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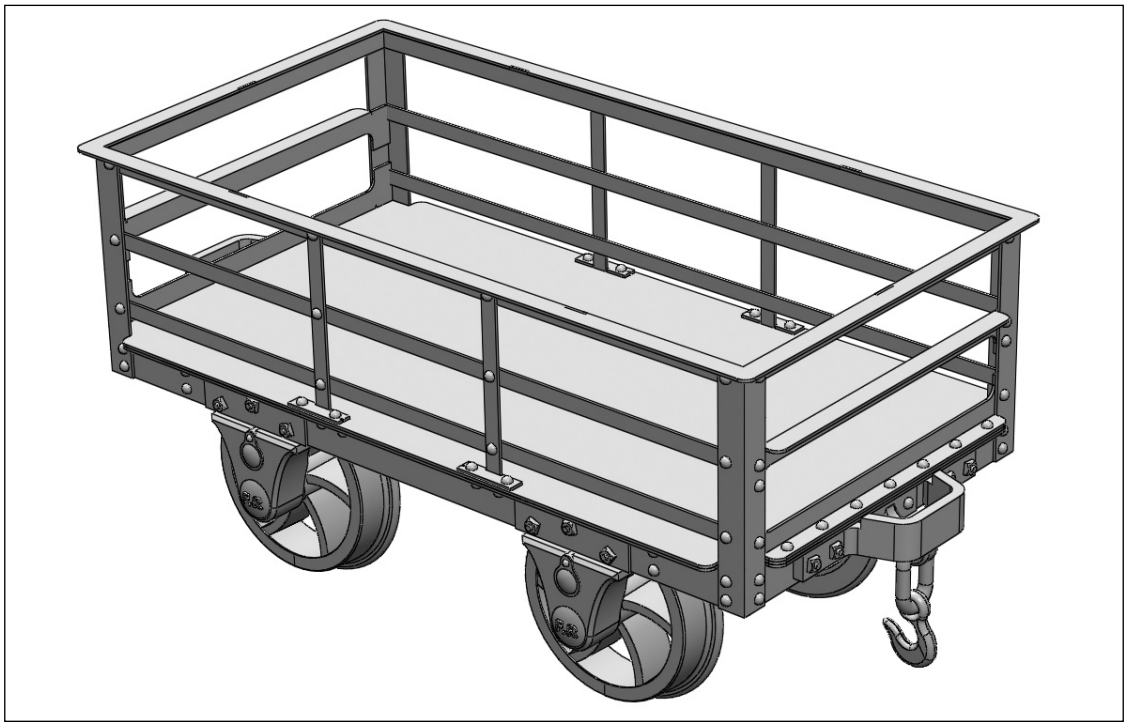
Ref. 22W04 - ⅞" Scale
Festiniog Railway 2 Ton Slate Wagon



INTRODUCTION

Prototype Information

The Festiniog Railway (these days it is known as the Ffestiniog Railway) was and still is probably the best known narrow gauge line in the World. Its early use of locomotives on such a narrow gauge (1ft-11½in) drew much attention, and encouraged the use of less-than-standard gauges. It pioneered the use of articulated locomotives as well as bogie coaches. However its primary role (until the days of mass tourism in the second half of the 20th Century) was the carriage of roofing slates from the quarries of Blaenau Ffestiniog. At one time, there were well over a thousand wagons for carrying the finished slates, and the most common was the iron bodied type carrying 2 tons, as depicted in this kit. Loaded trains ran downhill by gravity, so a proportion of the wagons were fitted with a handbrake. In any train, which could have up to 100 wagons, at least 1 in 5 had to have a brake, but it is not known how many of the total fleet were so fitted, probably 1 in 3.

Model Information

We are making this kit available in un-braked form only. If there is sufficient interest, we will produce the braked version as well.

