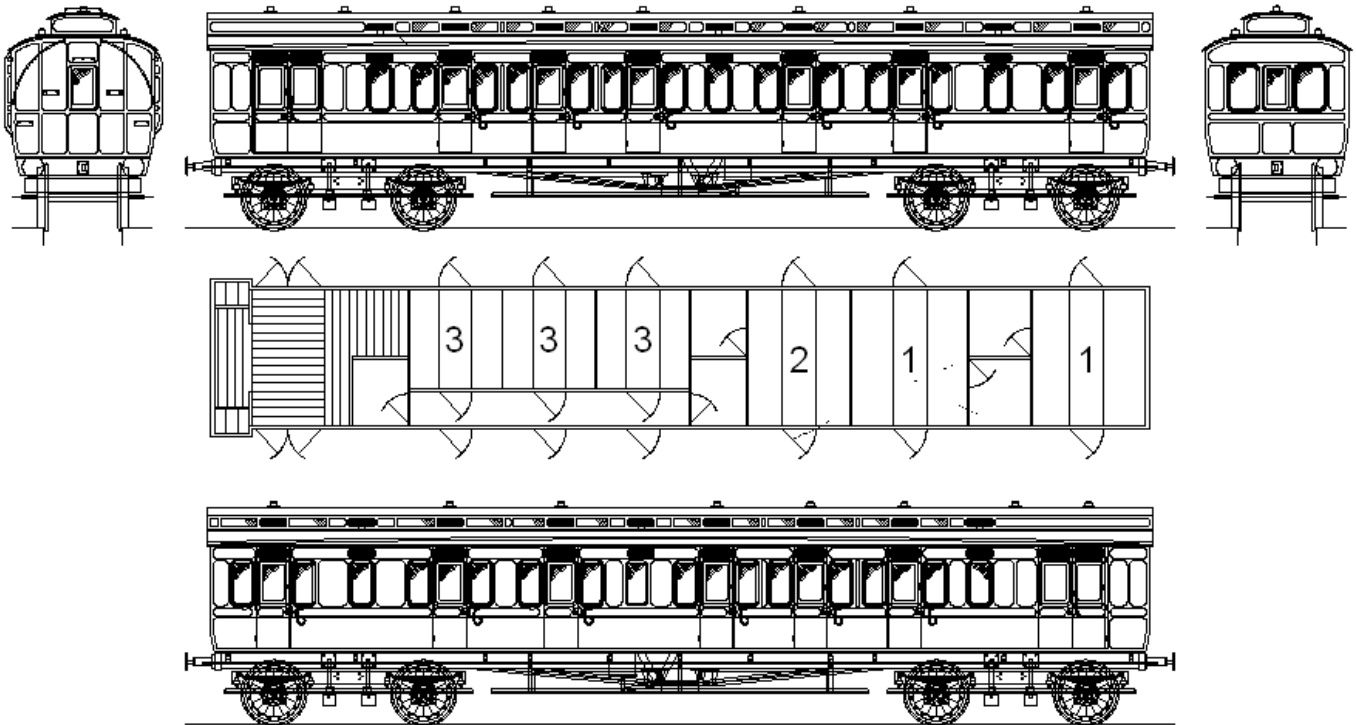


The Fareham Carriage Works Designs

By Tony Armstrong



GWR Carriage Instructions



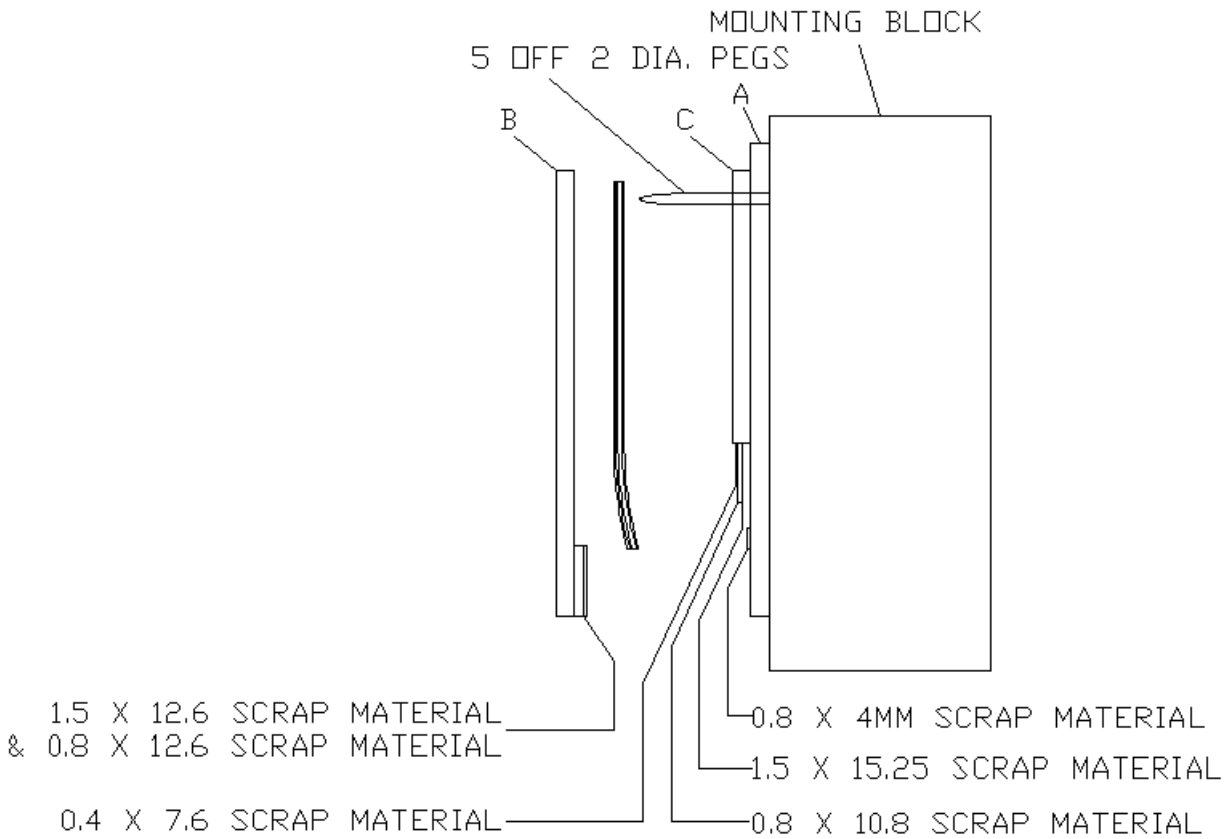
GWR 56ft D39 Semi-corridor composite (Falmouth Coupe) laminates

The 'Fareham Carriage Works' designs are not kits: they are the plywood components necessary to build the bodies and under-frames of a vehicle. The designs are exactly as supplied to Tony Armstrong who created them to take the hard work out of scratch building carriages. They are not particularly difficult to assemble, but you need to be familiar with the type of vehicle to work out what some components are and how to assemble them. They are not like an Airfix kit where everything is numbered, and has 'Noddy' notes telling you exactly how to build it. Please note that some fitting/adjustment may be required during assembly – you can't just put the bits in a bag, give it a good shake, with the hope it will put itself together!

To help with detailing your carriages I would recommend you obtain a copy of A Pictorial Record of GREAT WESTERN COACHES (Part One 1838 – 1913) by J H Russell. To help with construction you might also read 'An L&SWR train to Lyme Regis' published in the NL&J commencing issue 265.

Here are some notes to help you with assembly. All of my GWR carriage follows the same construction principle.

Laser cut components are available for an assembly/lamination jig, together with roof mould. Assemble a jig to be used for laminating the sides onto a thick flat block (I used a 40mm work surface off cut) with similar block to reinforce part 'B': you will need to cut from scrap material a pieces of 1.5mm, 0.8mm and 0.4mm ply, together with making four 2mm diameter location pins.



