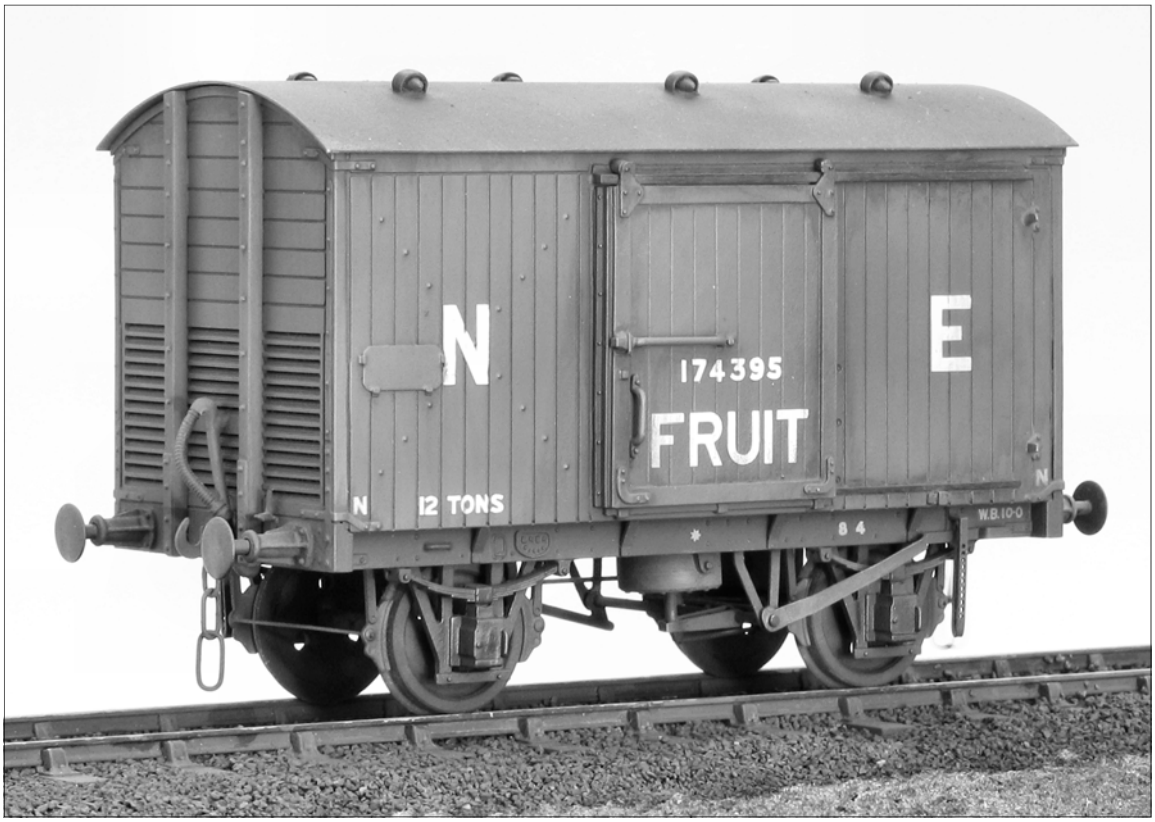
CONNOISSEUR MODELS

- 0 Gauge -

LNER 12 Ton Fruit Van



PROTOTYPE. These 10ft wheelbase, wooden underframe vacuum braked ventilated vans were built in large numbers during the 1930's. They lasted well into BR days and were used throughout the LNER system to destinations all over Britain.

Vans of this kind could be found individually on the most bucolic branch line as well as formed into long fitted main line freight trains. They were XP rated and so could run in local passenger trains and a couple of these vans tacked onto the rear of the afternoon branch line local to convey this urgent traffic to the junction would be a common sight.

KIT. The etched body components are designed with overlapping and interlocking joints to help assembly, which is very straightforward. The sliding doors are white metal castings. A pre-formed brass roof is supplied.

Wheels are required to complete. 3'1", 8 spoke or 3 hole disc Wagon Wheels (Slater's Catalogue Number 7121 or 7122). Available From Slater's Plastikard, Old Road, Darley Dale, Matlock, Derbyshire, DE4 2ER, Telephone 01629 734053.

Connoisseur Models, 1 Newton Cottages, Nr Weobley, Herefordshire, HR4 8QX, Telephone 01544 318263.

