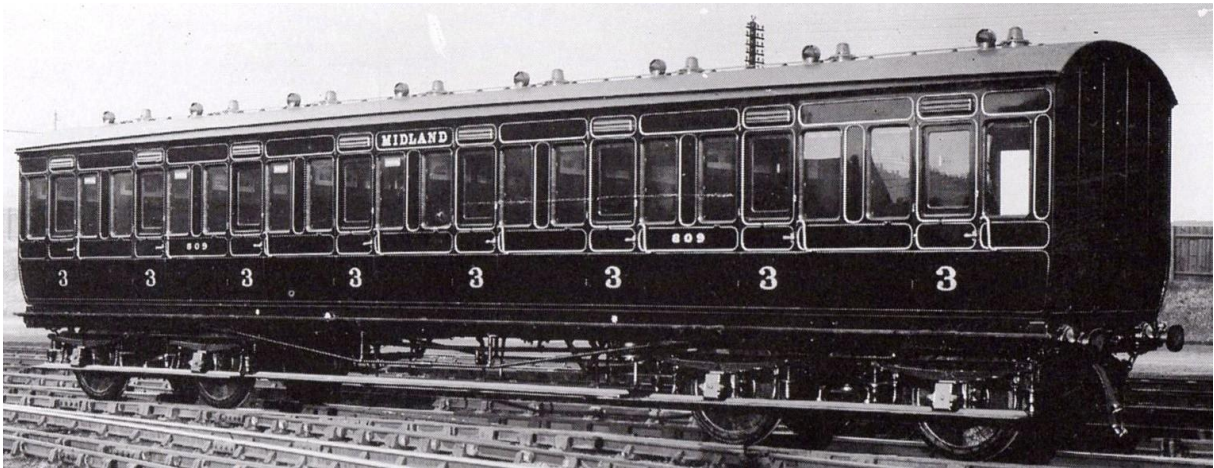




MIDLAND CARRIAGE WORKS

MIDLAND RAILWAY BAIN 48ft ARC ROOF STOCK D552 Brake Third D481 First D551 Composite D487 Third



HISTORY

During the Edwardian period, David Bain instituted a massive building programme of non-corridor arc roof suburban stock. All the vehicles shared remarkably similar visual lines.

For most part, the carriages were built in sets for operation in the various areas served by the Midland Railway (Sheffield, Birmingham, Manchester etc.). The 48ft stock, to the 8ft 6in width was built essentially for these areas. As the years passed, reallocation and new building tended to confuse the issue and in later days this stock could be found in a variety of locations.

Although some of the Midland diagram drawings show 10ft bogies and two queen posts on the underframe, photographs show that some coaches had 8ft bogies and four queen posts. Most of these coaches were built around 1910, but they had a very long life, lasting into the British Railways period, the last ones being withdrawn in the late fifties.

Five types of carriage were built, but with only four body styles. There were two types of brake third (four compartment and six compartment), a full third class and a full first class. The fifth type, a composite, was derived by utilising the body of the full first, but inserting false partitions in three of the compartments at one end to form third class accommodation.

The kits are supplied with 10ft bogies. If you require 8ft bogies please specify when ordering or can be exchanged for those in the kit for the cost of postage and packing.

Please read through the instructions carefully before assembly especially if you are a novice at building etched brass kits, as we have tried to explain the order in which we have found best to assemble our kits. Do not take this as the only way to build as the more experienced modellers develop their own techniques and can often give advise to the less experienced. If you have any problems with the kit please contact your supplier as they will be able to advise on your questions.

LIVERY

Body sides and ends, Midland Lake. Mouldings on the sides and ends were black. The mouldings on the body sides were lined each side with gold, before the turn of the century, however it was changed to yellow for non-passenger stock. Later still all non-gangwayed stock also had yellow lining. Gangwayed passenger stock always had gold lining in Midland ownership.

Solebars and headstocks were originally Midland Lake and lined in yellow. Between 1902 and 1914 this lining was dropped. From 1914 all below the body sides and ends became black. All below the solebars / headstocks was black with the exception of the wooden wheel centres which were sometimes painted Indian Red.