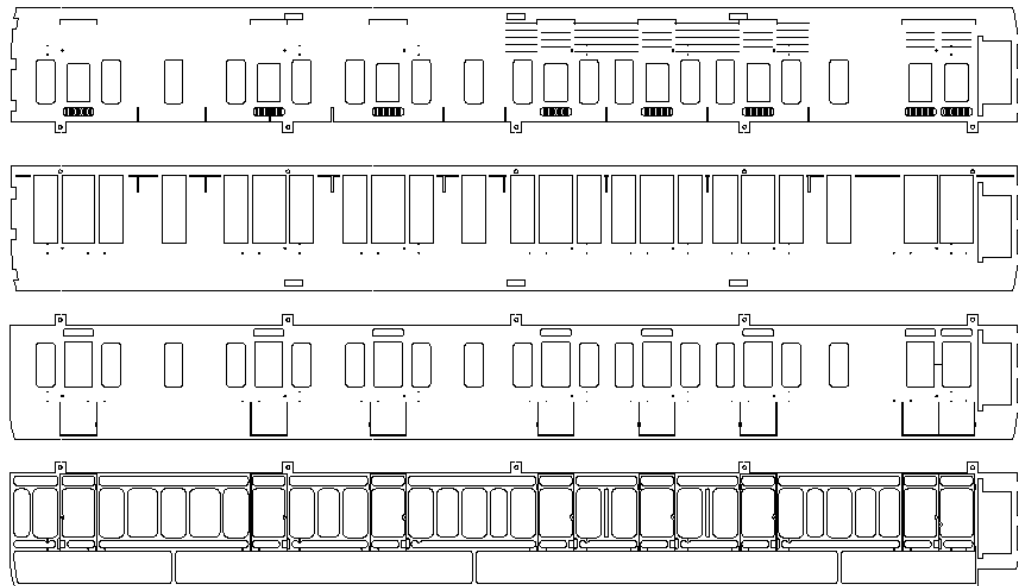
Body Assembly

Do not remove components from the sheets until you intend to use them, they will only get mislaid.

Identify and remove from the ply sheets the eight carriage side components for one vehicle at a time.

Before assembly, stain, paint and lacquer the inside of the vehicle as required:

I found it quite easy to assemble something the wrong way up: so for each vehicle make two piles of side components, with the outside mouldings scoring facing upwards, the external skin door mouldings facing up, on top of that the core and finally the inner skin with scoring facing down.



56ft D39 Semi- corridor composite (Falmouth Coupe) laminates

Position the inside skin, score lines down, onto the pins of the jig.

Apply slow setting cyanoacrylate to the appropriate side of the 0.8mm core, drop the core onto the pins of the jig, drop the clamp plate over the pins and clamp everything together. I use a 12" woodworking vice.

When the cyanoacrylate has set take the jig apart, apply slow setting cyanoacrylate to the face of the core and place the outer skin (score lines facing) over the pins and clamp together.

Before applying the mouldings layer paint the outer skin GWR cream and brown. Paint the beading black.

Bond the mouldings to the outside of the carriage sides (I use a contact adhesive).

Stain interior door frames as required and bond to the inside of the carriage.

It is much easier to work on the carriage sides while in the flat, so decorate the interior of the carriage sides as required.



Typical vehicle interior

Similarly, detail the exterior: fit door ventilators, door hinges (billeted from 1mm plastic rod). It is also a good idea to drill door handle and commode handle holes at this stage.

