

S106M—GWR Metro T17 5 Compartment Third—Guide

To be read in conjunction with the Ratio kit instructions and the *Shire Scenes* Coach and Chassis Guide. Please read all the instructions and familiarise yourself with the parts and options before bending, gluing or soldering anything. Slower curing 'gel' superglue (applied with a pin?) is recommended for brass. Folding is made easier by lightly scoring along the opposite side from the half etched line with a pointed instrument.

History

Between 1892 and 1902 around 200 four wheel coaches were built by the GWR to 6 diagrams for 'inner London services'. At this time the GWR ran steam trains over the Hammersmith & City line, the Main Line & City and the Middle Circle line; all of which are now part of the London Underground 'surface' lines. They were mainly built as dedicated, close-coupled sets of 8 or 9 vehicles. These coaches are usually referred to as 'Holden' designs after the GWR carriage superintendent James Holden.

The design followed an earlier 'Holden' pattern where seating capacity was optimised and the loading gauge of London's Underground system respected. They were lower and wider than contemporary 4 wheel coaches and doors had curved upper frames so that they could be opened in tunnels should the train need to be evacuated.

With the electrification of the 'inner London lines' the coaches became redundant and in two tranches (1902 and 1920) they were cascaded into the regions. Photographic evidence suggests that many received full buffing gear and were incorporated into rakes for local and branch line service. Some rakes, however, remained close coupled, perhaps with one or two coaches removed, and were used for peak services around Birmingham, Cardiff and Bristol. At least one close-coupled rake was photographed in service with electric lighting installed.

By the 1930s withdrawal was well under way although several coaches survived in Welsh branch line service and workman's trains, and many were used in engineering and signaling departmental service. One S17 at least was photographed in Burry Port in workman's service in late 1951.

Specific Instructions for Coach Sides

These sides and ends require rather more 'modeling' than the some of the other replacement sides. They are intended for use with the Ratio 613 'long chassis' kit; SR613 from *Dart Castings*. These vehicles had a 16' wheelbase so, the Ratio chassis has to be 'cut and shut'; this process is covered in the guide. Bear in mind when shortening the floor that the etched ends are thinner than the plastic ends for which the floor was designed; so don't cut too much off. An alternative to cut and shut would be to use the *Shire Scenes* S215 Compensation Unit to mount the second axle. Cut the solebar to 97mm retaining one of the 'W' iron assemblies the correct distance (16.5mm) from an end and then graft the other 'W' iron assembly into position using the method shown for the 6 wheel coach chassis in the guide.

The flange along the top of the coach side (17) folds through about 180° to thicken the side and provide a face to mate with the Ratio roof. Like the Ratio sides these (brass) sides sit on top of the Ratio floor. Fold the bottom flange (18) so that it is horizontal, offering the extra width and a larger surface area to glue to the floor; the protruding plastic solebar attachment 'pips' will have to be flattened. All 90° folds have the half etched fold

line inside the fold. If the under frame is to be detailed, this is best done at the outset as completed coach bodies do not respond well to being inverted and worked on in that position. It is suggested that the coach sides are attached 'second last'; just before the roof. Weighting the vehicle evenly will assist the riding characteristics. Cast metal Passengers; PP1 from Dart Castings, will help with this.

This vehicles have 'swan neck' grab handles on the right hand side of the passenger doors. These attach about two thirds of the way up the window frames and to the upper waist moulding (mounting holes provided). Three (optional) open droplights are provided to add variety. There is no larger central wide step on the A end as there are 6 rather than 5 panels on a 'Metro' end. Instead there are two central steps of equal size. As there were no steps on intermediate vehicle ends in 'close coupled' rakes they may have been added to either end on conversion, creating confusion over 'A' and 'B' ends. Photographs show both.

