFFERS





LNER 10 Ton PERISHABLE VAN
Parts Identification and Suggested Assembly Order

1. Remove the small components located within the doorways of the van sides, parts 1 and store safely. Emboss the bolt head detail along the top, bottom and edges of the van sides (don't emboss the two bolts below the door opening). Then fold the top and bottom of the sides through 90°. These bolt heads are designed to 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 may find that the half etched holes are too 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.

Emboss bolt heads on the van ends, parts 2 and then fold around the ends of the buffer beams to form a box section. Then solder sides and ends together to form the box of the van. The buffer beam-ends will provide a positive location for positioning the sides but it may be necessary to dress off the etching cusp to get a snug fit. Solder both sides to one end first and then fit the second end, checking as you go that everything is square.

2. Fold the edge of the solebars, parts 3, through 90°. Emboss the four bolt heads at each end of the solebar overlays, parts 4. Solder overlays to solebars. Then fit handles (hooking point for horse shunting) made from 0.7mm brass wire. Fold down the body to solebar strapping (located in the bottom part of the sides) and then fit the solebars to the body. Note that the bolt head detail is different on each solebar, this corresponds with the slots on the underside of the body for the brake gear vee hangers. Two sets of four bolts 12mm apart on the two vee hanger side and four bolts central and four bolts to the right on the vacuum cylinder and single vee hanger side. It may be necessary to dress the solebar ends to get a snug fit. Once the solebars are fitted, spot solder the body to solebar brackets to the solebars.

3. Fit the roof beading, parts 5, to the top edge of the ends. Fit the bottom corner strapping, parts 6. Solder to the sides first so that the strapping runs neatly above the top of the buffer beam end and then fold tightly around to the end and solder in place. Solder the coupling plates, parts 7, to the buffer beam ensuring that the slots are aligned and clear of solder.

4. Fold up the lamp brackets, parts 8, noting that the centre fold is a reverse fold and then fit the bracket to the buffer beam in line with the etched location mark. Before fitting hold the top of the bracket with tweezers and apply a generous blob of flux. Then touch the side of the lamp bracket with the tip of the soldering iron coated with 60/40 electrical solder. The flux should draw the solder off the iron tip into the fold lines to reinforce them. Fold up and fit the doorstops, parts 9. Note the etched marks to help with positioning. As they are a little vulnerable to being flattened, try to get some solder to flow around the folded ends to reinforce them.

5. Fit the central brake linkage components with reference to the two diagrams shown on pages 4 and 5. Fit two vee hangers, parts 10, opposite each other and then laminate together the two parts of the cross-link, parts 11 and 12. Then pass a length of 1.6mm brass rod just over 2" long through the vee hangers and cross-link (don't solder rod). Now fit the third vee hanger using the cross-link and remaining brass rod to check that it is positioned correctly. Then solder this brass rod into the vee hanger, apply plenty of flux and the solder should also flow through and solder the cross-link, that is spaced just behind the vee hanger. The brass rod will be trimmed to length later.

Form up and fit the cross-link safety loop, part 13. Withdraw the brass rod from the two vee hangers and file one end square. Fold up the vacuum cylinder linkage, part 14, and then tin the inside faces. Pass the brass rod back through one vee hanger, thread part 14 over the rod and then the brake pull rod crank, part 16, then pass the brass rod through the cross link and into the second vee hanger. Now solder the brass rod into this second vee hanger so that the squared off end projects about $^{3}/_{4}$mm. Again use plenty of flux so that the solder runs through and also solder the cross-link.

Fit the vacuum cylinder support, part 15, and then solder a scrap of brass strip across the inside of the body to support the cast vacuum cylinder. Solder the cast support, set at a slight angle, to the vacuum cylinder. Fit vacuum cylinder to the scrap of brass and also solder at the etched support.

Fit the end of the vacuum cylinder linkage over the peg (peg may require two flats filing onto it) of the vacuum cylinder and also solder at the brass rod. Solder the pull rod crank, part 16, in the centre of the brass rod and at a slight angle. Hopefully reference to the diagrams will make this description clear.

6. 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. File about $^1/_2$mm off the top of the casting so that the spring ends will fit hard against the bottom of the solebar.

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 axle guards on, between the solebars and tack solder each axle guard with low melt solder to the solebar. Check that the axles are parallel and the wheel centres are about 63mm apart, there are etched centre marks on the underside of the body that I find useful to eye up to.

Place the van onto a flat surface and adjust if necessary, by re-soldering an axle guard until the van sits without rocking, when happy solder solid.

