

Festiniog Railway Ashbury Coach

Ref. 16C01



INTRODUCTION

Prototype Information

The Festiniog Railway was one of the first narrow gauge lines in the World to carry passengers. The earliest carriages were small four wheelers. The first type, delivered in 1864, a year before passenger services officially started, were very low slung, with sideways-facing bench seats, built by Brown Marshalls & Co., in Birmingham and popularly known as "Birmingham" or "Bug Boxes". In 1868, six additional carriages were delivered from the Ashbury Railway Carriage & Iron Co. in Manchester, and were more conventional in appearance, not so low slung but narrower and barely any higher. They seated 12 people on 4 cross-bench seats. It is one of these that is represented by our kit.

Of the six delivered, one was for First Class passengers, two were for Second Class and three were for Third Class. The First Class coach was numbered 10, and the others were numbered in the range 7–9, 11 and 14, but the numbers carried by each class type are not known. Only number 10 had the two windows between the doors, the other five had a single blank panel.

All of the Ashbury 4 wheelers had been taken out of use by the 1920s, whereas most of the Birmingham survived into the preservation era. It is not clear whether this was because the former were of inferior quality or because they were used more and were therefore worn out. Some of the bodies were used as waiting rooms on the then-new Welsh Highland Railway, and somehow the door of one of them still exists to this day.

For some time the full-size railway has wished to build replicas of those types of Festiniog

Railway vehicle which did not survive into preservation, and following the creation of a "curly-roof" bogie brake van, an Ashbury 4 wheeler was on the list. After several years of largely voluntary work, this has now (2007) been finished and has received the number 10; it has the two windows between the doors, but is lettered "Third Class", because that is how the interior has been fitted out, in the absence of information on the First Class fittings. It makes a fine addition to the railway's "Victorian Train" which is run on a number of occasions each year.

We are grateful to Stuart Baker who produced the drawings from which the replica No 10 was made, for allowing us to use his drawings in the creation of this model.

For further written information about the Festiniog Railway, there have been numerous books published over the years, and the railway's own bookshop will be able to supply many of them. In fact, in proportion to its length, there have probably been more books on the FR than any other railway in the World! The definitive history is still:

- *The Festiniog Railway*, James I C Boyd, Oakwood Press, (in 2 volumes). Many editions over 40 years or so, and usually kept in print by the publishers.

Model Information

This kit will enable you to build a fully detailed model of a First Class Ashbury coach from the period 1868 to c.1920, or the replica coach No. 10 as now existing, except that vacuum brake connectors are not included (although these are available from us).

HEALTH AND SAFETY

None of the materials included in this kit should cause any safety problems in normal use. You should avoid breathing the dust caused by filing or sanding the main plastic parts, and these will give off dangerous fumes if burnt (so don't put the sprue remains onto your open fire!).

Other Tools and Adhesives

Be careful with sharp tools such as knives and drills, and observe Health & Safety instructions on adhesives and paints, particularly spray paints.

TOOLS NEEDED

The following tools are needed, most of which will already be in the toolkit of the average modeller.

Piercing Saw or Nippers	for removing lost wax castings from their sprues
"Stanley" type knife	for removing plastic parts from their sprues
Assortment of files	for finishing removal of pips, tabs, and general cleaning up. You will need a large flat file (that is, 'large' in model terms, i.e larger than a needle file), and round, square and flat needle files.
Slater's MEK PAK	for joining the main plastic components
Fine brush (Slater's ref. 0505)	For applying MEK PAK
Cyanoacrylate (Loctite Superglue or similar).	For metal-to-plastic fixing where strength is not important
2-part Epoxy Glue (Araldite or similar)	For metal-to-plastic fixing where strength is important (e.g. the coupling hooks). The 5 minute setting variety is OK for this work, but the 24 hour setting version is better if you have the patience to wait for each bit to set!
Abrasive Rubber Block	for cleaning all materials (but particularly etched brass parts) prior to fixing in place.
Taper Reamer or Broach	Better than a round needle file for adjusting the size of small holes (e.g. for door handles), but not worth acquiring just for this job, but will come in very useful on future projects.

PREPARATION NOTES

Preparation of Plastic Parts

The removal from the sprues must be done carefully: the old Plastic Kit method of snapping the parts off with your fingers is not good enough! (it will result in damage to some of the parts). The best way of doing this is with a Stanley type knife (or sharp chisel) with the sprue resting on a fairly hard surface like an off-cut of MDF. Cut through the tag as far away from the part you need as possible, then trim the tag and finally finish off with your fine files. Long straight edges (such as the top of the sides) is best done with the large flat file, to make sure it stays straight. Parts like the tie bar between the 'W' irons/axleboxes need particular care to avoid damage whilst cutting and subsequent filing. The edge of the roof requires careful filing of the tag remains, using a combination of round and (small) flat files, so that the edge is a consistent profile all the way along. If you do accidentally cut or file too much, cut off an appropriately shaped section of sprue, and glue an oversize piece with the MEK PAK, leave to thoroughly cure (several hours) and then resume careful filing. The clear plastic 'dome' for the lamp is much more brittle than the other parts, so needs even more care.

The various holes for the brass castings may need slight enlargement (or removal of flash) using the round needle file (or a broach if you have one) or the square file in the case of the coupling hook holes. This is easiest done 'in the flat' before assembly. Be careful not to over enlarge any of the holes.

Cleaning up Lost Wax Brass Castings

As required, remove pieces from sprues with a piercing saw or nippers and finish off with a fine file. Parts may need straightening; this is easily achieved with the fingers. Remove any blemishes with a file and finish with a quick polish with the abrasive rubber. In the case of the door and comode handles, these remain unpainted, so would benefit from some work with metal polish (such as Brasso).