The roof was grey in service, often black up to the rainstrips on the lower roof of the clerestory coaches.

The LMS initially continued the livery of the Midland, however later repaints would have followed the simplified style outlined above.

Further information about liveries can be obtained from Essery & Jenkinson's book "Midland Carriages an Illustrated Review", which includes information about lettering positions and styles employed can be obtained from the Historical Model Railway Society.

GENERAL

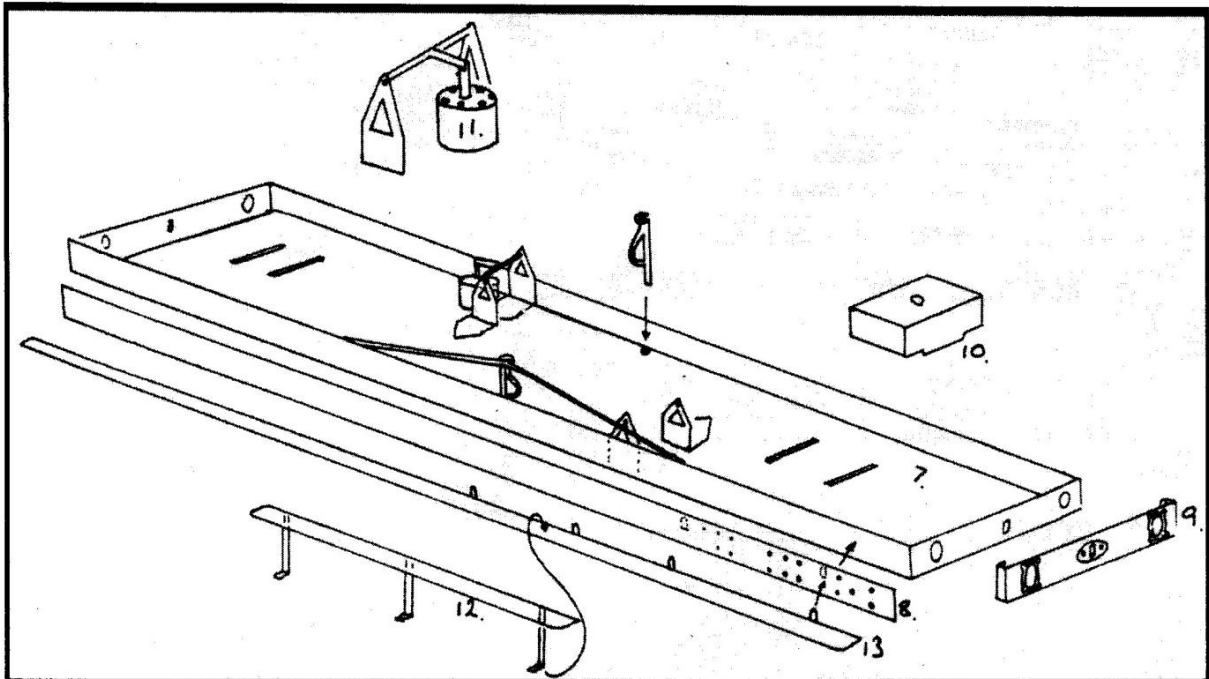
This kit is originally from the stable of Janick Models. It has been modified and upgraded and is continually being improved. Although it can be constructed with the body built on the chassis, it is recommended that the body and chassis are built separately. The two sub-assemblies can then be either glued or bolted together after painting.

Please read the instructions all the way through before commencing assembly and familiarise yourself with the accompanying diagrams.

We trust you will enjoy building thi kit and be encouraged to try some of the other products in the Midland Carriage Works range. Whilst every effort is made to ensure this kit leaves our premises in good condition and complete, occasionally errors do occur, in the event of complaint, please contact us at the address at the end of these instructions.

CONSTRUCTION

Chassis



A cast buffer beam is included in this kit, if you wish to use this then remove the etched buffer beam from the floor unit. The choice is left to the builder.