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.

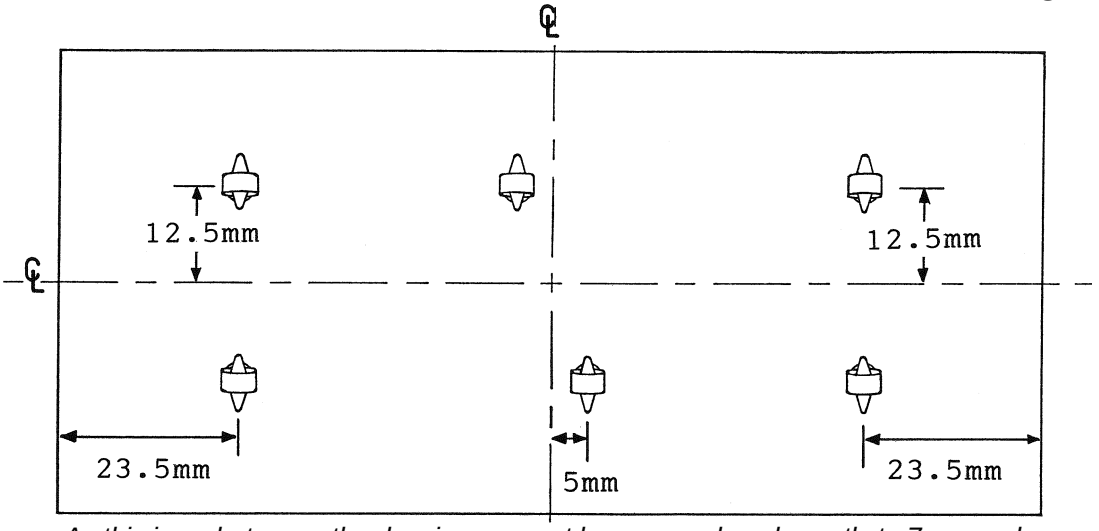
Other useful tools include a bench vice, a good pair of tweezers, a set of Swiss files (get a full set of cheap ones and then buy quality replacements for the three that you use the most), a pin vice with a selection of drills from 0.5mm to 2.1mm plus a few larger sizes that you use regularly (2.6mm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

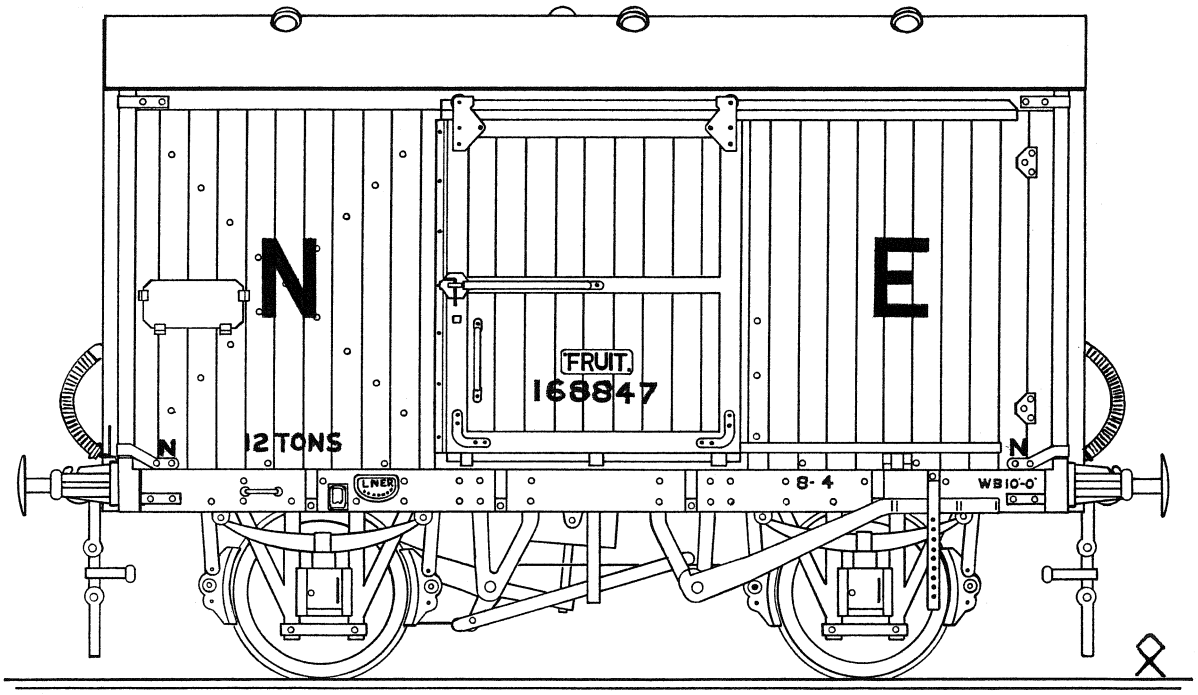
A better alternative is to solder your white metal castings using Carrs 70 degree low melt solder and Carrs red label white metal flux. The iron should be run at a much lower heat so that you do not melt the castings. I have a domestic light dimmer switch and plug socket fixed to a piece of wood, wired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