Assembly of Plastic Parts

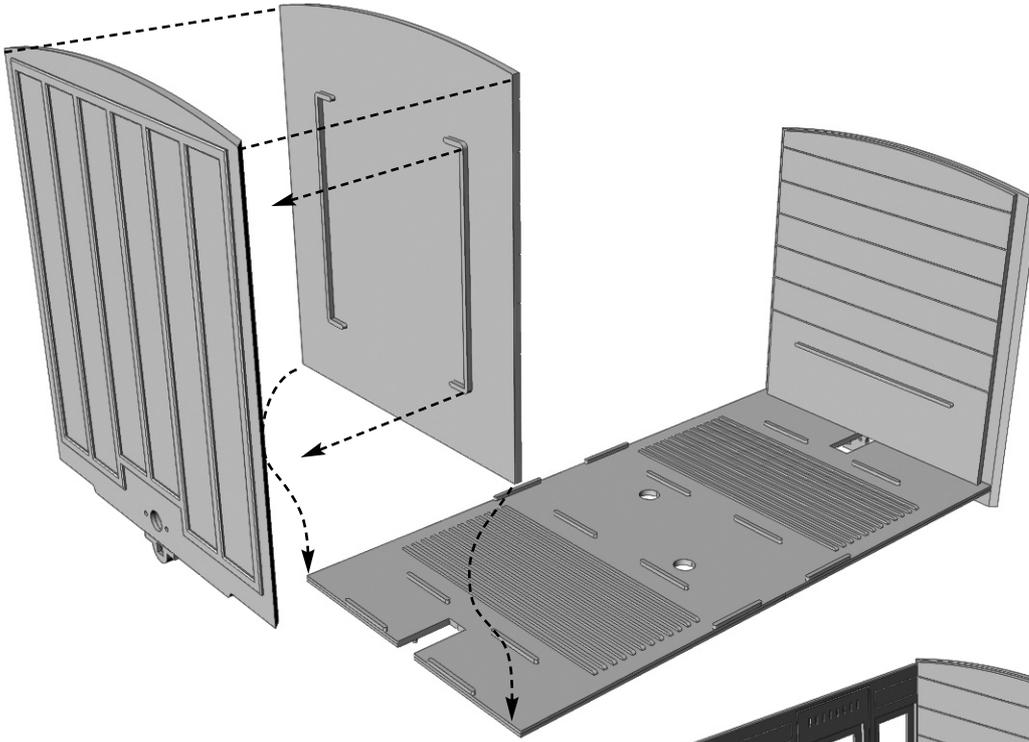
This is done by holding the parts in place, and then brushing a small quantity of MEK PAK along the join; don't flood it and don't allow the liquid to spill or dribble on to any model surfaces. If it does, make sure you don't touch it (or fingerprints will be left) or try to mop it up, but leave it alone to dry naturally for several hours in the case of bad contamination. With luck, it won't have caused much damage, but if there is visible marking, it can usually be polished out with fine files, fine wet-and-dry paper or the abrasive brush.

ASSEMBLY INSTRUCTIONS

The description of the assembly procedure is based largely on pictures generated by the 3D CAD system on which the model was designed, amplified by text where necessary. It will be assumed throughout that all plastic and brass parts have been removed from their sprues, the necessary cleaning up done, and any holes cleaned up or enlarged to fit the appropriate parts. In the text, the word 'glue' is used to mean MEK PAK when attaching plastic to plastic, and Superglue or Epoxy when attaching metal to plastic. Both sides and both ends are identical to each other.

