CONNOISSEUR MODELS

- 0 Gauge -

LMS Diagram 1657

20 Ton Brake Van

Prototype. 950 vehicles were built between 1927 and 1931 .They lasted well into BR days. As they got older and more Dilapidated extra strapping was applied and this is included in the kit .

Kit. This is a very straightforward kit to build .the fit of all parts is very good .
A preformed brass roof is included ,as is the straight brass wire for handrails
This kit would be an ideal next step from a simple four wheel wagon .

Wheels, 3'1", 3 hole disc (7122) are required to complete, Available from Slater's Plastikard, Old Road, Darley Dale, Matlock, Derbyshire, DE4 3PG, Telephone 01629 734053.

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

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 scratch builder 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 fiber 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.

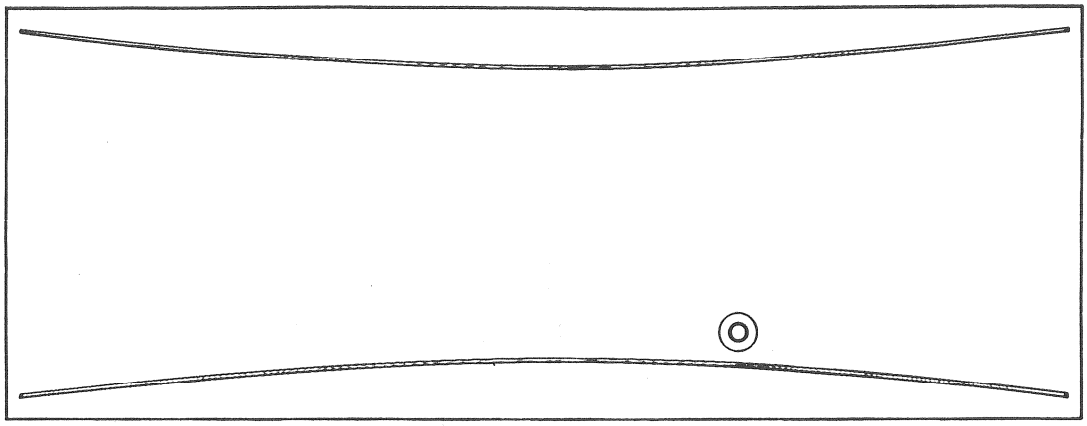
Three-dimensional parts are formed by folding. On an etched brass kit, the fold lines are normally half-etched on the inside of the fold. You'll be able to fold most parts using smooth-jawed pliers. For longer parts folding bars are desirable.

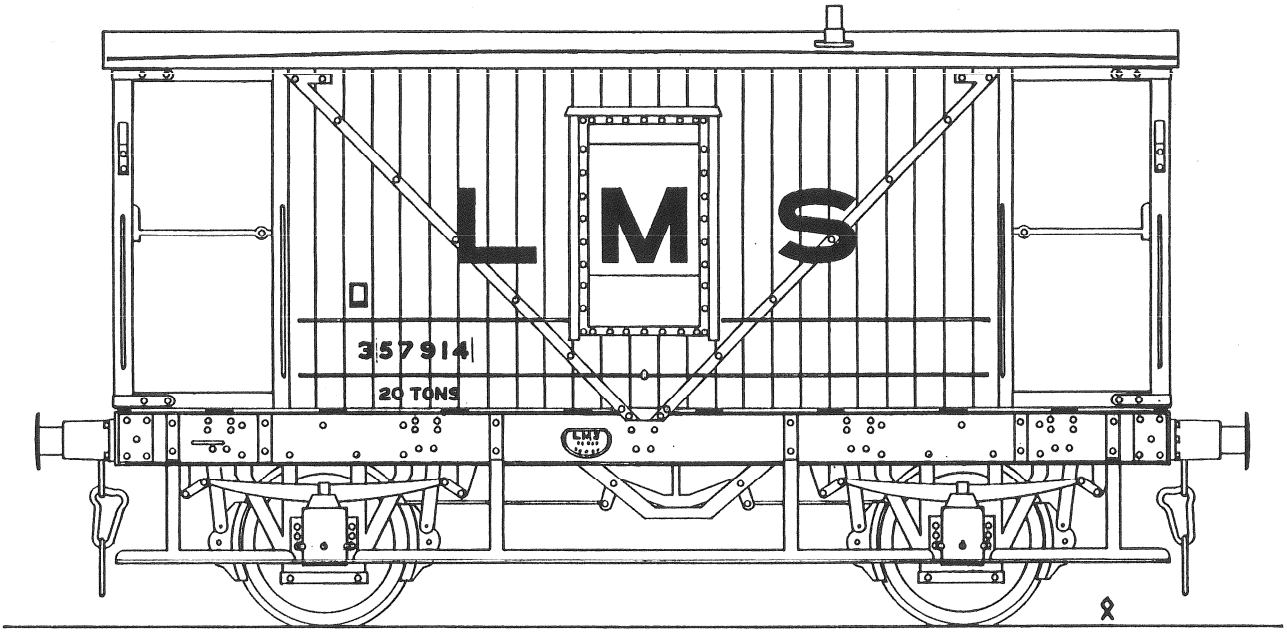
Other useful tools include a bench vice, a good pair of tweezers, a set of Swiss files (get a full set of cheap ones and then buy quality replacements for the three that you use the most), a pin vice with a selection of drills from 0.5mm to 2.1mm plus a few larger sizes that you use regularly (2.6mm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