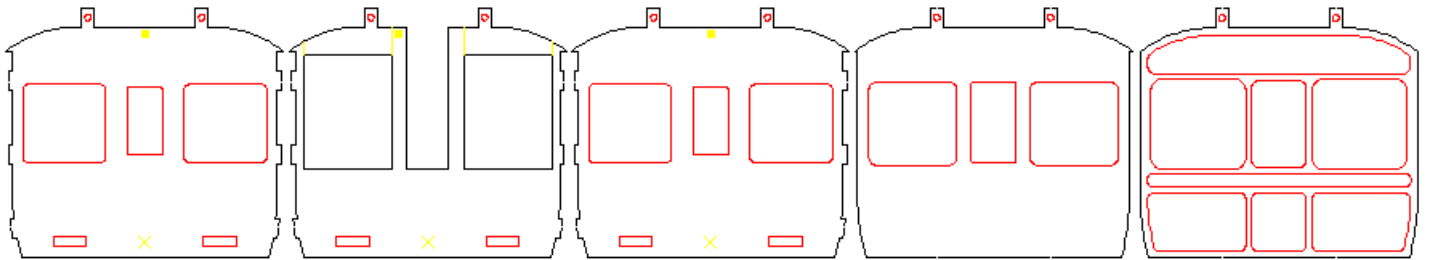
If building a brake carriage assemble the duct sides from three laminates. The middle laminate has a larger window aperture to accept glazing. Note the score lines across the top and bottom of the inside of the window. Do not bond this part to the first layer because you will be removing it before bonding the third layer in place. Assemble the duct sides to the body, mould the skin into place and fit the overlay.

The carriage sides can be finished in the flat complete door latch plates, commode handles, transfers and lacquer.

When detailing is complete the tabs and strip along the top edge of the body side can be removed.

Glaze the windows and fit droplights with glazing. Some droplights can be fitted partially open.

Remove the carriage end components from the sheets and laminate the carriage ends, layers 1,2 3 and the outer skin. Fit steps to the appropriate end. Paint as required and fit the painted beading overlay.



Laminates of a 56ft D39 Semi- corridor composite

You might find an X on major components: these either face down or in the same direction axially along the length of the vehicle.

Remove the floor and from the 3mm plywood sheet, together with the 0.8mm partitions and 0.4mm picture frames from the ply sheets.

Fit the picture frame overlays to the compartment partitions and appropriate end panels, stain and decorate as required, by fitting mirrors and pictures.

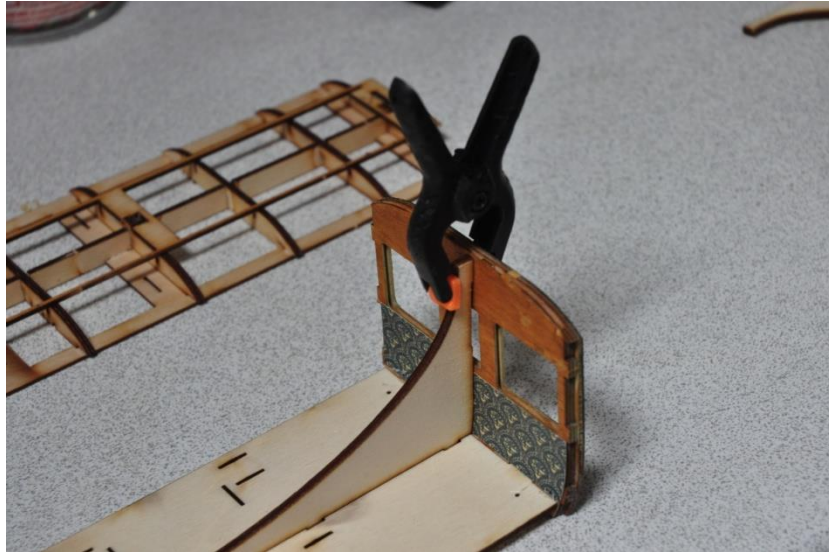


Typical partition with picture frames

Clean-up all side, end and floor component joints and trial assemble the body – a temporary 3mm bracket is provided to hold the ends vertical.

The sides can be held in place with elastic bands at the ends if necessary.

Take the body apart, decorate the floor as required (X facing down), and bond the ends to the floor ensuring they are square.