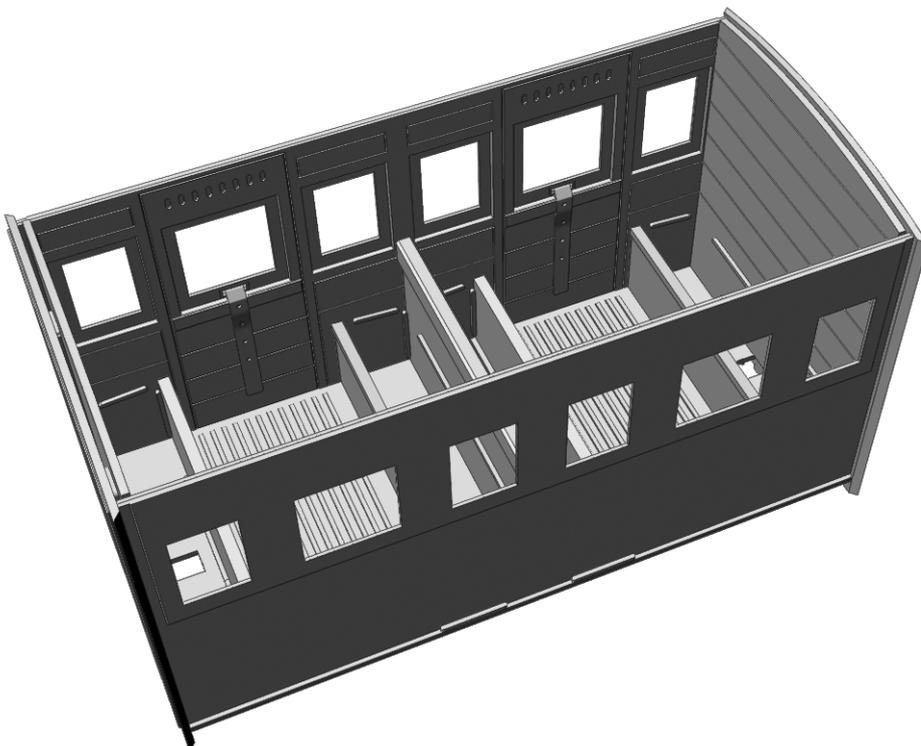
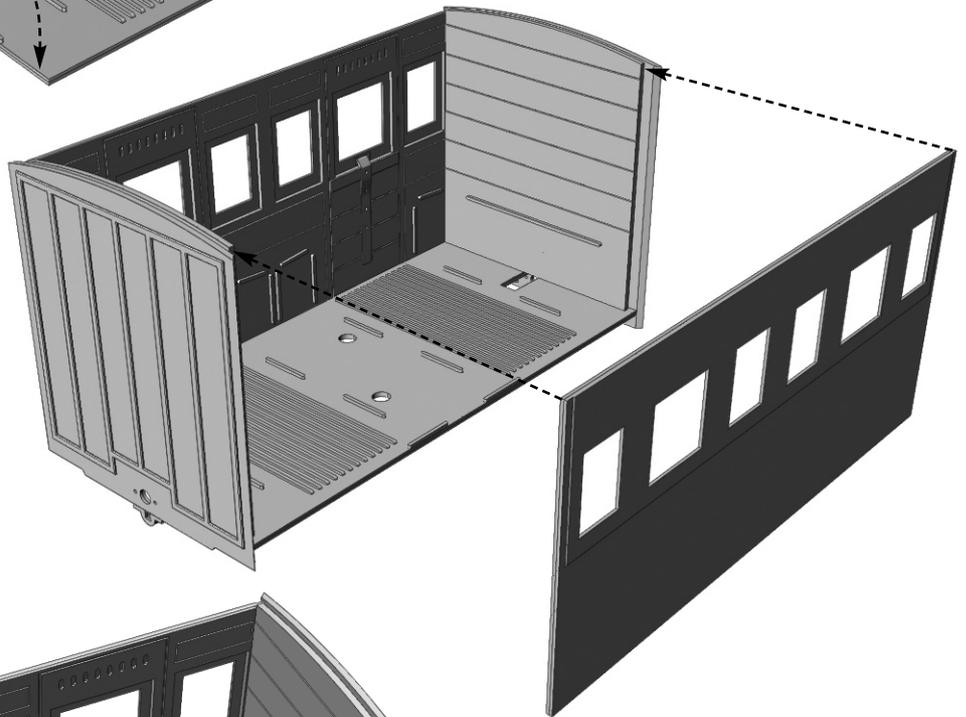
1. Attach Ends to Floor

Glue each inner end to each outer end, making sure that the interlocking ribs are in the right place; after assembly, the curved tops of the end sections should be level with each other with a 1mm gap between them. It is difficult to get a brush in to apply MEK PAK to the ribs, so this is a rare instance when you put some along the ribs before very quickly putting the pieces together. Glue each end assembly to the floor, noting that there are ribs to ensure correct location - the bottom of the inner end touches the floor whilst the bottom of the outer end projects below it. Try to ensure that the ends are perpendicular to the floor, if necessary use an engineers square or a set square from a geometry set. However, it is sufficient to do it by eye provided stage 2 is done immediately afterwards before the glue in stage one is fully set.



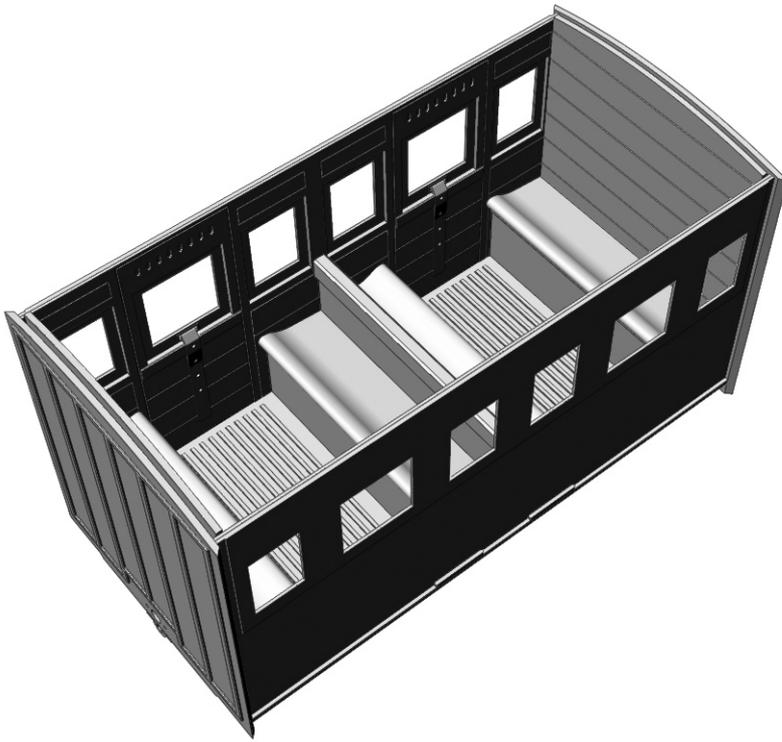
2. Attach Inner Sides

These fit between the outer ends, on top of the floor (inside the two locating ribs), and butting up to the inner ends.



3. Fit Seat Supports

There are four seat "fronts" and the centre seat "back". They all locate against various ribs moulded onto the inner sides, noting that the seat fronts go on the outside of the ribs, so that the ribs will not be visible when the the seats themselves are put in place (next stage).