Fold up the floor unit (7) as in the diagram.

Solder the solebar overlays (8) in place noting that a round gas gauge is etched on this overlay and should appear above the centre line of the solebar when viewed with the chassis the right way up.

If the cast buffer beam is to be used solder this in position keeping it central and flush with the top of the chassis. If retaining the etched buffer beam take the buffer beam overlay (9) and fold in the ends as shown in the diagram and keep trying the holes for the buffers in line with those in the chassis but more important the overlay central and flush with the chassis and solder in place.

Fold up the bogie mountings (10) (Do not use the one on the main chassis fret, a replacement is enclosed with the bogies). If you are going to fit the 8ft bogies then the supports need to be moved 6mm towards the buffer beam.

Fold up the brackets for the brake operating shafts from the floor and insert brake actuating shaft into the holes in the brackets, this shaft if too long needs to be adjusted to fit nicely between the brackets with the central arm facing the buffer beam.

Take the cast vacuum cylinder (11) and position as shown in the diagram towards the buffer beam and solder to the floor and to the actuating arm. Now the actuating arm can be soldered to the brackets.

Fold up and fit the lower footboards (12) to the solebar.

Solder together the two halves of the upper footboards and fit to the solebar keeping the step located on the centre line of the solebar and central between the buffer beams.

Take the cast queen posts and solder to the floor and inside of the solebars keeping them central and vertical, the small notch at the top faces outwards.

Using a piece of 0.7mm wire bend the truss rod to shape and fit into the notch in the top of the queen post and solder to the back of the solebar and the queen post.

The cast gas cylinders can now be fitted if building the earlier model if not fit the battery boxes for the electric lights, also there is a dynamo included which should be attached to the floor near to one of the bogies but care must be taken to ensure it does not foul the bogie. NB. If battery boxes are required, lamps are not required on the roof.

Fit the buffers, vacuum and steam heating pipes to the buffer beams.

Make sure the couplings are a slide fit through the hole in the buffer beam as these can be fitted after painting.

Bogies

Mansell 3ft 7in wheels are required to complete the bogie. Peartree Engineering wheels are included with the kit.

As an improvement the original kits the white metal bogies have been replaced with Wayoh bogies.

Wayoh bogie kits have been designed to allow easy assembly using basic hand tools.

Identify from the list below, all the parts provided BEFORE you commence assembly and study the exploded diagram, which shows the various etched parts in their ready to assemble form. Cut parts from the fret and form as shown. The assembly order detailed in the instruction sheet is suggested but can be varied if necessary. We recommend you run a fillet of solder inside the folds of the etched parts to give strength and prevent sagging during use.

Clean off any remaining flash from the resin castings and mark out and drill the axle boxes to give a clearance hole as necessary so that the castings fit over the brass bearings.

Parts List

2 x Brass pivot studs	2 x 4BA steel nuts
2 x 4BA steel washers	4 x No 16 split rivets
8 x 10BA Brass screws	8 x 10BA Brass nuts
8 x Brass axle bearings	8 x Brass washers
2 x Etched frets for 2 bogies	4 x Resin side castings

Assembly

Solder centre stud 1 to part 2.

Solder parts 2 and 3 together and attach to underside of coach floor. Make sure the half etch is on the underside of part 3.

Solder rubbing plate 4 to part 5.

Fold ends tabs of side frames 7 inwards and add a fillet of solder.