Assemble the end to the floor

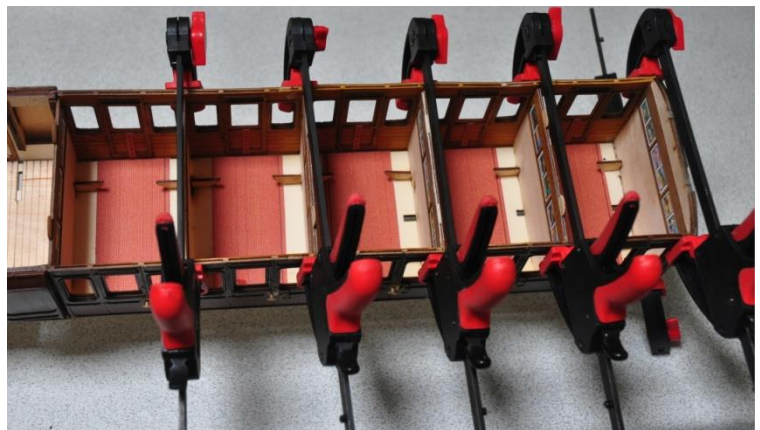
Bond the sides of the carriage to the floor and ends.

Any slight gap between the end panel profile and the sides can be filled as required.

Fit the compartment partition, seat supports and decorated seat cushions. Profiled seat backs are not included. I cut and profile my own, but balsa aircraft wing trailing edge could be used.

Fit the floor overlay, partitions and seats to the guards compartment where appropriate.

I have not provided any internal partitions for the lavatories.



Clamp the sides and partitions in place

Roof Assembly

Remove the 1.5mm ring beam, 3mm roof beams, 1.5mm clerestory foundation ring and planking from the sheets.

Check the ring beam fits the body – sand as required.

Bond the central beam to the ring beam, and then the roof beams. Check the ring beam still fits the body.

Fit the 1.5mm clerestory foundation ring.



Clerestory and brake van roodx

Plank both sides of the roof. Sand the roof and fit a paper or iron on aircraft film covering.

Fit the roof rain strips and paint the roof.

Remove the clerestory laminates and ends from the sheets, Paint the clerestory laminates and ends as required and assemble the laminates,

When assembly is complete remove the assembly location tabs.

Fit the clerestory sides and ends to the roof, opening out location slots as necessary.

Glaze the clerestory roof windows.

Assemble the clerestory roof mould.

Remove the clerestory roof foundation, beams and roof skins from the sheets.

Glue the roof beams to the foundation.

Fit the first roof laminate (X facing down) to the location tabs of the roof beams and clamp the assembly into the roof mould.

When the first laminate is set apply the second laminate. The holes for the lamps can be used to align the two layers.

Fit gas lamps, paint and lacquer the clerestory roof.

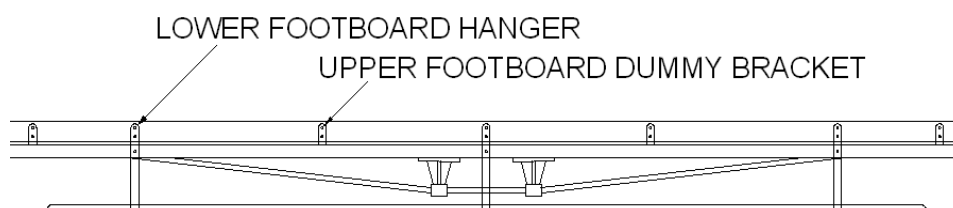
Assemble the clerestory roof to the main roof and the complete assembly to the body.

Underframe assembly

Remove the underframe mounting board, carriage soleplate, sloebar and headstock components from the sheets.

Fit the 0.4mm overlay to the solebars.

Fit lower footboard hangers and upper footboard dummy brackets using lace pins. The lace pins are pushed through the solebar and clenched over.



If using my design of headstock, solder together the two components to form a 90 degree angle.

Fit the buffer shanks and drawbar reinforcing plates to the headstocks.

Assemble the solebars through the carriage soleplate into the underframe mounting board.

Fit the headstocks using 4ba CSK machine screws through the carriage soleplate and underframe mounting board into the headstocks.

Fit gas tank mounting brackets and make gas tanks from 18mm diameter rod (either wood or plastic)

Make and fit vacuum cylinder assembly.

Make and fit queen posts and tie bars.

Paint and lacquer the underframe as required.

Stain or paint the solebar footboards.

Assemble the lower footboard kicking strip to the lower footboard, paint and bond to the hangers.

Make and fit bogies and bolsters of your choice.

Fit buffers and drawhooks of your choice.



56ft D74 Semi- corridor composite