Caley Coaches

'True Line' kits in etched brass

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Caledonian Railway
Pickersgill 6-wheel Passenger Brake Van

CC9 Building instructions

Part 1 General

1.1 Read the instructions and identify all the parts.

1.2 Soldered construction is recommended. I use a 25W Antex iron with CARR's 188 solder and CARR's green label flux. White metal parts can be joined to brass with low melt alloy (as sold for white metal kits) if the brass is first tinned with the above solder. Note that it is often easier to tin small parts before they are removed from the fret.

1.3 Some parts will need to be glued (e.g. the roof vents) and either Superglue or Epoxy is recommended. Thixofix Contact Adhesive is useful for finally fixing the roof in place as it allows time for everything to be lined up before going off.

1.4 You will find the following tools useful :-

a) Soldering iron & solders as outlined in 1.2 ,
b) Fibre-glass brush and refills for cleaning the brass prior to soldering.
c) Craft knife or large scissors for removing parts from the frets ,
d) Needle files for filing off the remains of the tags ,
e) Small, cheap paintbrush for applying the flux,
f) Needle in a pin-vice, used like a drill, for gently enlarging small holes,
g) Pair of 12" long bending bars—very useful for making the longer folds.

1.5 A half-etched line is provided where you are required to fold up parts. Unless otherwise stated by the specific instruction, this line goes to the INSIDE of the fold and all folds are at 90°.

1.6 Before tinning any parts clean them with the fibre glass brush.

1.7 Thoroughly clean the model using an old toothbrush and warm soapy water after EVERY work session.

Part 2. Floor and Solebars

2.1 Identify and remove the main floor unit from the fret.

2.2 Fold up the long flange at each side to which the lower body will later be attached. Use one of the interior bulkheads as a guide to the angle of the fold.

2.3 Fold up the tabs to which the ends will later be attached.

2.4 Fold the solebars into "L" shapes and press out the rivet detail from behind. I have found a slightly blunt map-tack most effective for this.

2.5 Locate the solebar tabs into the slots in the floor, solder in place and fold down the triangular brackets from the floor to meet the solebar fronts.

2.6 Tin the side and end location tabs.

2.7 Fold down the axleguard mounts from the floor.

Part 3 Body

3.1 Each end is assembled from two layers. On each inner end bend the lampirons and steps (one end only) forward at 90° such that they will pass through the slots in the corresponding outer end. On the outer ends, press out the rivet detail from behind as per section 2.4. Tin the outside of the inner ends and the inside of the outer ends.

3.2 Solder the inner end with steps lightly onto the location tab at the end of the floor with two large projections - the bottom steps. It should be able to swivel in a vertical plane until the sides are fitted. Fit the outer end over all the projections and sweat to the inner end. Repeat with the other end parts at the other end

3.3 Use a thin piece of scrap brass as a spacer and fold the lamp irons up parallel to the body.

3.4 Bend the side location tabs to the rear.

3.5 Make up (from brass and wire) the jumper cables and fit to the ends.

3.6 Fit the handrails on the end without steps.

3.7 Drill two 0.45mm holes to take the lower ends of the handrails on the ends with steps. The upper end of these handrails locate on the roof and so are among the last parts fitted.

3.8 Take the sides and remove any parts from inside the window frames, remembering to dress the tabs.

3.9 At each door score the continuations of the door edges onto the lower body side using a straight edge and LIGHT pressure with a sharp knife.

3.10 Form the tumbleholme in the lower body sides. Lay the bottom edge of the side on the edge of a 12" rule with the inside facing up, take a length of central heating or similar pipe and lay it on the coach side and roll gently from the waist towards the bottom. This should produce a nice even tumbleholme.

3.11 Tin the inside of the lower body side and ends.

3.12 Take one side and solder one edge to an end, adjusting the end until vertical.

3.13 Solder the bottom of the side to the locating tab. I find this easiest to do while pressing the very bottom of the side against the edge of a piece of wood.