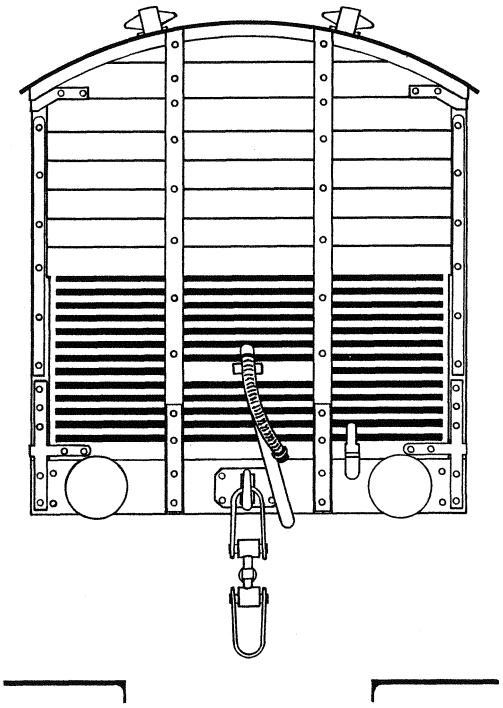
When attaching white metal fittings to brass the surface of the brass must be tinned with 145° solder, to allow the solder to grip. The surface of the casting at the joint should be burnished bright. The casting can then be soldered into place with 70° solder and fillets of solder run into any gaps with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

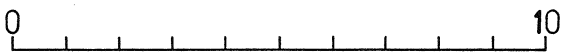
LNER 12 Ton Fruit Van Roof, Side and End Scale Drawing



As this is a photocopy the drawing may not have reproduced exactly to 7mm scale







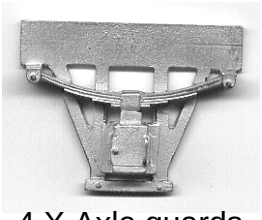
LNER Livery. Bodywork including solebars and headstocks, Red Oxide. Roof, white later grey. Running gear and buffers, black. Lettering, white, pre 1936 as drawing. Post 1936 the 'NE' was reduced to 4", placed over '12T' in 3" which in turn was above the running number in 4". All to the bottom L/H corner with 3" spaces between lines.

BR Livery. Bodywork, Bauxite. Roof, grey. Lettering, white. 12T and number preceded by E in the L/H corner, wheelbase and tare weight in the R/H corner.

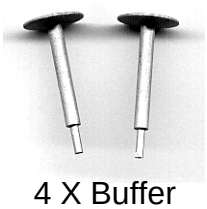
Transfers for LNER & BR lettering are available from the Historical Model Railway Society, Brian Webb (*volunteer sales officer),* 8 Gilpin Green, Harpenden, Herts AL5 5NR. Send SAE for list and order form or they are stocked by some specialist retailers. These are Pressfix type and you will require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

LNER Fruit Van Parts Identification and Casting Check list

1 X 4” length 1.6mm brass rod (brake cross shafts). 1 X 10” length 0.7mm brass wire. 1 X 6” length spring steel wire for buffer springing (may be tarnished). Pre-rolled brass roof cut from brass sheet 63mm X 127.5 approximate.