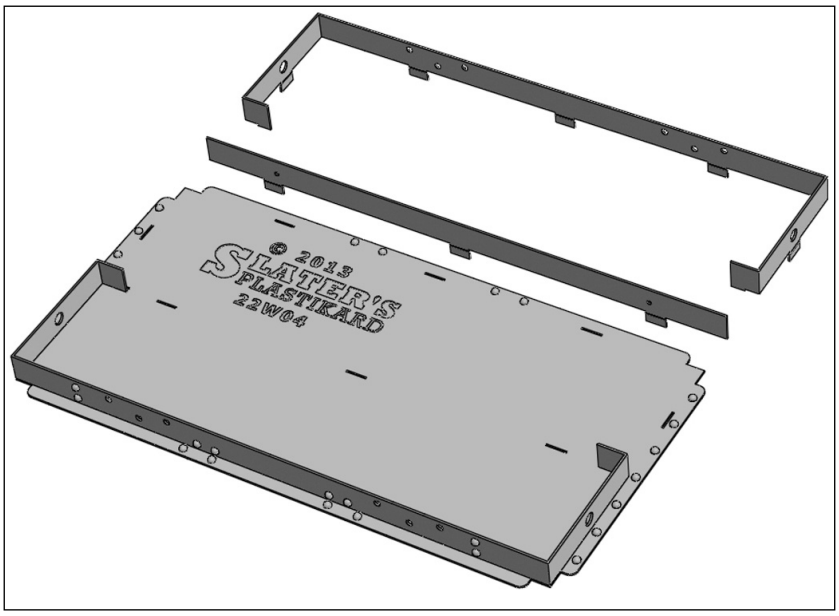
The representation of rivets in this kit is by the "push out" method, using half etched holes on the back of the part, and needing a suitable tool for the purpose. The best tool is a proper rivet press, with a male punch and female die, of which there are several available; you will need a 1.4mm diameter die. It is possible to do the rivets with a blunt scriber (or similar) pressed onto a fairly hard surface (such as an off-cut of MDF). There are a number of "rivets" on a waste part of the etched fret to practice on. Alternatively, you could drill out all the half etched rivet locations and use real brass rivets (not included). As a final resort, don't do the rivets at all; this will look a lot better than badly formed rivets.

The assembly of the etched brass components, is best done by soldering. However, all main parts are designed to fold up like metal Origami, then clip together with tabs and foldovers. It is thus perfectly possible to assemble with epoxy glue (Araldite or similar).

INSTRUCTIONS

Check parts against the list of contents (back page). The underframe and body sections are assembled separately; the last operation is to join them together, so either can be done first.

Underframe



1 Take lower floor (part 4 - with the Slater's Plastikard), and carefully dress the edges to removes tags and etching 'cusp'. Emboss rivets around the edges.

2 Take the solbar/headstock strips (parts 9 & 10). Emboss the rivets, then fold each solebar/headstock, as shown in the photo. Insert into the slots in the floor, bending the 'foldovers' to hold in place. Note that the embossed rivets, the Slaters lettering, and the solebars are on the same 'face' of the floor, i.e. the bottom.