Livery

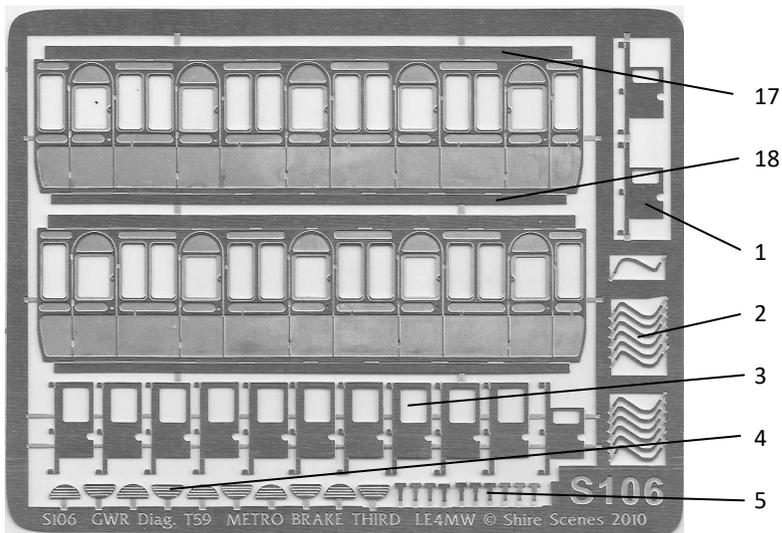
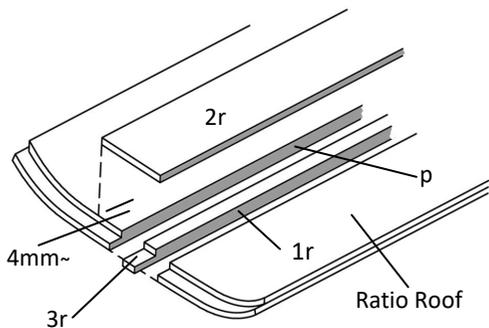
Generally, GWR coaches carried the fully lined Brown & Cream livery until 1908 when all-over 'brown/crimson lake' was introduced. This lasted until 1922 when the lined livery was re-introduced. Very few images survive of 'Holdens' in service and livery is unclear. They certainly finished their careers in all-over brown when in departmental or workman's use. Shire Scenes has seen one photograph of a set in 'simplified brown and cream' taken in the late 1920s or early 1930s. During WW1 a simplified brown livery may have been applied.

Roof

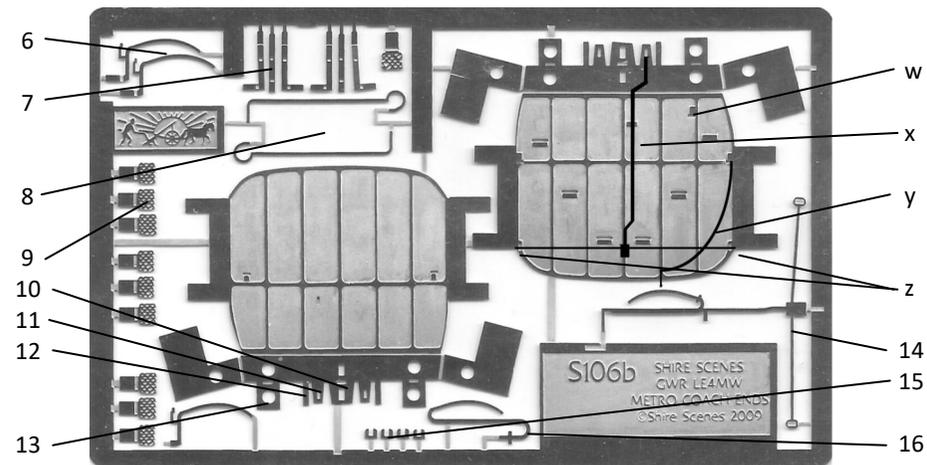
The Ratio roof has to be shortened by 23mm (to leave 102mm) and widened by 2mm. Widening looks complicated but in fact is relatively easy. When shortening the roof consider taking 23mm out of the middle. This will retain the symmetry of the rain strip (if it isn't being replaced) and preserve the locating rebates at the ends of the roof which might otherwise be difficult to reinstate. It is assumed here that shortening and widening are carried out together.