7. Fold up the brake pin guides, parts 17, note that the bottom 180° fold is a curved bend. Reinforce the folds with 60/40 solder and fit to solebar with the top locating in the hole on the underside of the body. Dress the cusp off the brake levers, parts 18, (this will make them look a little more delicate). Then form up (note etched dots to mark the position of the handle folds), thread handle through pin guide and solder at vee hanger and pin guide. Cut excess off ends of 1.6mm brass rod and file ends square.

Solder together the two parts of each brake block and hanger, parts 20 and 21. Holding the brake block with a crocodile clip etc, position just clear of the wheel tread and locate and solder the base into the slot on the underside of the body. Spring the brake yokes, parts 22, between the brake hangers and spot solder at each end. Link the inside brake yokes to the pull rod crank, part 16, with 0.7mm brass wire.

8. Fit the cast end stanchions. The etched holes may require opening up to 2.1mm and the top holes filing slightly oval to accept the cast pegs. File the top of the stanchions to fit snugly over the roof beading. Fit the end louvre bonnets, parts 23, but first clamp louvre tab in vice and bend it through about 30° so that when fitted to van ends the sides will sit down onto the cast stanchions. Fit end handrails made from 0.7mm brass wire, form up in one piece and spot solder to cast stanchions in addition to soldering the ends into the holes in the van end.

Fit door handrail and grab handle, shown on the main drawing on the front page and made from 0.7mm brass wire, into cast door. Dress off wire tails from the back of the door and then fit door to van side.

9. 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 body side.

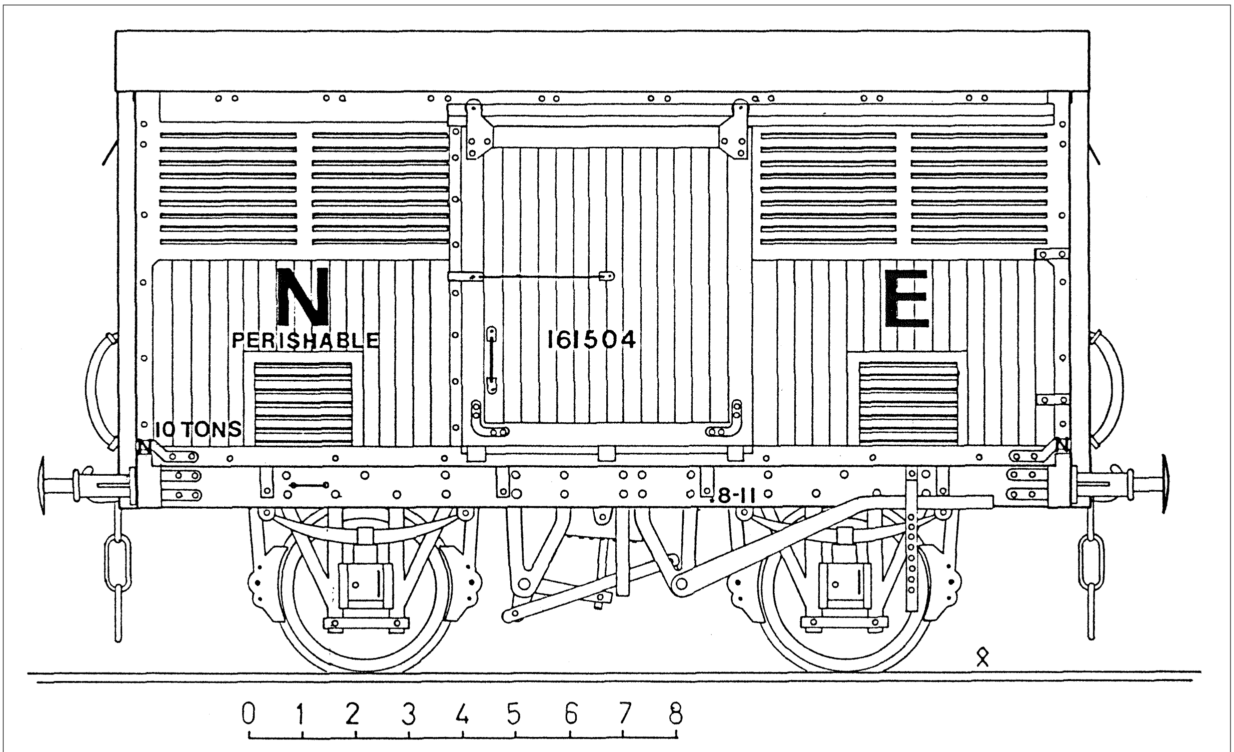
Then fit shank through buffer body, snip off some of the narrow end of the shank to leave just over 1mm from the step and solder a retaining collar onto the shank.