3.14 Solder the other edge of the side to the other end, adjusting as required.

3.15 Repeat 3.12 to 3.14 with the other side. You will not be able to adjust the ends this time but they should be in alignment.

3.16 Solder the ends more firmly to the underframe.

3.17 Fold up the small tabs which you fitted through the ends at stage 3.2 and secure with a little solder.

3.18 Fold the ducket sides at 90° to the ducket front. Bend the front panels to match the outer profile of the sides and solder up.

3.19 Locate the duckets into the slots in the body sides and solder from the inside.

3.20 Take the roof and file small recesses in the flange which sits inside the body to clear the ends. Check the fit of the roof. If necessary dress the tops of the ends with a file, until a good fit is achieved.

3.21 The basic body is now complete !

Part 4 Axleguards

4.1 Fold up the 3 axleguards and solder the waisted bearings in place.

4.2 Fit the fixed (number 1) axleguard into its locating slots and solder in place.

4.3 Drop the centre (number 2) axleguard over its locating lugs and fold over the top part of each lug to secure it.

4.4 Drop the number 3 axleguard over the rocking knife edge and secure by folding the tabs over.

4.5 Cut a piece of phosphor bronze wire 45mm long and thread it through the two small holes in each axleguard. Solder to the number 1 and 3 axleguards only.

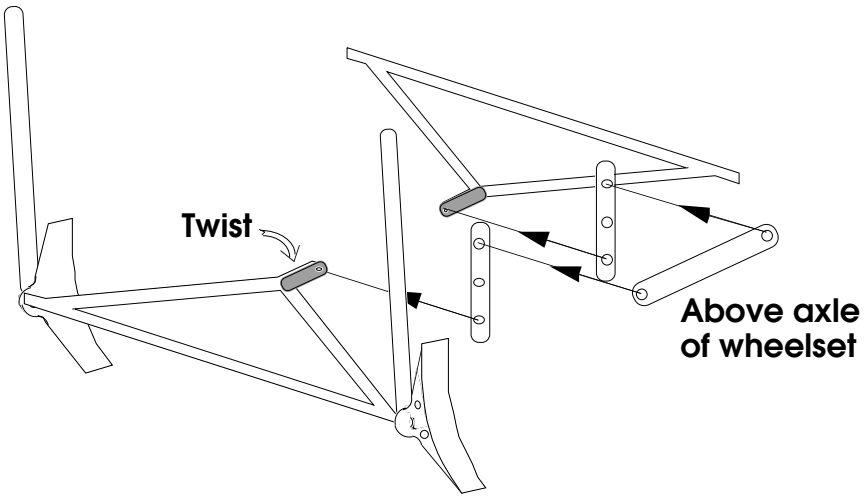
4.6 Fold down the small "ears" from the floor to an angle of about 45° such that they engage the wire. Once the van is complete and under test, the load on the centre axle can be optimised by adjusting the angle of these ears.

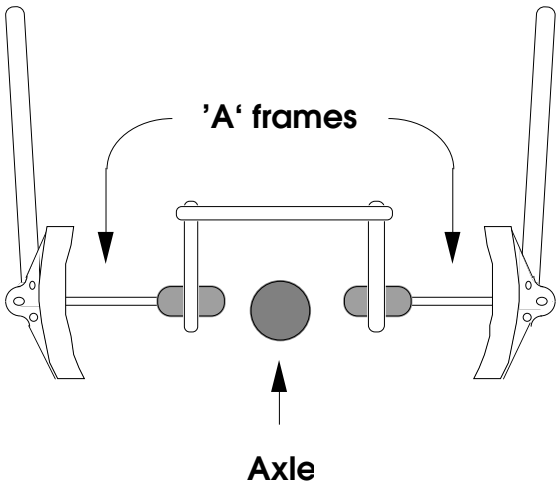
Part 5 Underframe Fittings

5.1 Fit the axleboxes and springs to the underside of the solebar in line with the axleguards. Since waisted bearings have been used there should still be enough free movement in the number 2 and 3 axleguards to allow the compensation to function.