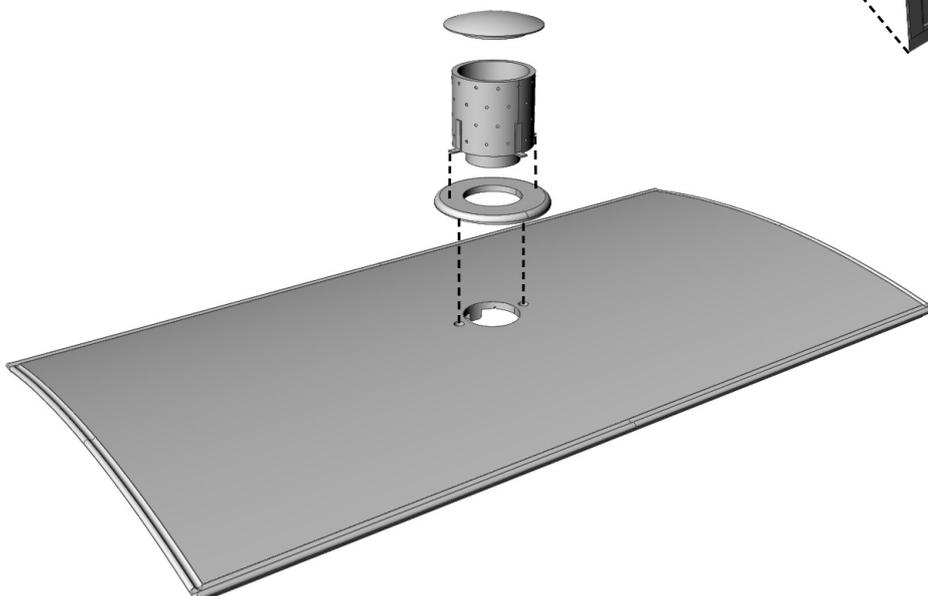
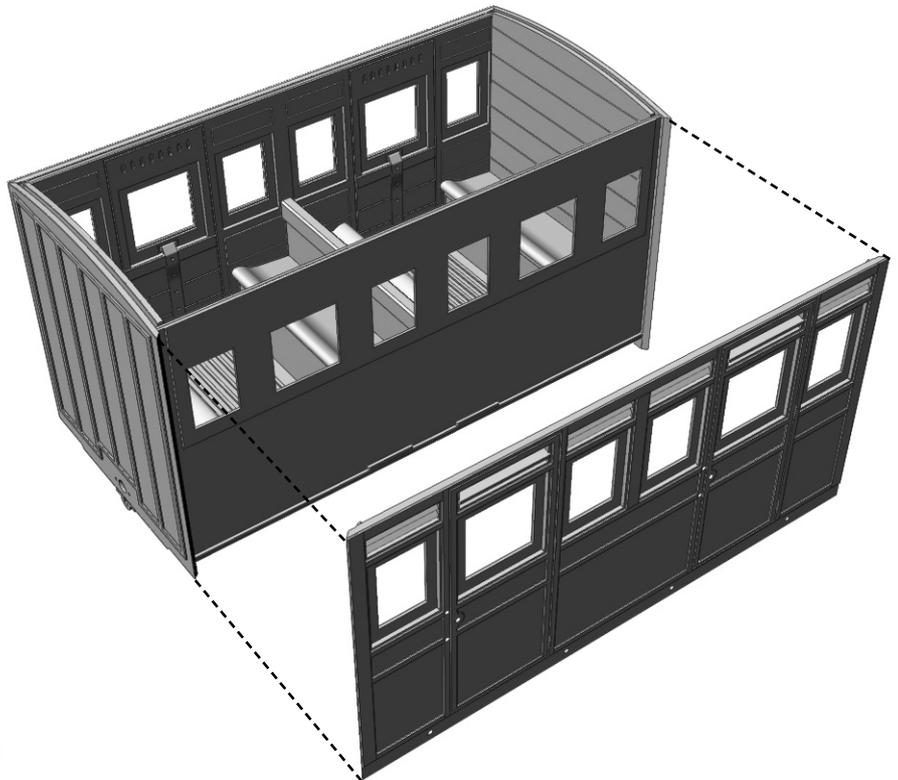
4. Fit Seats

The four seat tops locate, using the seat supports and the remaining ribs on the inner sides.

5. Fit Outer Sides

Before fitting, note that there are four holes near the lower edge which take the footboard supports (stage 10). These need to go right through, and it is much easier to check and drill them, if necessary, prior to assembly!

The bevelled sections fit snugly against the bevelled section on the outer ends, with the top and bottom level with the ends at each corner; there is also a rib which, when attached to the inner side forms the pocket for the glazing material. The glueing of this rib is the second occasion in the assembly of this kit when it is desirable to apply some glue along the rib before putting the parts together. Glue the other joints after assembly.