Open up holes in buffer beam slightly and fit buffers. Fit cast vacuum pipe on the centre line of the van end (over small hole) and steam heat pipe behind the buffer beam just to the right of the coupling plate.

Make up screw couplings (simple hooks, parts 19, are also included on the etch if you prefer these). Solder both halves of each hook together and using round-nosed pliers form the four links into U shapes. Dress the tops of two links with a file so that they will pivot freely in the slot in the hooks. Thread one of these links through the hook and spring the ends over the pegs on the cast centre. Then fit the bottom link.

Pass the coupling hook through the slot in the buffer beam and retain it with a length of spring wire. The ends of which press on the ends of the buffer retaining collars as shown in the drawing on page 5. 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.

10. I have passed the roof through my rolling bars but it may still require a little work with fingers and thumb to get it to the exact profile. I intended the roof to be glued into place with Evostick after painting, use as a contact adhesive (follow the instructions on the tube). 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 body. That should now be the metal work construction completed.

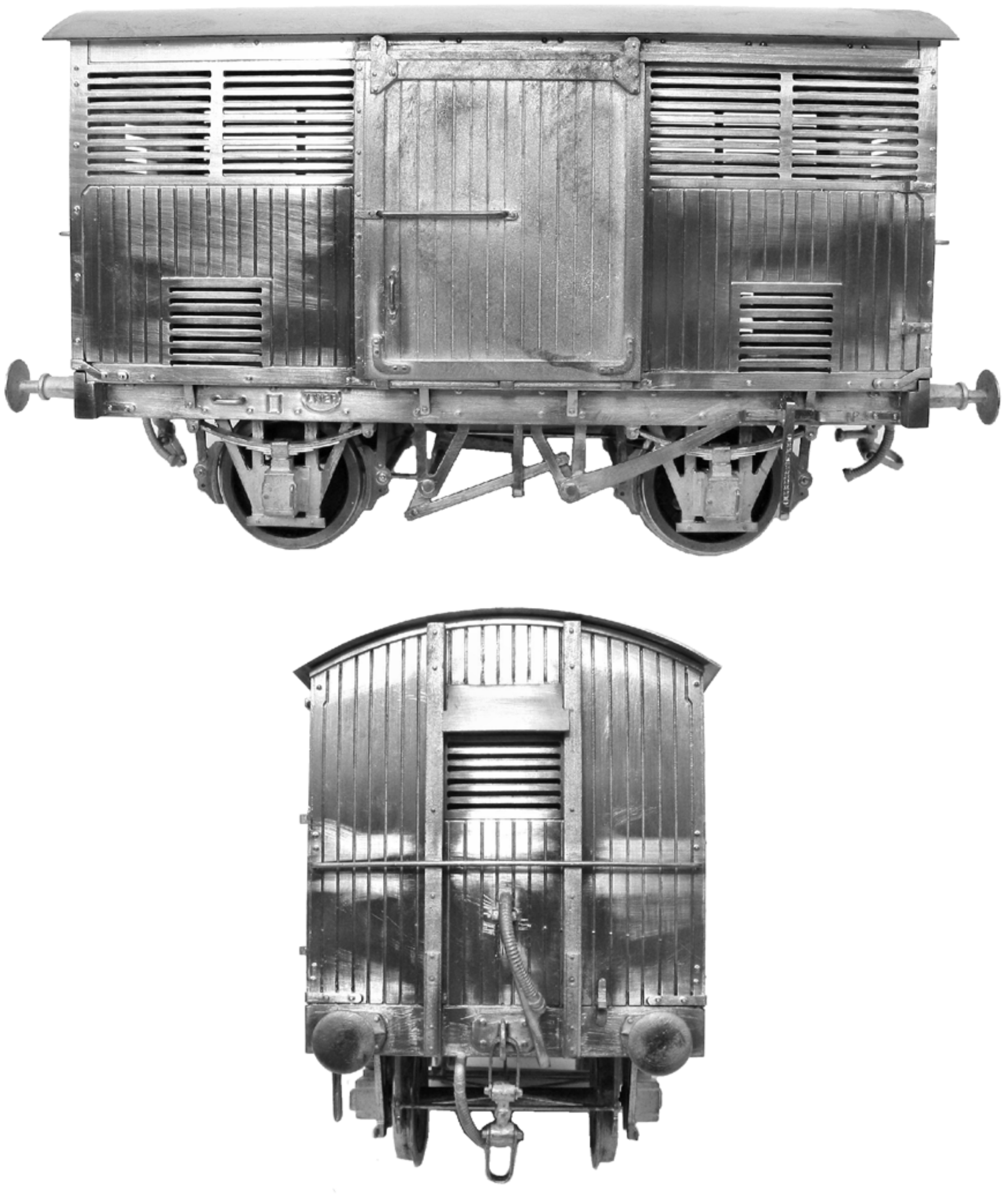


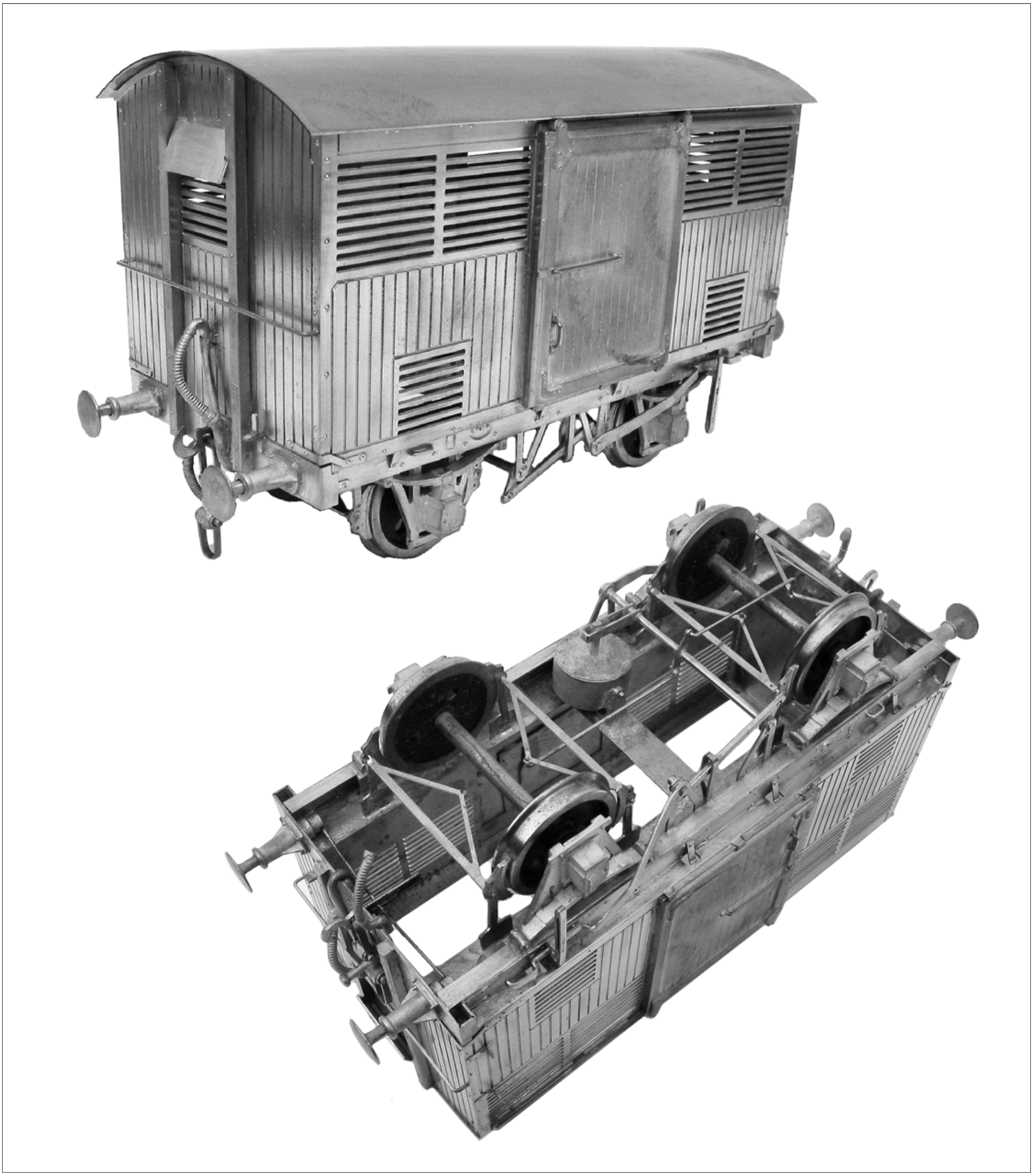
11. Painting is a vast subject that cannot be covered fully here. The important thing with a metal model is to get a good base coat of primer. Hopefully you have been cleaning up and washing the model at the end of each modelling session, but it will still need thoroughly cleaning before painting. I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

12. Make a floor from the quality card that the etch was packed on to and glue inside the body 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. A longitudinal partition, painted black, can also be fitted to prevent seeing daylight through the louvres.





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, 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.

Jim McGeown