5.2 Solder the brake hangers (12 in all) into the slots in the floor.

5.3 Assemble the brake gear as shown in the sketch.





5.4 Fit the two vacuum brake "V" hangers into their slots in the floor, fit the cylinder and make the operating rod from wire.

5.5 Fit two handles made from wire to each battery box front and then fold the sides round at 90°, solder each unit to a battery box base and then fit to the underframe opposite each other.

5.6 Using 0.45mm wire fit two braces at each side of the battery box between the floor and the battery box base.

5.7 When this kit was drawn there was a lack of information on the location of Westinghouse fittings and dynamo hence the locations for these are not indicated on the etch but I have now (January 1996) located a drawing of the underframe which shows these items and have updated the enclosed 4mm scale drawing accordingly but to make sure the locations are as follows :-

The dynamo was positioned on the centre line outside the wheels at the battery box end of the van with the centre of the generator 4' (or 16mm) from the axle.

The Westinghouse fittings were opposite the vacuum brake fittings. The outer edge of the reservoir (the tank like part of the casting) was 1'1" inside the outer axle with its

longitudinal centre 1'4" off the centre line of the van. The cylinder's longitudinal centre was 1'9" off the centre line of the van with the centre of the carrying frame 5'5" from the outer axle

Part 6 Footboards

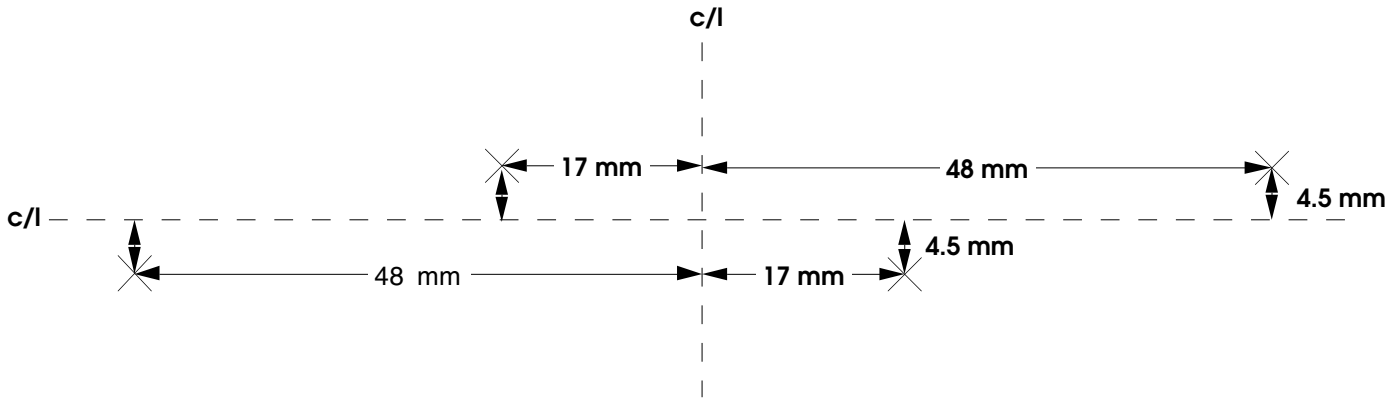
6.1 Fold up the ears of the upper foot boards and solder behind the solebars.

6.2 Fold up the back of the lower foot boards to 90°.

6.3 The lower foot boards have separate stanchions. Solder these to the half etched recesses in the footboards and then solder the tops to the recesses in the top foot board.

Part 7 Roof

7.1 Using the sketch below as a guide, drill holes in the roof for the ventilators and fit by glueing.



7.2 Mark the position of the rainstrip on the roof and glue 0.020" x 0.020" plasticard strip in place. Car lining tape could be used if preferred.