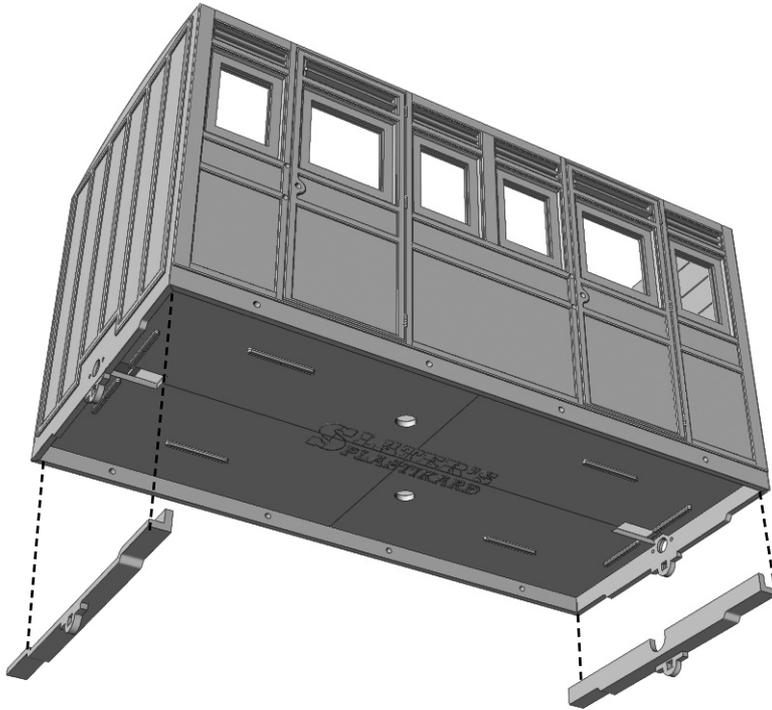
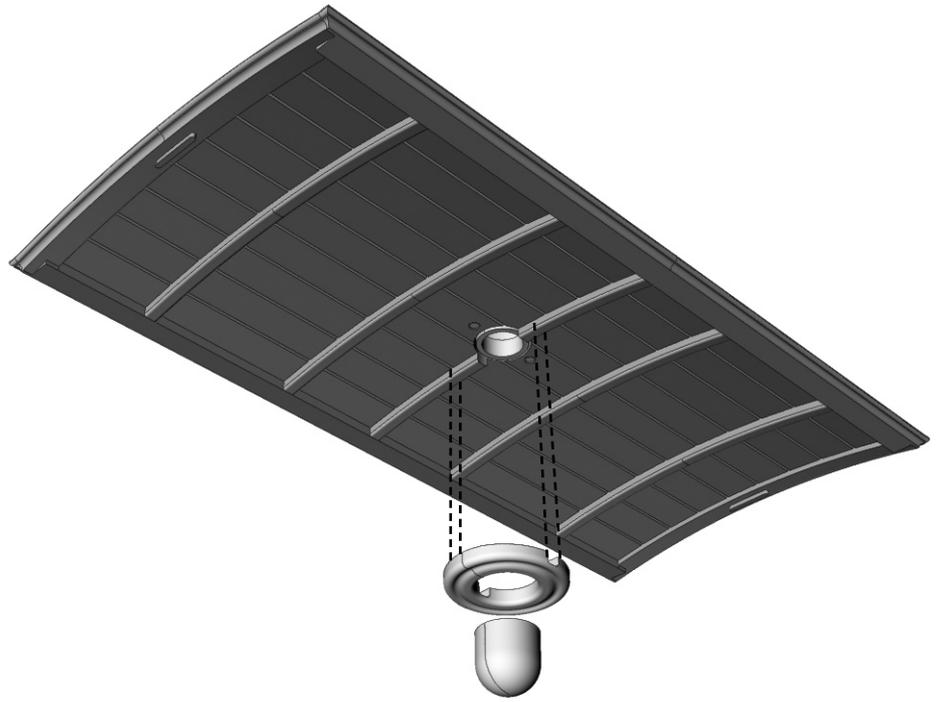
6. Assemble Roof

Note: Removal of the roof from the feed sprue requires careful finishing with round and flat files to form a consistent edge profile along the entire piece. Glue the top lamp rim (the one with two pins on the underside to engage in the two holes) to the roof.

Glue the brass lamp housing into the lamp rim, noting that an opposite pair of the tiny legs should run along the centreline of the coach.

The brass lid to the lamp housing can also be glued in place, unless you wish to add real lighting, in which case, leave it loose at this stage

Glue the bottom lamp rim using the roof sticks (ribs) for location, but make sure that the hole is central. Finally glue in the "glass" bowl, tight up against the underside of the brass lamp housing. Please note that the clear plastic used for the bowl is quite brittle, so care is needed in removing the feed sprue remains, although these will be hidden by the rim once in place.



7. Add the Inner Headstocks

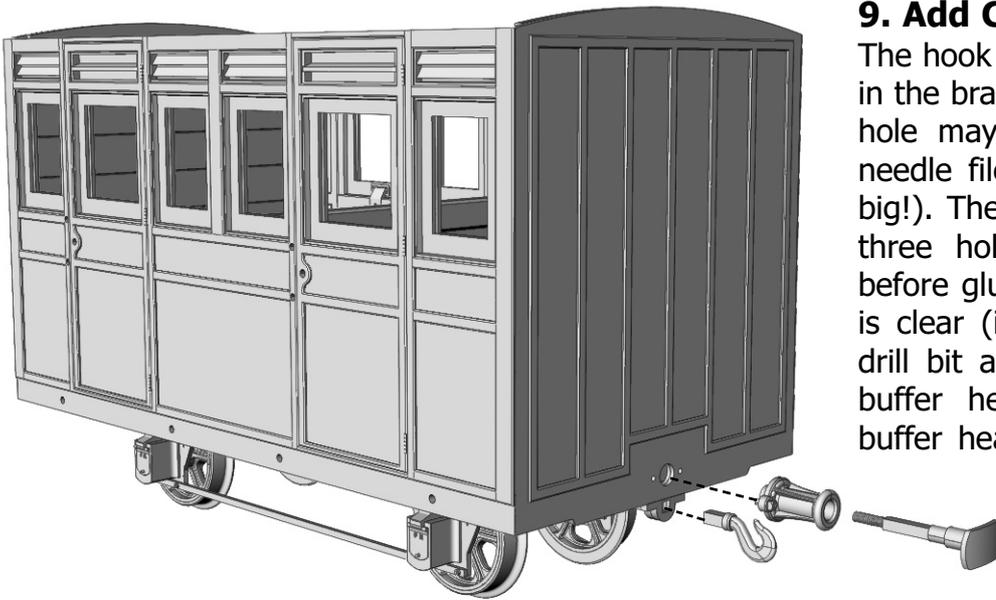
These fit behind the lower part of the outer ends, so that the square holes for the couplings line up.