4 X Axle guards


4 X Buffer Bodies


4 X Buffer Heads/Shanks


4 X Buffer Retaining Collars


1 X Vacuum Cylinder

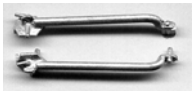

2 X Vacuum Cylinder supports


4 X End Stanchions


2 X Door Runners


2 X Doors

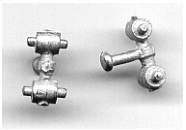

2 X Early Catch & Rail


2 X Later Catch & Rail


2 X Central Door Brace


2 X Door Handle


2 X Door Guide

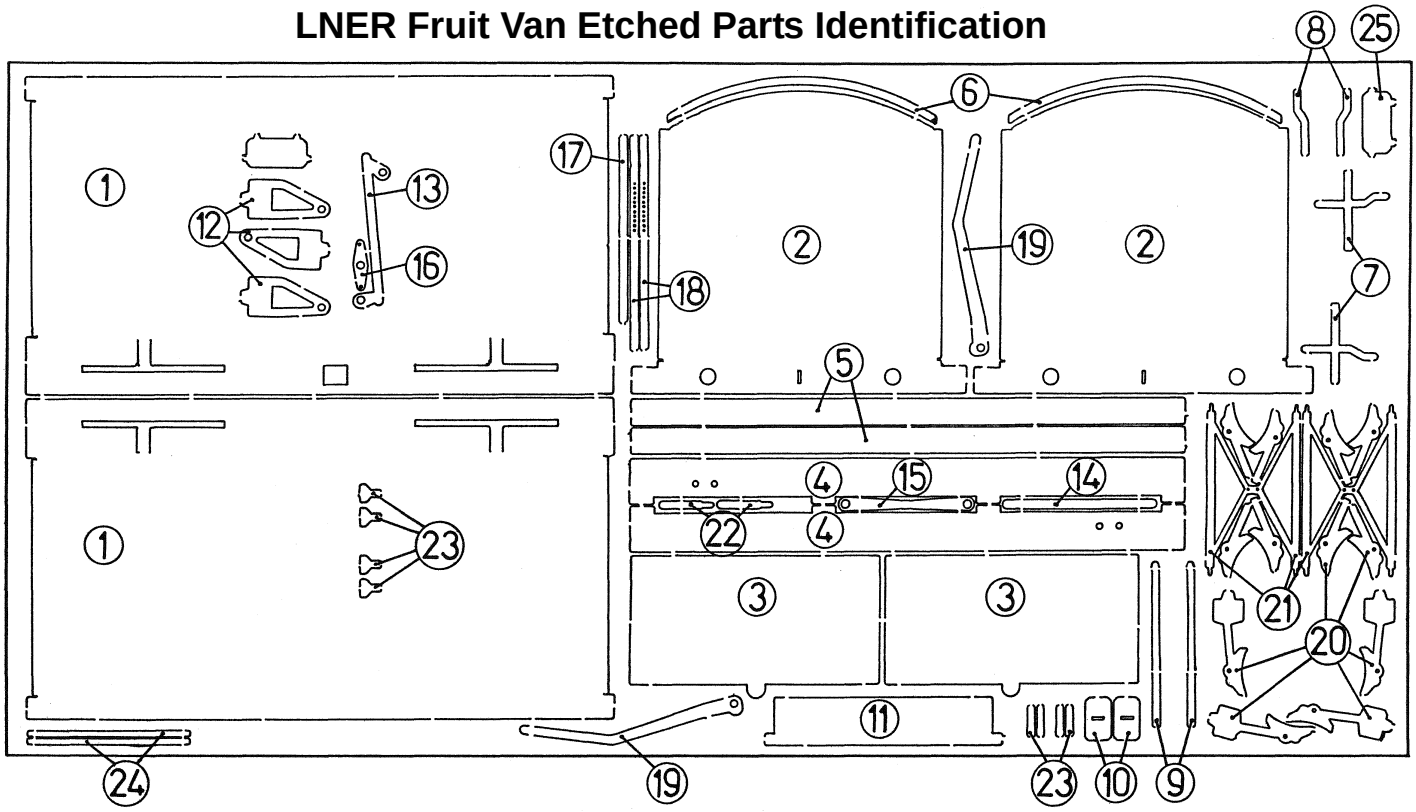