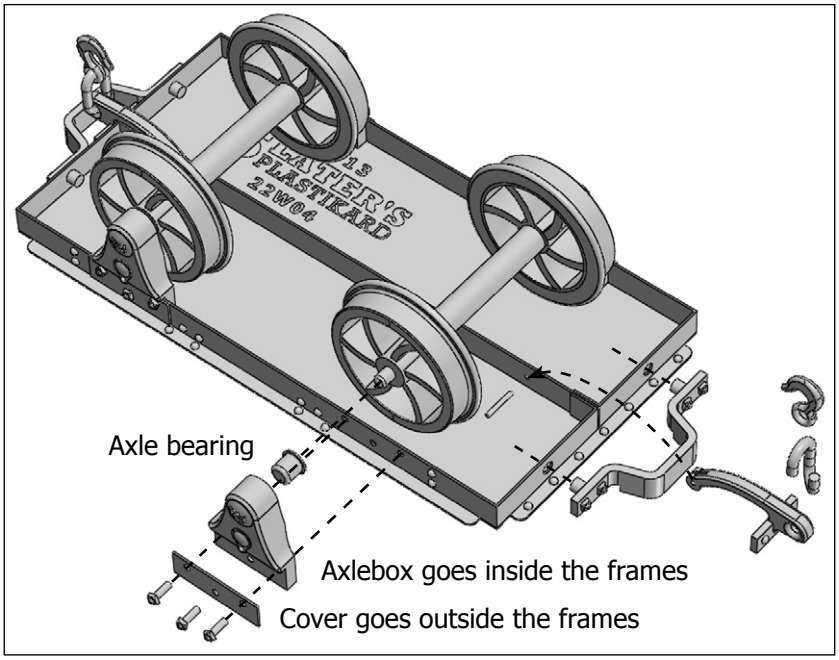
3 Take the centre stretcher (part 3), and insert into the floor, fitted between the headstock sections. Bend over the foldovers. At this stage carefully solder all the seams and tabs to permanently join the assembled parts together. If you are using epoxy glue, this can be achieved using a fillet of glue along the inside of the solebars etc., BUT make sure you leave clearance for the axleboxes, and couplings. Better still, don't glue the solebars etc., until all these items have been fitted. Once the solebars and headstocks are fitted permanently (either now or latter), trim off the tabs flush with the top of the floor; this surface will not be visible on the finished model, so it does not have to be too neat and tidy!

4 To fit the axleboxes, we found that the best way was to use the 24hour setting variety of epoxy glue (even if you solder everything else) to give plenty of time for fitting and final adjustments. Carefully check the axleboxes and remove any sprue remains or part line flash. Using a 1.6mm (1⁄16") drill bit drill the three dimples in the top part right the way through; try to hold the drill vertically, but this is not critical. Glue a brass bearing into each axle hole, and check that there is no glue left liquid to 'gum up' the axles.

5 Now 'dry fit' each axle box in turn. On each one, the three holes you've just drilled should line up with the three holes in the solebar. There is also an etched cover plate on the outside of the solebar (parts 5-8), and the holes in this should line up too. Take the lost wax sprue containg the square headed 'nuts', and snip off each of the 12 larger ones leaving a tail about 5mm long. Each one pushes through the cover plate, the solebar and the top part of the axlebox; you may need to pass the drill bit through all three. If the 'nuts' still don't go through, progressively enlarge the holes in gentle steps until they do.

6 When all is well, place the axleboxes on the end of the axles, and using the 24hr epoxy sparingly, place each pair of axleboxes in place, then the cover plate (with only a smear of glue to avoid it oozing out), and then the nuts. When you've done both axles, carefully check that the axles are parallel and that the axleboxes are perpendicular to the floor. Use a piece of 'bluetack' or 'plasticene', or a clothes peg to hold everything in place and set aside to full harden.

7 Remove the two buffer plates from their sprues, cleaning up the remains of feeds with fine files. Check that the pins on the rear fit into the holes in the headstocks (enlarging as necessary), then solder or glue in place, noting that the slight cut-out goes towards the top.



8 The coulping brackets should be removed from their sprues. The slot fits over the underframe centre stretcher with a pin from 40thou wire inserted through the casting and etching. The slot may need easing with a fine saw blade, and the holes may need enlarging to 1mm. Try in position with a wire pin - the 'T' piece should come flush with the headstock, but do not fix in place until the coupling links have been fitted.

9 Remove the cast hooks and the plain links from the sprue. Feed the link through the bracket and the hook, the close up the link with fine pliers. Note that the hook faces towards the wagon when fitted in place - see photograph. Now re-fit the bracket and solder or glue permanently, making sure you don't solder up the link to the bracket.