7.3 At the step end of the roof drill two 0.45mm holes for the handrails.

Part 8 Final Assembly

8.1 Paint body, underframe and roof according to period, line and letter. (See painting and prototype notes).

8.2 Fit the door and grab handles as indicated on the drawing.

8.3 Glaze the windows using the supplied Cobex.

8.4 The roof need not be glued to the body unless desired as it should spring into place.

8.5 Fit the handrails at the step end of the van.

8.6 Fit the wheels and test run, adjusting the load on the centre axle until reliable running is achieved.

Part 9 Painting by Peter Tatlow

(Note that while this section deals with the LMS livery many of the points covered can be applied to any livery - Jim Smellie).

I would suggest that the kit is completed except for the door handles, grab irons, plastic interior fittings and glazing. Thoroughly clean the metal work to remove all trace of soldering flux and grease, and dry off.

To achieve a satisfactory crimson lake it is important to apply a brown base coat. I have used a red oxide car spray, but something browner might be more appropriate. Follow this with crimson lake. Spraying is obviously the preferred method and , if adopted, 'little and often' is the motto to avoid runs. On completion of the lake a coat of gloss varnish should be applied.

Before commencing the lining, it is necessary to lay the coach body on its side and fix it, perhaps with masking tape, to prevent any tendency to move during the delicate operation of lining out. Top and bottom of the coach should be laid blocks of wood or books upon which to rest a straight edge just clear of the coach side. Better still, if you intend lining out a number of coaches, is to have a purpose made open topped box just large enough to accommodate any of your intended coaches.

The yellow is applied by means of a draughtsman bow pen to the full width of the actual or painted panelling. You will not achieve this in one stroke and several side by side should be put down until the desired width is arrived at. The full width of yellow line is suggested because it is easier to achieve and subsequently one can concentrate on fitting the black line down the middle of the broad line. The yellow and black lining can be a suitable modeller's paint or artist's goash let down, if necessary, to a consistency found to be satisfactory by experience applied by bow pen again. This consistency needs to be as thick as possible so long as it will still flow on a test piece from the pen. Another method for black is to use draughting ink in an appropriate size of stylus-type of drawing pen. Minor errors can be corrected by the delicate use of a fine brush, OO or less, afterwards. If the process becomes a complete disaster, the beauty of a metal kit is that you can remove all the paint with paint stripper and start again ! That is why I omitted the plastic interior parts. Hopefully you will be satisfied when another quick coat of gloss varnish is advisable before painting the underframe and ends/end details black. Apply the transfers and fix with another coat of varnish.

After this one is free to complete the coach as per section 8.

Part 10 Prototype Information

C.R. Number	1st L.M.S. Number	2nd L.M.S. Number
13	6309	34221
50	6339	34222
67	6353	34223
94	6376	34224
173	6437	34225
207	6460	34226

The first van, number 173, entered service in the half-year ending 06/21 followed by the other five over the next six months or so. All of them were in service by the end of the next half-year. The Caledonian didn't believe in wasting diagram book pages on vans just because of differences in body style and so these vans were allocated to diagram 18 along with other, older but functionally equivalent, 8'6" wide passenger brake vans.

These vans were electrically lit and steam heated when new but despite these seeming comforts they were disliked by the guards since the concrete floor made them chilly and rough riding. All were dual westinghouse and vacuum brake fitted to allow them to work through onto other lines.

Part 11 C.R. Livery

Although these vans do not have panel mouldings above the window line, it was C.R. practice to

'paint on' the mouldings. i.e. the edges of the upper panels were painted purple brown to match the waist panels. The edges of all the mouldings (including those painted on) were lined with a single yellow line, while the outside edges of the coach sides and bottom were given a thin red line.

Lettering was gold, shaded to the right and below in red, with white highlights. The van number was placed in the waist panel of the ducket with **C·R** centrally in the panel above it. The small panel in the waist moulding between the centre and double doors was grey slate.

When new the roofs were white. This, of course, would quickly weather to a grey/black in service. Underframes and bogies were black.