2 X Screw Coupling Centres


6 X Roof Vents

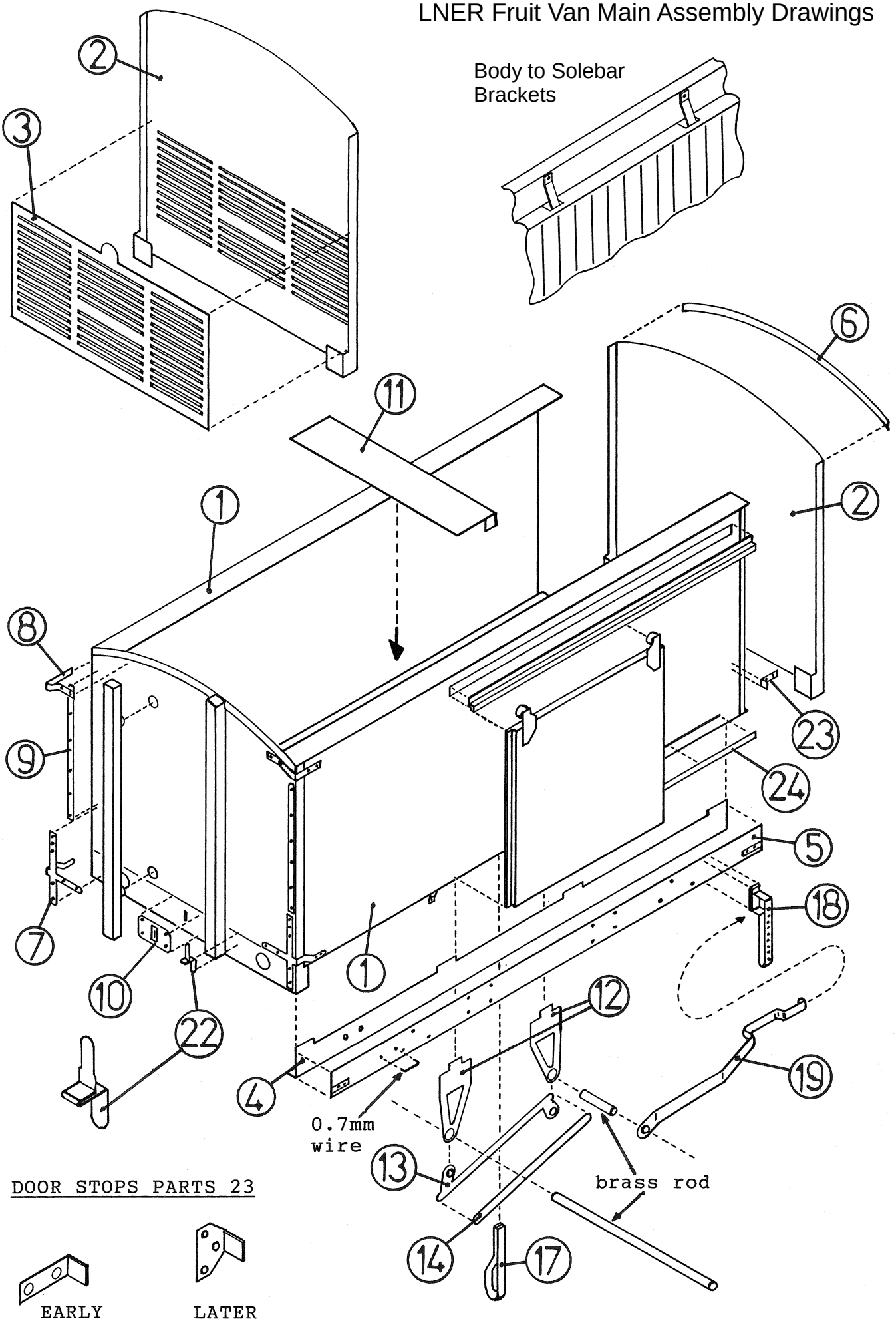

2 X Vacuum Brake Pipes

When I made the centrifugal moulds to produce a full set of castings for this wagon I took a bakers dozen approach to the number of sub masters I placed in each mould. So you should find extra castings to guard against accidents & mishaps but the quantities listed are the minimum required for the wagon.