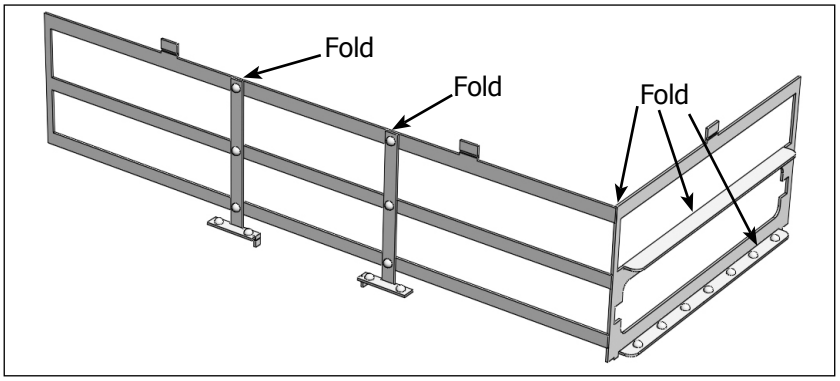
The underframe is now finished apart from painting.

Body

10 Cut out the floor (2) and top rim (12) and dress the edges to remove tab remains and etching cusp.

11 Very carefully remove both side/end foldups (1 and 11), equally carefully removing the tab remains with a fine file. Emboss all the rivets (half etched dots on the back), following which it may be necessary to gently straighten each part with your fingers to correct the resultant distortion.

12 Both side/end pieces fold up, which looks complicated, but is actually quite simple. As with the underframe, assembly is best done with solder, but glue is also a practical option.

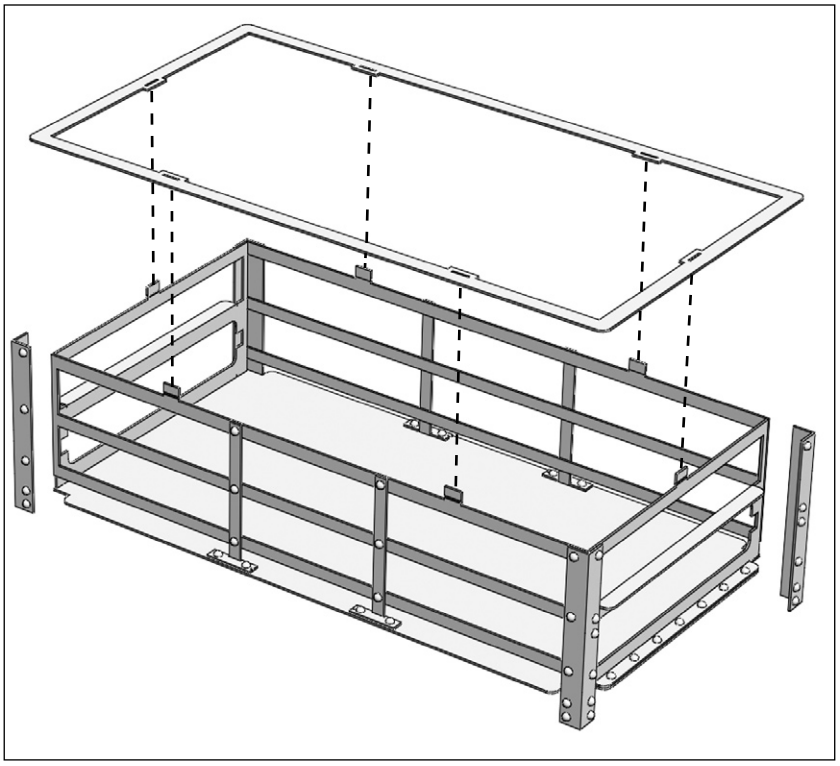


13 First fold the centre vertical strips down and form the base of each. (The fold line at the top is on the outside of the fold, and goes through 180º; the other fold lines are on the inside of the fold and go through 90º). After checking that the strips are truly vertical, solder or glue them to the horizontal rails. Once secured, file off the remains of the fold lines, level with the top rail.

14 On the end section, fold the round-ended angle pieces to 90º (having first rivetted the bottom one), and then fold the side and the end to 90º. The result should look like the picture.