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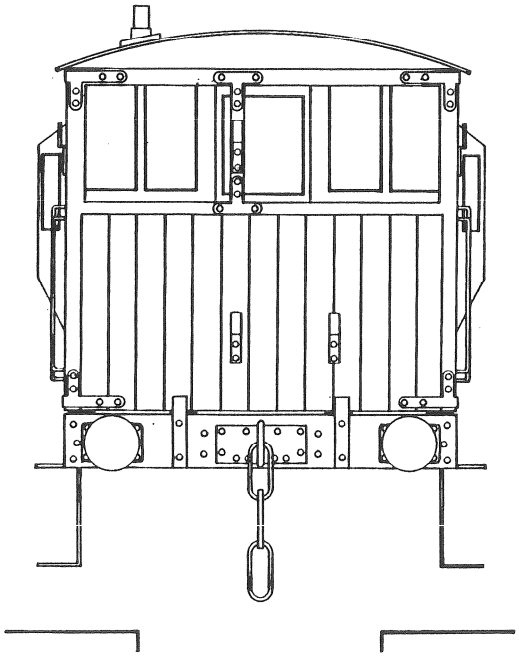

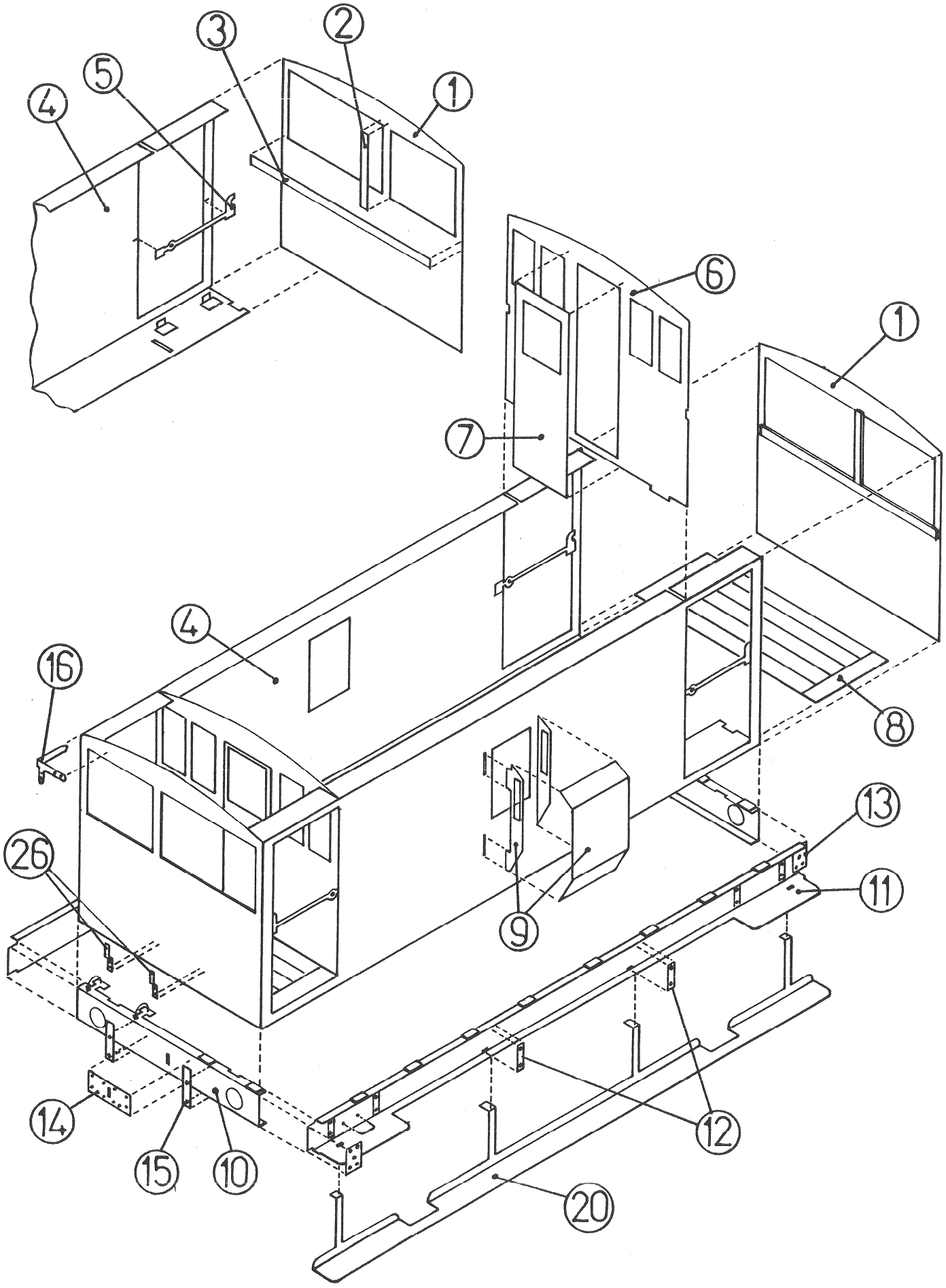
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