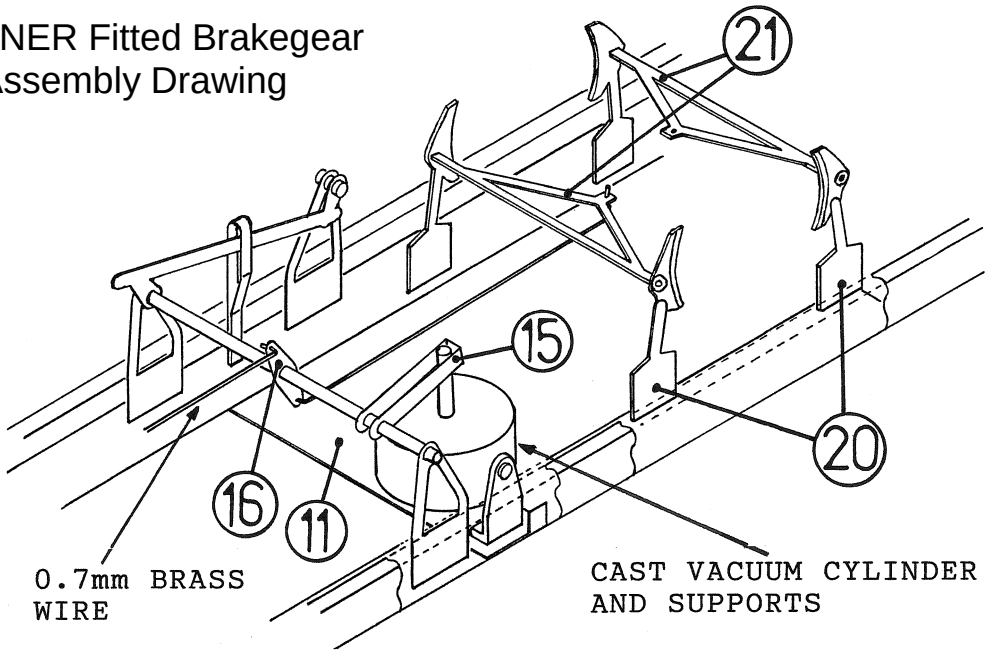
LNER Fruit Van Etched Parts Identification



