

Rumney Models – BR 1/801 Fish Van Kit

This set of instructions covers the BR 1/801 Fish Van kit C.51.



Prototype Information

The BR 1/801 fish van was the last of the traditional steam era fish vans to be built. They were constructed between 1957 and 1960 at Faverdale. They came under the wonderfully eclectic group that was known as Non-Passenger Coaching Stock. Their similarity to the earlier LNER diagram 214/ BR 1/800 fish vans should be obvious but there were plenty of differences not least the use of the BR clasp brake.

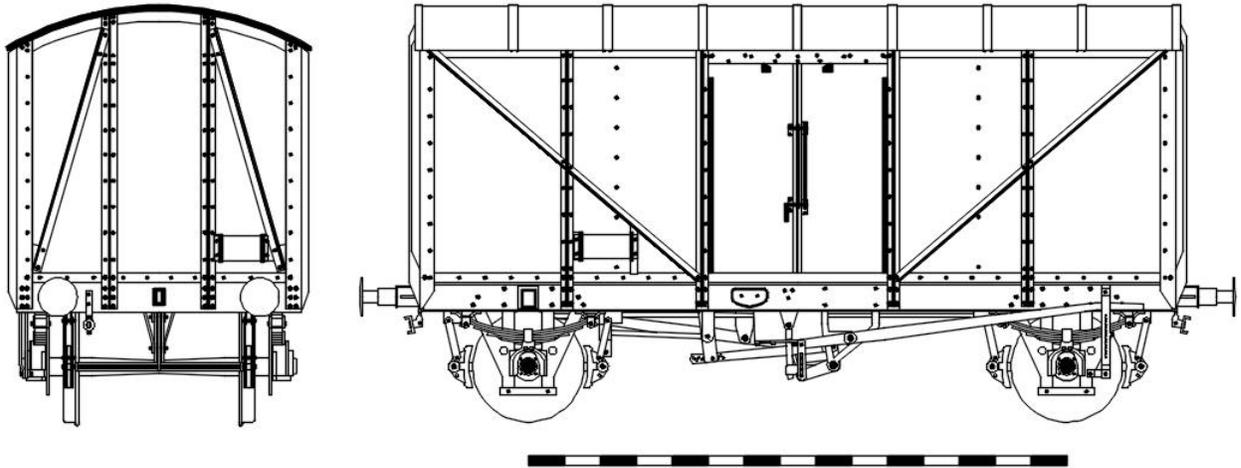
Their 15' wheelbase and the fitting of roller bearings to all meant that they were rated at 60mph and whilst they were mainly used on the long distance runs they could also be seen on some of the shorter runs and yes, they have been spotted in West Wales hence my excuse for one or two!

Full build details are as follows:

E87500 – E87692	Lot 30344	Faverdale 1957
E87693 – E87957	Lot 30344	Faverdale 1959
E87958 – E88057	Lot 30344	Faverdale 1960

Following the loss of fish traffic on BR around 1968 many of the vans were used in Parcels traffic, and were given the code SPV under TOPS. Others were transferred to the engineers and a few ended up in general merchandise traffic as ordinary vans.

Further information and photographs of the vans can be found on the wonderful resource that is Paul Bartlett's website <http://paulbartlett.zenfolio.com/brfish> and in BR Parcels and Passenger Rated Stock Volume 2 by David Larkin.



Notes

Read through the instructions first and familiarise yourself with the components. Drawings and photographs taken during the construction of the test etches are included to attempt to make my waffle clearer. Note that not all the photo are from this particular clasp brake chassis but suitably illustrate the item in question.

Important: All fold lines are through 90° with the fold line on the inside unless stated otherwise.

Everyone has their own soldering methods. I now use a temperature controlled soldering iron with predominantly 145° solder and La-Co paste flux. For a long time I used an Antex 18W soldering iron on virtually everything with few problems.

Check all holes before removing parts from the fret. The drawing process for etching, particularly if you use a CAD program as I do, is extremely accurate but the actual etching process itself is not an exact science. If the fret is slightly over etched then there is no problem but if they are under etched the holes will need enlarging. I find that this is easiest to do before removing parts from the fret. The hole sizes will be noted at the appropriate points as we go along.

Technical

The suspension is individual springs made from 0.008" steel guitar wire soldered to the etched spring/bearing carriers. For this you will need a suitable flux. I use Carr's Black label. If the finished vehicle is weighted to 50g with the weight evenly distributed then this will produce a spring deflection of 0.5mm. Don't be tempted to up the gauge of spring wire. Even moving up to 0.009" springs will have a significant effect and you would need to weight the wagon to 90g to obtain the same spring deflection. Also don't over weight the wagon or the springs will not have enough upwards movement before they hit the axleguards. Think of the 50g total as an ideal weight but also a maximum. There are notes on weighting the wagon at the end of the instructions.

The chassis is designed to produce a buffer centre height, when the kit is completed and weighted to 50g of 13.8mm when using Exactoscale wheels. The Exactoscale wheels are 13.4mm (3' 1½") in diameter. Different makes of wheel may affect the ride height depending on their diameter.