8. Add Wheels, Solebars and Axleboxes

Glue the brass bearings into the axle holes in the back of the axleboxes. Make sure that there is no glue still liquid, then insert the wheelsets as shown and glue the solebars onto the underside of the floor, between the headstocks and with the locating ribs to the inside. This operation traps the wheels in permanently, so make sure of the following:

- that the solebars are firmly against the floor
- that the axleguards are perpendicular to the floor
- that the wheels revolve freely
- try the assembly on a flat surface (such as a mirror to make sure that the wheels do not rock





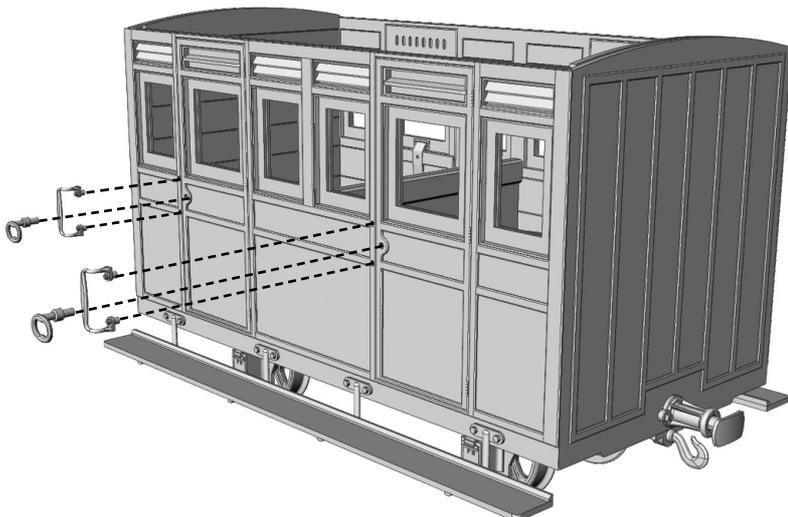
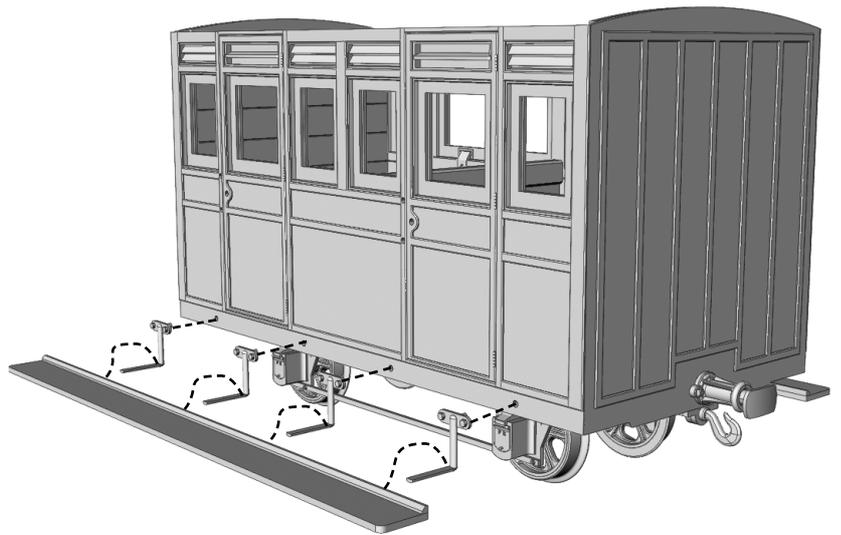
9. Add Couplings

The hook glues through the square hole in the bracket below the headstock; this hole may need easing with a square needle file first (but don't make it too big!). The buffer housing locates in the three holes in the headstock. Check before glueing in place that the interior is clear (if necessary clean out with a drill bit and square file), and that the buffer head slides in smoothly. The buffer head does not go on until after painting, but needs to be checked at this stage. Screw the 10BA nut on to the threaded end to check that

it is OK, then remove again. Cut the spring in half, one for each end, and slide onto the buffer head over the thread and up to the change in diameter. Then put the head into the housing, holding it fully in, whilst putting the nut on, utilising the slot in the floor to gain access. Check for free movement, then remove the nut head and spring, keeping them safe for refitting later.

10. Add the Footboards

There are 4 castings per side, which glue into holes in the lower body side. Check that they are parallel with each other, vertically and horizontally. Now add the plastic footboard itself, located onto the cast supports by notches on the underside.

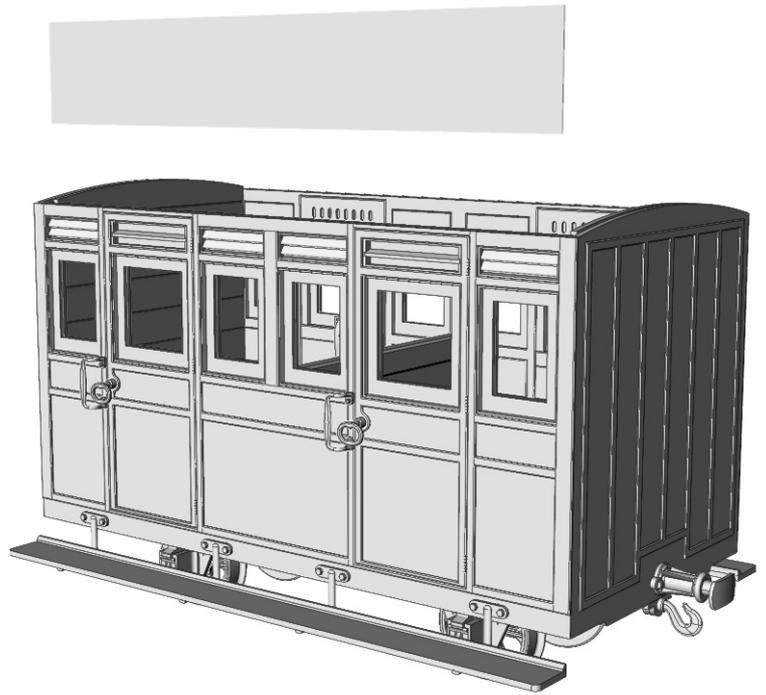


11. Check the fit of the Door Furniture

These are not fixed in place until after painting, but they should be checked for fit at this stage, removing them to safe keeping until needed.