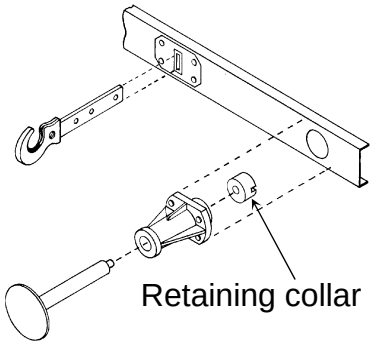
LNER Fruit Van Main Assembly Drawings

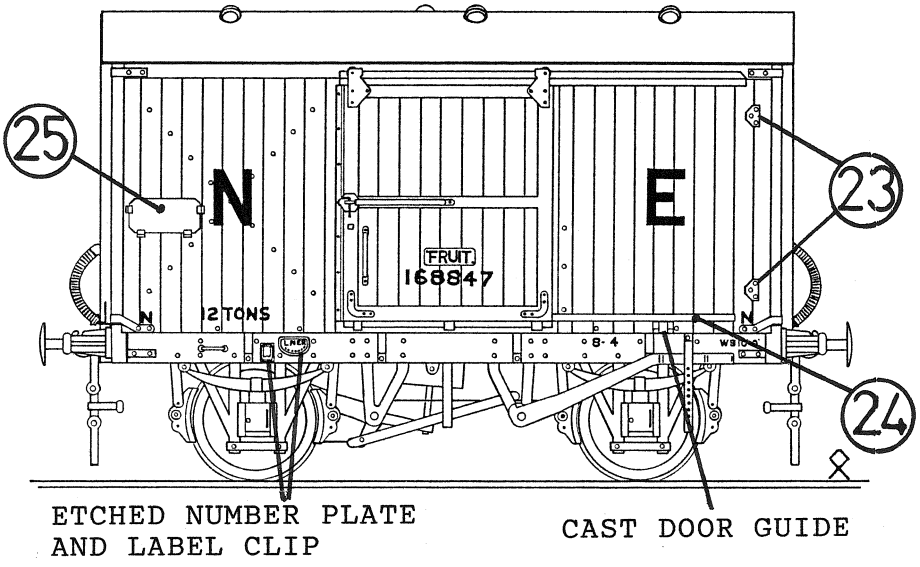


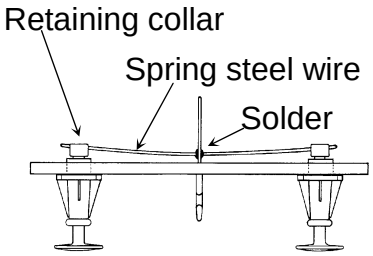
LNER Fitted Brakegear Assembly Drawing

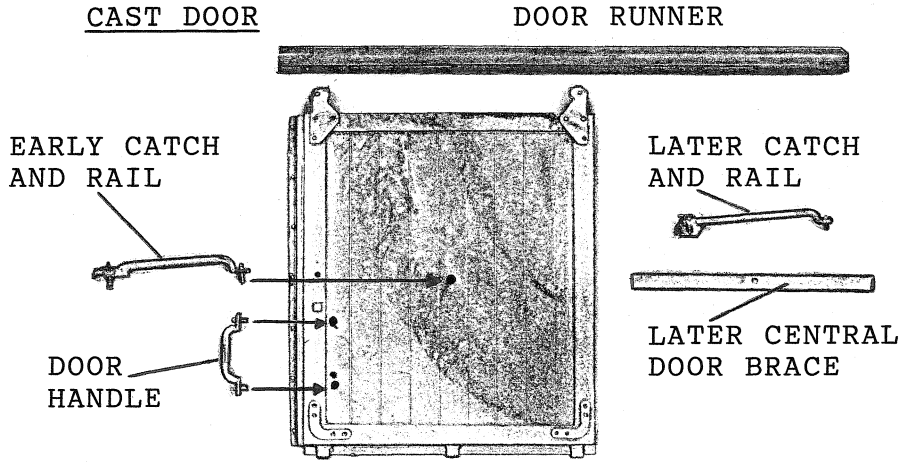


Buffer Assembly & Springing









Drill out blind holes from rear to suite handles and rails

LNER Fruit Van Suggested Assembly Order

1. Emboss bolt head detail on the sides (parts 1) and on the four solebar to body brackets. Then fold top and bottom through 90°. Emboss bolt head detail on the ends (parts 2) and then make the side folds. You may find it useful to deepen the fold lines by running a triangular file up them. This will reduce the amount of pressure required to make the fold. Now solder (part 3) behind the end louvers. Use the four holes to help you to line up part 3. Tack solder first and check from the front that all louvers line up and are blocked off equally. This should give the impression that the louvers are individual slats angled upwards.

Now join sides and ends together. Tack solder the bottom of the sides to the end first. Check that everything is square and then solder the overlap joints between sides and ends. Work from the bottom to the top and solder about $^1/_3$ of the joint at a time. This should prevent any distortion or bowing of the side at the joint. Check that the body is still square as you make these joints.

2. Fold solebars (parts 4) and then fit detail overlay (part 5). There are 4 push out bolt heads on the overlay. Fit horse hook made from 0.7mm wire. Fold down body to solebar brackets and then fit solebars to body. Trim ends of solebar to give a snug fit between buffer beams. Note that bolt head detail is different for each side. This is to line up with the vee hangers. Refer to main drawing as this shows the bolt head detail for the side with the two vee hangers. Then solder body brackets to solebar.

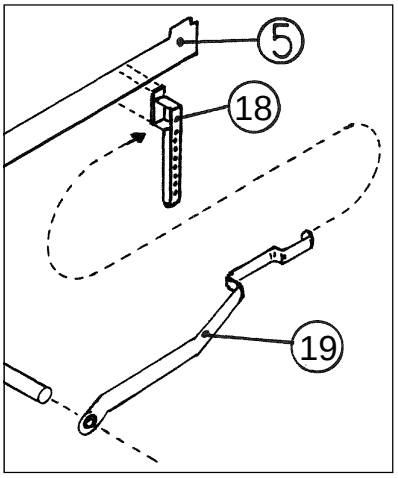
3. Fit (parts 6) to top of ends. Then fit corner strapping (parts 7 & 8). Fit strapping to ends first and then bend around the sides. Fit riveted strips (parts 9) and coupling plates (parts 10). Fit (part 11) this rests on the bottom of the body sides and runs across the body. This will support the cast vac cylinder. Fit cast end stanchions. File the top to clear top batten and blend in with roof curve.