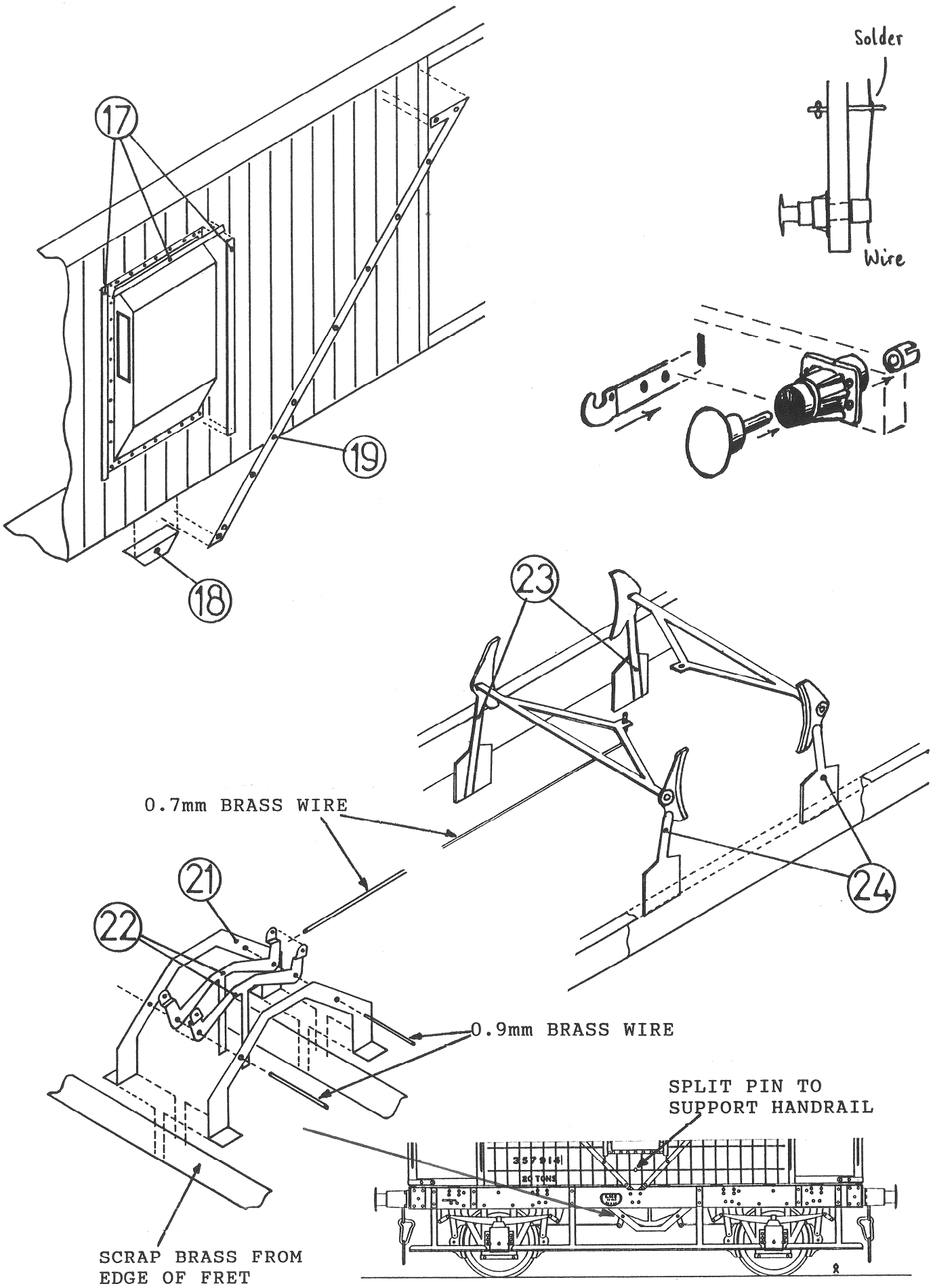
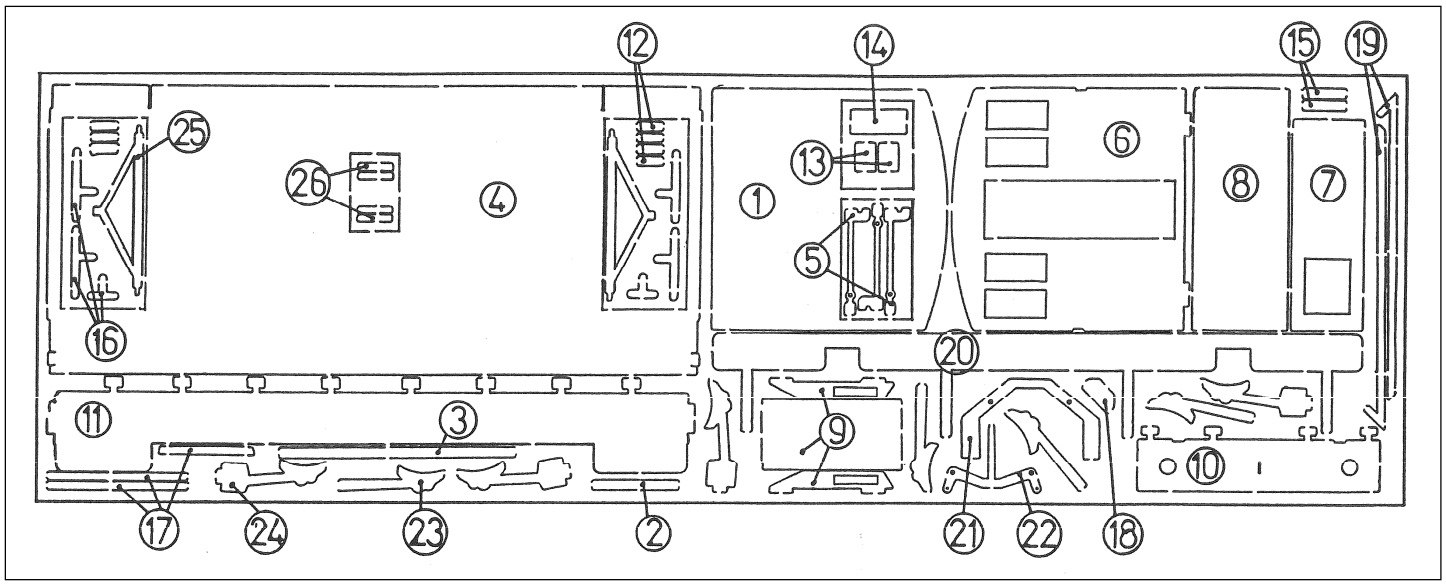