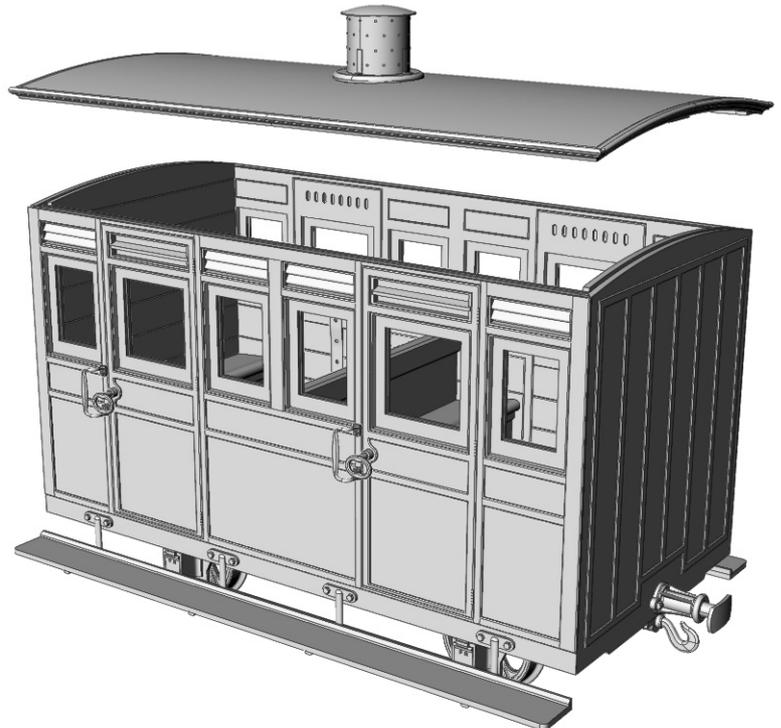
12. Fit the Glazing

Cut two pieces of the glazing material each to 144mm x 30mm and try in the slot formed between the inner and outer sides. Then remove them and protect them from scratching and fingerprints, keeping them safe until painting is complete. If needed also cut two pieces of thick paper, thin card or 20thou (0.5mm) Plastikard to act as a barrier between the inside and outside whilst spray painting.



13. Check the fit of the roof

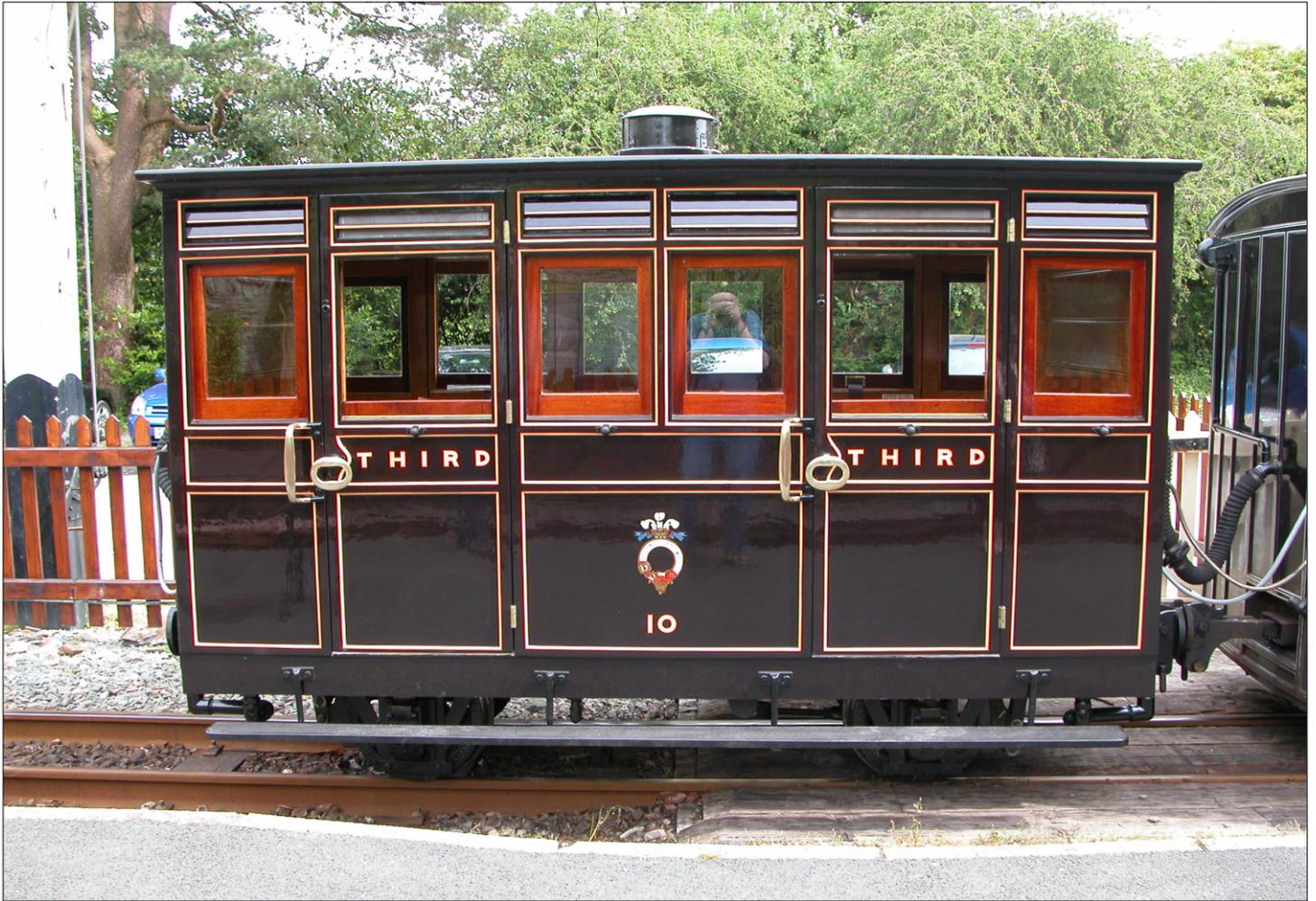
There are four little ribs on the underside of the roof, which fit into the gaps between the inner and outer sides and ends. After painting and inserting the glazing, the roof can be glued permanently into place. However, you may wish to leave it removeable to show off the detailed interior. It should stay put by 'friction' alone (although beware of the risk of dropping the main body if someone tries to pick the coach up by the roof!), but a blob of Blue Tack or similar in opposite corners, or even all four corners, will assist if your track is rough.