Part 12 LMS Livery

Soon after its inception the LMS adopted the old Midland colour of crimson-lake for its coach livery. All raised beadings were painted black and edged in a ⅜" pale yellow line. It is thought that the LMS carried on the C.R. tradition of painting on the panels above the window line. Ends were crimson-lake with steps etc. picked out in black. Roofs were generally painted lead grey above the rainstrips and black between the rainstrips and cantrail but again this would soon assume an overall muddy grey colour in service.

The insignia was applied in gold leaf transfers with the letters LMS (3" high) in the waist panel as near to the coach centre line as possible, probably on the ducket in this case. The number appeared twice in the waist panel towards each end of the van.

The foregoing describes the initial LMS livery but many changes took place before the demise of the LMS and are tabulated below. Remember, however, that coaches and van were only due for repaint about every 7 years and that in the late 30's and during the war it was quite usual only to 'touch up and revarnish'. Therefore each individual van would not sport every change and it is quite possible that some vans ended the war still fully lined out.

1923-8 As described.

1928 LMS now placed towards the left-hand end and the number towards the right-hand end.

1933 Coaches renumbered using plain gold transfers. Roof colour specified as metallic aluminium.

1934 Full lining discontinued. Coaches lined with a single ½" yellow line just below the cantrail and ½" yellow line just above the top of the windows. The top section of the waist moulding would be painted black and edged with ½" yellow lines. Note that the yellow for both lining and insignia is now a chrome yellow.

1936 End colour specified as black.

Wartime Roof colour specified as grey and lining discontinued.

1946 Simple lining reinstated but in straw yellow.

P.C. Models make an excellent range of LMS transfers which are recommended.

Reference: LMS Coaches, an illustrated history. Jenkinson & Essery (OPC, 1977)

Part 13 BR Livery

The only information about how B.R. treated these vans comes from a photograph in the collection of H.C. Casserley taken on 05/07/57 of M34223 at St. Rollox. This van has had much of its original panelling replaced by tounge and groove boarding. It looks to be in all over crimson and it is

certainly devoid of lining. The only visible lettering is the number about 3" high at the right hand end just below where the waist panel used to be (!). Immediately below this is the word "STOVE" in about 2" lettering.

It is worth noting that both upper and lower footboards are intact in this view unlike so many coaches which were stripped of footboards by the L.M.S.

Part 14 Acknowledgements

My thanks are due to Alistair Wright for the artwork and design, Niall Ferguson for the prototype and numbering information, Peter Tatlow for the painting notes, Robin McHugh for patternmaking, and to everyone 'in the trade' for making parts and advice available to me. I must also thank you for buying the kit!

Other items in the *Caley Coaches* range

CC1-CC8 A range of post-war Caledonian 57' corridor and non-corridor coaching stock, built 1921–23.

CC10-CC13 A range of 65' 12-wheel corridor "Grampian" stock which feature fully compensated bogies and detachable underframes and roofs. Other specifications are as for this kit.

CL1 Class 498 0-6-0T - the "Beetlecrusher" outside cylinder dock tank, first built in 1912 these were a long lived prototype lasting until 1962. The kit is mainly etched with high quality lost-wax cast fittings. The chassis can be built rigid or compensated.

CL2 Classes 812 & 652 0-6-0 - one (or rather two) of the Caledonian's workhorses, suitable for all freight work and (in the case of the westinghouse fitted batch) passenger duties. The kit includes alternative parts to enable either class to be built. Specifications as for kit CL1.

A range of profiled milled mainframes for easy compensation of several cast C.R. loco kits is also available as are many of the fittings from my kits - full details in my latest list (free but please send an SAE).

"Edinburgh and Glasgow" direct stock (i.e. 65' and 68' non-corridor coaches) may be produced at some time in the future as may 50' stock and Pickersgill's "Balerno" 4 wheel stock. Your comments as to which vehicles you would like to see are welcome but please remember that the earlier period 45' stock and Drummond 4 and 6 wheel stock is very well covered by John Boyle's range of "Decent Models".

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Jim Smellie,

October '89, revised January '96