17
19
18
Solder
Wire
23
24
0.7mm BRASS WIRE
21
22
0.9mm BRASS WIRE
SPLIT PIN TO
SUPPORT HANDRAIL
SCRAP BRASS FROM
EDGE OF FRET



Suggested order of assembly

1, Solder strips, parts 2 and 3, to the inside of the van end *(these are to represent the thicker timbers of the framing)*. Then fold through 90 degrees the top and bottom of the van sides, Parts 4.

Fold up the two small tabs in the doorways *(these support the veranda floor)* then fold down the small tabs at the ends of the bottom strip *(these help locate the buffer beams)*. Solder the veranda safety bars into doorways *(note etched marks to help locate them)*. Push out rivet detail around duckets .

2, Fit cabin doors, parts 7, to the inside of cabin ends, parts 6. Fit cabin ends between sides *(locating into slots)* then fit van ends. Tack solder these components first and check the body is square and untwisted.

Then fit veranda floors, parts 8, *(these can be fitted from the top and twisted into place to rest on fold up tabs)*. Now solder all joints solid, but keep checking that the body is still square and untwisted.

Fit ducket sides and front, parts 9. File an angle onto the top and bottom edges of the ducket front *(to help with blending into the van sides)*.

3, Push out rivet detail and then fold through 90 degrees, the top and bottom edge of the buffer beams, parts 10, and sole bars, parts 11. Then fold through 180 degrees and solder the small rectangles along the top edges. Then remove tabs and clean up with a file. *(on the prototype the body was mounted onto the under frame, with small blocks of Indian rubber and these small rectangles of brass represent them)*.

Fit the foot board bracket detail, parts, 12, to the sole bars *(but keep slots clear).* Also fit shunting horse hook tether, made from 0.7 wire. Now fit buffer beams to body underside *(note location tabs)* and then fit the sole bars, parts 11, between these *(if required file the underside of the body to achieve snug fit)*. There are four fold down tabs on the underside of the body to help locate the sole bars at the correct distance apart . Fit parts 13, into the corners of the sole bars and buffer beam.

4, Fit parts 14 and 15, to the buffer beam *(but keep the slot for the coupling hook clear)*. I now fit the corner strapping, parts 16, then the battens around duckets, parts17, and side strapping, parts 18 and 19 *(use the main drawings for the positioning of these parts). When built the vans did not have all the strapping fitted but as they got older and more dilapidated. Extra strapping was applied so check with a photo from your chosen modelling period*.

Fold up and fit the lower footboards, parts 20, locating the support tops into sole bar slots.

5, Make up the central hand brake linkage, parts 21 and 22 *(as both sides are the same you will have to make the folds for one side with the fold line on the inside and for the other on the outside)*. Support linkage in the centre of the body with scraps of brass taken from the edge of the fret.

I now fit the axlegaurds. Select which axle box front you wish to use and fit this into the w iron (a*s a general rule split boxes in the LMS days square fronted in BR days)*. Drill out hole 2.6mm to take wheel bearing. You will also have to file a notch into the top of each axlegaurd to clear the back of the buffer spindle when fully depressed *(to establish this, now would be a good point to pre assemble buffers and open buffer beam holes)*.

Now tack solder two axlegaurds to one sole bar. Fit bearings, wheel sets and axle guards to other sole bar *(check axles are parallel).* Place on a flat surface and adjust tack joints until the van sits without rocking. When happy solder solid *(I fit the axle bearings into the hole with a blob of Evostick. As this takes a little time to set I can make adjustments and leave the wagon on a flat surface for the glue to harden).*

Solder parts 23, behind the brake blocks and hangers, parts 24. Then fit into slots to line up with the wheels *(hold with miniature crocodile clips).* Spring brake yokes, parts 25, between the brake hangers. Then connect to handbrake linkage with 0.7mm wire.