Remove the gas lamp tops from the roof (these need to be replaced anyway) and mark, but don't yet cut, the centre of the roof (half way between the ends) with a transverse line. Using a fine scalpel blade or equivalent, cut the roof (in half) along its centre line; along its other axis, i.e. at 90° to the transverse mark. Deep scoring and bending does the trick. If the cut is clean there should be no need to smooth the surfaces of the cut. Cut a strip 2mm wide (1r) and another about 10mm wide (2r) from a sheet of 1mm thick styrene sheet. The 2mm strip will eventually be the exact length of the roof but at this stage it should be a little longer. The wider strip must have 'square' ends and fit snugly between the new coach ends (use the etched side as a guide) as it will be used to locate the roof in the correct position. Cut 23mm from the middle of both halves of the roof using the transverse mark as a guide. Try to make the cuts as square as possible. Butt the two shortened halves of one side of the roof together and attach the wider strip to the under-side, overlapping the roof by about 4mm. This will re-join the two. Make sure the strip is longitudinally central; each end of the roof itself must 'stick out' by the same amount. Also make sure that the two parts (quarters) of the roof and accurately aligned; use a ruler and blu-tack to hold the parts of inverted 'half roof' firmly on a flat surface before attaching the styrene strip. File rebates in the ends of the 2mm wide strip. The thickness of the strip should be about 0.5mm for a few mm (not critical but not too long) at each end, replicating the rebates in the ends of the roof (3r). It is easier to do this at

this stage. Attach the strip to the cut edge of the half roof (p) using the wider strip (2r) as a base and butting right up to the cut (thus adding the extra 6" scale width). Attach the other half of the roof taking care to get everything aligned. Trim any excess length from the 2mm strip Fill and smooth the top surface and ends and drill to receive new gas lamp tops which sit centrally above the doors. Filler can be used to fashion the ridge on the roof ends but perhaps better, remove the whole ridge and then replace it with a strip of 0.5mm plastic across the whole arc. This can also help mask any visible join at the end. Roofs were painted white but became dark grey/black in service. A cast resin roof, S182, with the right length and profile is available from **Shire Scenes**



1. Open droplights. Hinges fold forward to fit through slots in the coach side (and help locate the droplight). The recess on the back (inside) is for glazing.
 2. Swan neck grab handles.
 3. Closed droplights*.
 4. Door ventilators. Mount in panels above (all) windows*.
 5. 'T' handles for door locks*.
 6. Steam heating pipes. If required.
 7. Lamp Irons*.
 8. End handrails*.
 9. End Steps. Two side by side at top.
 10. Coupler back plate*.
 11. Mounting bracket.
 12. Stiffener*.
 13. Buffer back plate*.
 14. Brake rigging (step end).
 15. Mounting brackets for brake rigging*.
 16. Brake / vacuum pipe (non-step end)*
- * - If modifying a Ratio coach these features can be seen on the discarded parts.
- w Slot for lamp iron (7).
 x Position of brake rigging (14).
 y Position of end handrail (8).
 z Slots for brake rigging brackets (15)



The Coupler Back Plate (10), Stiffener (12) and Buffer Back Plate (13) all fold outward through 180° to lie flush on the outside surface of the buffer beam. The Mounting Brackets (11) fold back (beneath the buffer beam) through 90°. The left hand one acts as a bottom mounting for the Brake Rigging (14) and the Vacuum Pipe (16). The right hand one holds the Steam Heating Pipe (if used). There are a number of half etched holes on the back of the etch. These should be embossed through to the front with a riveting tool to represent rivet detail.

Build Details

This table is not complete but does offer some guidance.

Year	Lot	Numbers	Post 1907
1893	705 708	2711—28	2745—65 5045—65
1894	711 715	2729—31	2773—74 5073—74
1896	778 781	2777—82	2785—88 5085—88
	806 809	2783—88	2793—96 5093—96
1898	859	303/04/11	2795—800
	862 875	27106—111	319/21/23/25/27/28 5106—11
	898 901	340/41/43—45/47	1091—1100

References

1. *Great Western Way*, Lewis et al, HMRS 2009. ISBN 978-0-902835-27-6,
2. *Great Western Coaches from 1890*, M Harris, David & Charles 1985 ISBN 0-7153-8050-8.
3. *A Pictorial Record of Great Western Coaches* by J.H Russell, Oxford Publishing Company, ISBN 902888 03 X. p122
4. *Great Western Coaches Appendix Volume 2.* by J.H Russell, Oxford Publishing Company, ISBN 0-86093-154-4

A suitable LE4MW profile roof is available for this vehicle in cast resin from **Shire Scenes / Dart Castings** (S182).

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