15 Fit both side/end pieces to the floor, using the tabs in the base of the centre verticals and the small tabs at the bottom of the end sections. Fold over the small tabs to secure in place to the floor until everything is soldered up.

16 Fit the top rim to the six projecting tabs; fold the latter over to secure. Solder or glue everything permanently in place, then remove the 'loops' in the top rim which were needed to encompass the tabs. The top rim and top rail all round will now resemble the angle iron from which the real thing is formed.



17 The corner angle pieces (5-8) are rivetted and folded to 90º. these fit with the top hard up against the underside of the top rim angle iron, but project below the floor. Note that they are handed, two of each. Study the pictures to get them in the correct orientation, but it's easy to work out, because the rivets on the corner plates line up with the side strips and the end horizontal angles.

18 Remove the remains of the tabs flush with the underside of the floor; like the top surface of the underframe, this surface will not be visible on the finished model, so it does not have to be too neat and tidy!

19 The last operation is to unite the underframe and body. The four angle irons of the body fit over the corners of the underframe. You might need a little bit of trimming, especially if you've been a bit over-enthusiastic with the solder or glue! The two parts could be left separate (merely being held together by friction) or a drop or two of epoxy will do the job permanently.

Painting & Finishing

20 Now the interesting bit starts! The majority of Festiniog iron bodied slate wagons were painted either brick red or mid grey, the change taking place around the First World War. Some have been observed painted black. The current preserved fleet has a mixture of all three, but with grey predominating.

21 All wagons carried a fleet number, the two ton iron bodied wagons carried numbers in the range 501 to 805 and 1001 to 1079 plus some numbers in the range 1 to 500. Suitable lettering sheets are available from Blackham Transfers of (appropriately) Blaenau Ffestiniog.

22 The Festiniog Railway supplied slate wagons to each of the quarries it served. Individual wagons seem to have allocated to particular quarries, and this allocation was denoted by colour coding painted on the middle of the middle rail. For example, Oakeley (the largest served by the Railway) had a blue patch. Unallocated wagons had no colour coding. The best advice for those who want to include this feature on their model is observe the current preserved fleet, which is planned to number about 100 wagons.

23 Being everyday working vehicles, the paintwork was probably not maintained to a high standard, so a certain amount of 'weathering' should be applied; there are several good books available on this subject.

24 The finishing touch is a load of roofing slates; one way of doing this is to use 20thou black Plastikard cut up into suitably sized rectangles, with the edges bevelled by scraping the edgeswith a sharp scalpel blade held at approximately 45°. Assemble them into a block - no doubt the quarrymen had a particular way of arranging them for each different size, but the real things would have been jammed in hard to avoid movement and thus breakages. On any exposed faces or edges, dull the surface by rubbing very fine emery paper or an abrasive rubber, and a dark grey matt finish is the result. Ffestiniog area slate tended to have a very neutral grey colour, so you can spend time adding realism to the model.

Bibliography

The have been numerous books published on the subject of the Festiniog Railway. Probably still the best, despite being one of the first, is the two volume history writen by J. I. C. Boyd, and published by the Oakwood Press of Usk, Monmouthshire. The latest edition was published in 2002.

Some good pictures of the preserved fleet of slate wagons can be found on this web page:

http://www.festipedia.org.uk/wiki/Slate_Waggons

LIST OF PARTS

Part Number	Description	No. Per Kit
Etched Brass		
X22W0401	Sheet 1	1
X22W0402	Sheet 2	1
X22W0403	Sheet 3	1
Whitemetal		
X22W0410	Axlebox	4
Brass		
X22W0420	Coupling Bracket (2 items on sprue)	1
X22W0421	Buffing Plate (2 items on sprue)	1
X22W0422	Coupling Hook & Link (4 items on sprue)	1
X22W0423	"Dummy" Nuts (16 items on sprue - 12 large ones needed)	1
Other Parts		
X22W0430	Wheelset (2 wheels on an axle with bearings)	2
—	40thou (1.5mm) Brass Wire - 1" length	1
—	Instructions (this document)	1