6, Fit the handrails made from 0.7mm wire and the lamp irons, parts 26. Then fit buffers and couplings. Drill out buffers to accept spindle, fit collar to end of the spindle, then fit buffers into buffer beam. Laminate together coupling hooks then fit links *(note etched instanter link).* Then fit hook into buffer beam slot and retain by fitting spring wire. Fit etched number plate and label clip.

7, Drill a hole in the roof to mount the cast chimney. Make rain strips from wire . Leave roof off until after painting , then glue into place.

References
An illustrated History of LMS wagons , Volume one . R.J. Essery. ISBN 86093-127-7.
Pre-Nationalisation Freight wagons on British ,D. Larkin. ISBN 0-85153-302-7.
British Railway Wagons, No 5, Cattle and Brake Vans , G. Gamble. ISBN 1-900298-05-8.
Get them from your library !

Livery
Pre-1936, LMS Freight grey, body, sole bars & buffer bodies. Black running gear below sole bars ,footboards, buffer heads . Dark grey , roof . White ,handrails , lettering , safety bars . Dirty wood , floor . Lettering as drawing .
Post 1936 . Bauxite , body , sole bars , buffers. Roof ,running gear etc, as pre– 1936. Lettering ,4 inch initials and number , 3 inch 20 ton . Lettering is on the left hand bottom of the body .
Sample numbers , 357701-10 , 357712-357884 , 357886-357950 .
In BR days , the number would be prefixed by M, M357701.

Can You Help Me?

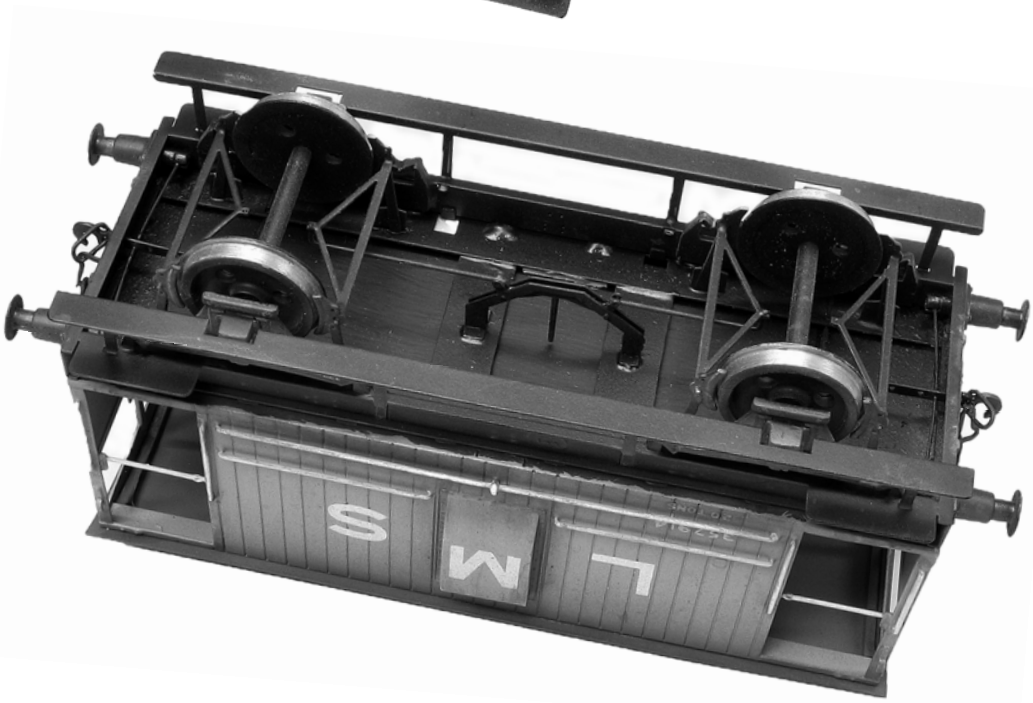
If you have enjoyed building this kit and have been satisfied with the quality, I would be most grateful if you could recommend it to your friends and fellow modellers. Although my kits are not perfect, I try to put a lot of time and effort into producing them. If I can get extra sales of a kit through 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


L M S
357914

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