4. Fit two vee hangers (parts 12) opposite each other. Solder (parts 13 & 14) together. Pass a length of brass rod through vee hangers, fitting (parts 13,14,15 & 16) onto the rod. Use part 13/14 to help position the third vee hanger and then fit a length of brass rod through this vee hanger. Fit cast vac cylinder and supports locating onto part 11. Form up and fit safety loop (part 17).

5. 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. Check that the axles are parallel and the wheel centres are about 70mm apart, there are etched centre marks on the underside of the body that I find useful to eye up to. Place the wagon onto a flat surface and adjust if necessary, by re-soldering each axle guard until the wagon sits without rocking, when happy solder solid.



6. Fold up the brake pin guides (parts 18) note that the bottom 180° fold is a curved bend and there is an etched mark to locate the centre of this bend. I make this curved bend using a pair of round nosed pliers and then gently squeeze the bend tighter with flat nosed pliers. Reinforce the folds with 60/40 solder and fit to solebar with the top locating in the hole on the underside of the floor.

Dress the cusp off the brake levers (parts 19) to 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.

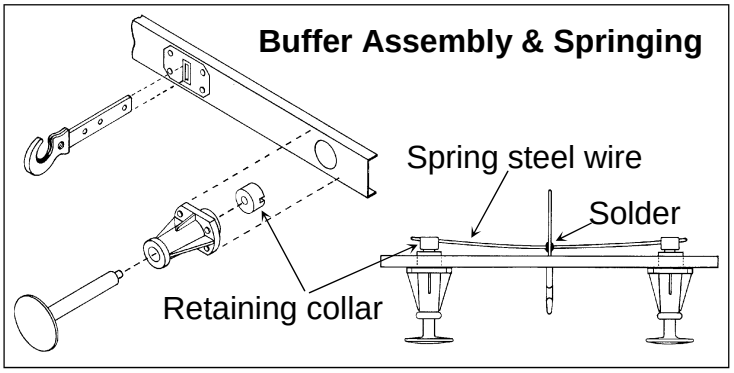
Solder together the two parts of the brake hangers (parts 20) then fit into slots on the underside of the body. Fit them so that the brake blocks are just clear of the wheels. Spring brake yokes (parts 21) between brakes and then fit linkage made from 0.7mm brass wire.

7. Fold up the lamp brackets (parts 22) noting that the centre fold is a reverse fold and the brackets position is marked on the buffer beam. 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 an fit the door stops (parts 23) note that there are early and later types and there are etched location marks on the body sides. Fit the door rubbing strips (parts 24) the full metal thickness strip locates into an etched groove in the body side.

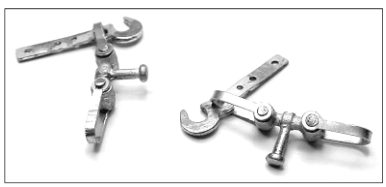
Fit cast door runner into etched rebate at the top of the body side. Fit handles and rails to door. Early vans had a plain door with an horizontal rail. Alternative castings are provided for this rail featuring early and later door locks. Later vans had a central door brace, some with an horizontal rail (use rail castings but cut and shorten one end) others had an horizontal and then vertical rail (use brass wire). Check a photo of your chosen prototype and you should find that with a little ingenuity the castings provided should cover all door variants. Fit cast door by hanging it over the door runner and then fit cast door guides.

Fit notice boards (parts 25). These were not fitted to all vans and the position varied, so check a photo. These would be lettered something like “return empty to MARCH or PETERBOROUGH, LNE”.



8. Open out holes in buffer beam to take buffer body casting. 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. Fit the cast vacuum brake pipes

Cosmetic screw coupling. Solder both halves of each hook together and if necessary round the slot so that the link will swing freely and then 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.



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.

Fit etched number plate and label clip to solebars.

9. I have rolled the roof in my rolling bars but you may find that a little work with finger and thumb is required to get the curve even. With reference to the main drawing mark out and drill holes in roof then fit cast vents. Solder the roof to the body at each end. If you wish to solder the roof to the sides spot solder in one place only. If you try to seam solder the roof to the sides you will find that this bows the roof downwards.

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 (as hot as your hands can bear) water 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 (avoid cold, damp or humid) day. 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.

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.

Prototype References. A Pictorial Record of LNER Wagons, Peter Tatlow, OPC, ISBN 0-92888-92-7, Page 39.