PAINTING AND FINISHING

This model is intended to have assembly largely completed before painting. The brass door 'furniture' goes on permanently after painting; the buffer heads remain removeable, whilst the glazing and roof go on last, and could remain removeable if desired. On the other hand, the wheels are permanently 'trapped'. Whilst painting, it would be desirable to put a temporary piece of thin card or Plastikard into the glazing slot to separate interior and exterior painting.

The colours and lining & lettering of the recently completed full-size replica are believed to represent the livery carried for most of the life of the carriages. The sides and ends are in a dark plum colour fully lined out, with the drop lights (including the fixed ones either side of the doors) in varnished mahogany, and the door furniture polished brass. The underframe ironwork is black, and



The full-size replica coach at Tanybwllch on the first day in public service, 26 May 2007.

the roof mid-grey. The beading on the coach ends has a thin white line on each edge, whilst on the sides, the beading edges are gold, lined in red. the class designation on the doors and the carriage number in the middle panel is gold edged red, and a Festiniog Railway 'Prince of Wales Feathers' crest is on the middle panel above the number. The interior finish (sides, ends and seats) is largely 'scumble', which is a painted effect intended to look like coarse wood grain. The underside of the roof is painted off-white, and the floor is mid grey.

Phoenix Precision sell a colour intended for London & North Western Railway coaches (their ref. P379), which appears to be a close match for the outside. They also sell paint for LNER "Varnished Teak" (their ref. P60) which is suitable for representing 'scumble' on the inside. The other Phoenix Precision reference numbers are: the varnished mahogany window frames - P988, the grey roof and floor - P65, and the black underframe parts - P975 or P981. Some of these colours are available as aerosols for those who wish, but the best results are obtained using a quality air brush. Dry print transfers can be ordered from Blackham Transfers, who has artwork for the crest and lettering.

The secret of good painting is preparation. Make sure that all parts are thoroughly clean, dry and free of any grease. Everything should be washed with a suitable de-greaser, most kitchen cleaners, such as Cif (ex Jif), should be OK, but always check that it does not affect the polystyrene main body parts by trying on a waste sprue. Some cleaners may contain solvents; product very similar to our own MEK PAK are sold as de-greasers, and look what that does to polystyrene! Use an old toothbrush to work into the corners and crevices. Rinse in clean water and once thoroughly clean and dry do not handle the model except with surgical gloves or tissue paper/kitchen roll. Leave to dry, at least overnight, before applying the primer. Cover with a clean cardboard box or similar to prevent dust settling.

Follow your chosen paint manufacturers recommendation on the use of primer on plastic models. If needed at all, only a fine mist coat will be required. Modern car type aerosol primers are usually OK on polystyrene (check that it is "Acrylic" type), but a test spray on a piece of sprue would be a wise precaution.

Next apply the finishing coats and any lining and lettering. When ready, glue in the brass door furniture, insert the glazing, and attach the roof (permanently if desired). The final job (optional) is to give everything a coat of rust, dust, dirt and grime! There are now several very good books available on the subject should you wish to go further.

Phoenix Precision Paints Ltd., PO Box 8238, Chelmsford, Essex, CM1 7WY

Blackham Transfers, 9 Benar View, Blaenau Ffestiniog, Gwynedd, LL41 3UT

Ref.16C01: Festiniog Railway 'Ashbury' 4 wheel Coach List of Parts

		<u>No. in Kit</u>
Castings	X16C0101	Lamp Top (2 items on sprue)1
	X16C0102	Couplings (3 items on sprue)2
	X16C0103	Door Handles (4 items on sprue)2
	X16C0104	Footboard Supports (4 items on sprue)2
Plastic Parts	X16C0110	Roof1
	X16C0111	Inner and Outer End (2 items on sprue)2
	X16C0112	Outer Sides2
	X16C0113	Inner Sides2
	X16C0114	Floor1
	X16C0115	Seat Tops (4 items on sprue)1
	X16C0116	Seat Ends (5 items on sprue)1
	X16C0117	Solebar/Axleboxes; Footboard; Headstock (3 items on sprue) ..2
	X16C0118	Lamp Rim (2 items on sprue)1
	X16C0119	Lamp Bowl (clear).....1
Other Parts	Wheels	1618FRW.....1 pack
	Plastiglaz	150mm x 70mm.....1
	X715552	Buffer Springs (to be cut into two)1
	Coupling Nuts	10BA Brass2
	Coupling Link	"Gauge 1" Links2