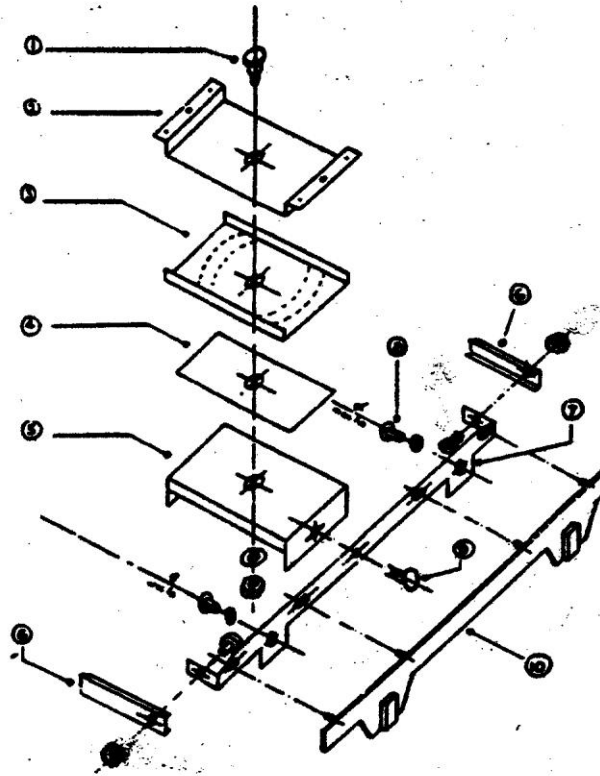
Solder brass axle bearings 8 to side frames 7. Note: Brass washers can be fitted to the axle bearings to reduce side play if required.

Attach side frames 7 to bolster 5 using rivets 9.

Fit the resin side overlays part 10 using 2-part epoxy or your preferred adhesive.

Fit wheel sets into bearings and secure end stretchers 6 with brass screws and nuts, you may prefer to solder the screws into the returns of the brass side frames. Do not over tighten the nuts, the bogie frame should flex slightly. When you are satisfied the bogie is free running, a touch of solder will secure the nut to the screw.

WAY  H **COACH BOGIES**



33 ROSE GARDENS, CAIRNEYHILL, DUNFERMLINE, KY12 8QS
Tel. 01383 880844

Coach Body

It has been recommended by some modellers to remove the tabs on the inner sides prior to assembly as this may give a better appearance to the finished model but this procedure is entirely up to the individual builder.

Curve the tumblehome on the inner sides (1), using a piece of broom handle or similar size round bar, and bend the bottom flanges at right angles to the coach side. The upper flange should be bent to approximately 45 degrees to act as a roof support. Use the coach end to obtain the correct profile. When satisfied with the shape of the inner side, curve the outer side (2) to match the inner side. Clamp the inner and outer sides together (wooden sprung clothes pegs are ideal for this) and solder along the top edge and through the holes in the inner side. They can also be carefully soldered through the window openings.

Drill out the holes for the grab and door handles in the sides, see diagram. If you do not want to keep them in natural brass finish they can be soldered in place at this stage but alternatively they can be glued in after painting.

Fold over tabs at the ends of the sides if not removed.

Curve the tumblehome on the ends (3) and solder the ends to the sides making sure you keep them flush with the top and bottom and square to the sides. Make sure you are putting the ends on the correct end of the body side, especially if you are building a coach with a brake end; the end panel with slots for steps goes at the brake end.

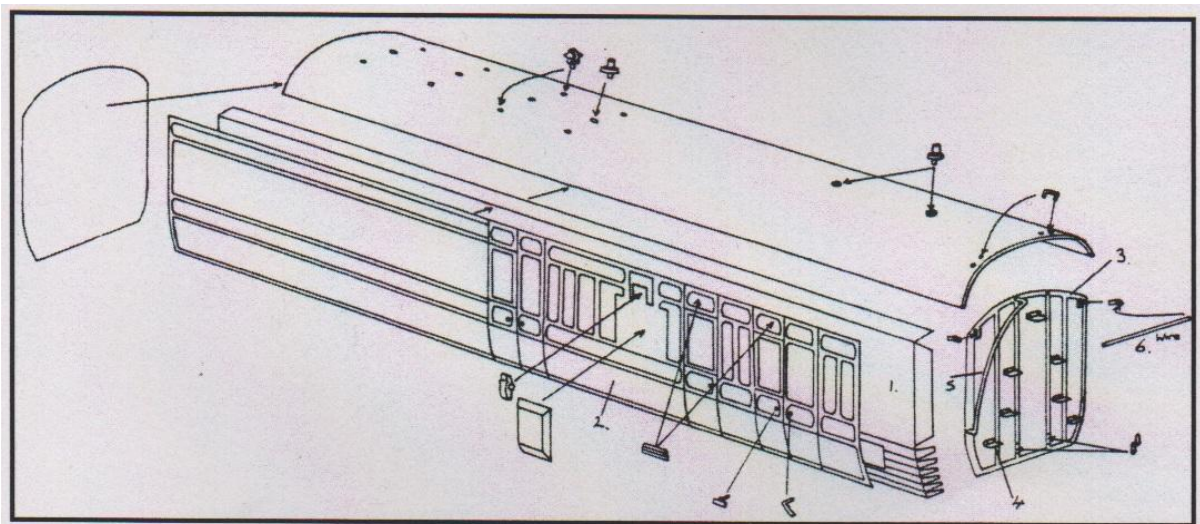
Solder the steps into the slots on the end panel also bend the handrails from 0.7mm wire and solder these in place.

Fit the train alarm ears, train alarm piping and gas valve handle if gas lit.

Solder the etched ventilators above the doors.

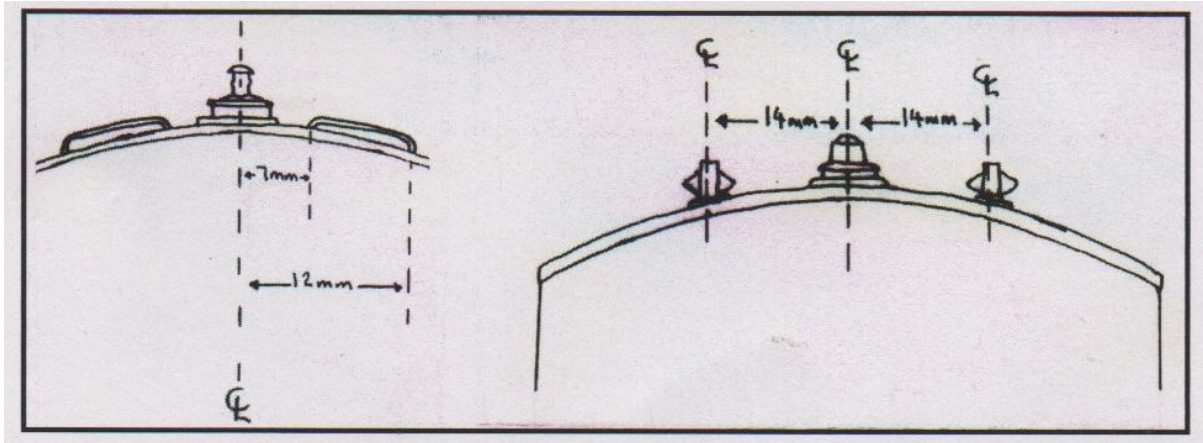
If building a brake coach, the guard ductet and lamp should be fitted, where shown on the drawing.

To fit the body to the chassis it has been found best to drill holes through the lip on the bottom of the body side and the chassis keeping the body shell central about the chassis and flush with the buffer beams. These holes should be clearance on the size of screw used usually 8BA. Solder an 8BA nut over each hole on the body lip being careful not to let any solder creep into the threads. After painting the body and chassis can be screwed together using 8BA screws.



Roof

Mark the positions of the lamps and vents and using either "super glue" or epoxy resin fit the white metal castings in place. Gas lamps locate in the middle of the roof, centrally over each compartment. Torpedo vents are fitted either side of the compartment, 14mm from the centre line of the roof. NB. As built, torpedo vents were not fitted to brake compartments. Attach the roof after painting, glazing and interior finishing.



Interior

The glazing is best secured with double sided sticky tape as some adhesives send the glazing cloudy but this is only a recommendation and individual builders have their own preferences.

The seating supplied can be cut to suit and fixed into the coach after all painting has been done. The compartment layout can be seen in the sheet of diagrams enclosed.

We at Midland Carriage Works hope you have enjoyed building this kit and hope you will consider purchasing further kits from our continually expanding range.

Thank you once again Barry Yardley

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