Materials list

Several sizes of wire are needed to build the kit. Eileen's Emporium are good source for these and they do a mixed sizes pack if you don't want to buy large quantities.

0.31mm - Some parts of the brakegear, axleguards
0.4mm - Some parts of the brakegear
0.5mm - Brake yokes
0.6mm - Brake levers
0.8mm - Main brake cross shaft
1.0mm - Chassis alignment pins

You will also require items such as buffers, vacuum cylinders, vacuum pipes, axleboxes and springs as well as couplings to complete.

For buffers I would recommend those produced by Lanarkshire Model Supplies. The quality is excellent. All were fitted with pneumatic types. I believe that they were initially fitted with 1' 8½" Dowty (BH02) buffers but 1' 8½" Oleos (BP01) became common. All had 13" heads.

Metal buffer heads and springs for Oleo and Dowty types with the correct 1.45mm diameter spindle and 13" head are available from Wizard Models (UC025).

Lanarkshire Models also do cast swan neck vacuum pipes, code VP03. These look very good but being whitemetal I find them quite fragile and easily broken. Homemade ones from brass/nickel silver/copper wire around 0.8mm in diameter and very thin wire wound around would probably be better.

You will need 18" vacuum cylinders. Lanarkshire Models have just released castings for this type. Something will also be coming in the not too distant future from Rumney Models as well.

I am currently (April 2016) working on correct springs and axleboxes for this kit. I am hoping these will be available towards the end of 2016. In the mean time...

Axleboxes were roller bearings. Wizard Models do hooded (BRC023) and non-hooded (BRC022) roller bearings. MJT also do a non-hooded roller bearing (2256A).

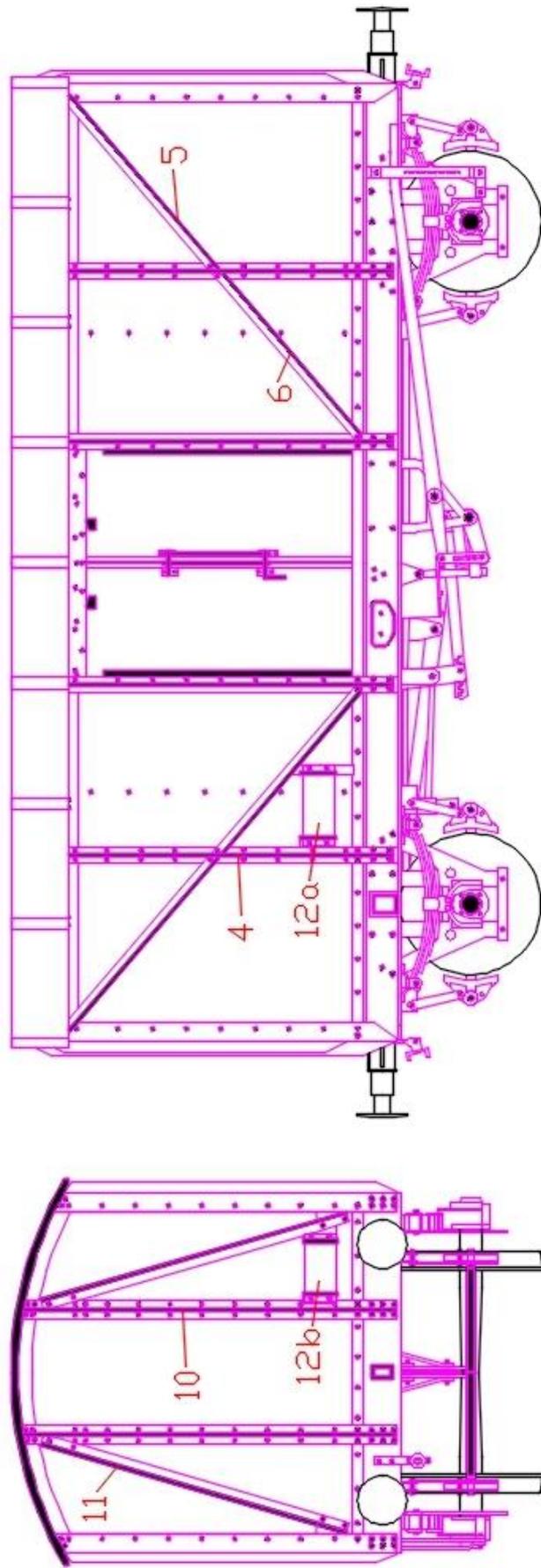
Springs on the prototype were 6 leaf. No one I am aware of currently does a 6 leaf spring. The closest is the 5 leaf spring from MJT (2285) but the mould is a bit long in the tooth.

Screw couplings were fitted. I have used components for both the coupling hooks and screw couplings. I find the hooks are a bit on the big side but if you aren't using auto couplings this is a help. The etched screw coupling is good.

Contact details for the above suppliers can be found at the end of these instructions.

BR 1/801 Fish Van - Body

Fig. 1a



Body

The body is designed to be as easy to assemble as possible. There are three layers to the sides and ends. These are soldered together and then the stanchions and other detail is added. Once the sides and ends are complete they are fixed to a fold up frame which assures that everything is nice and square. Finally the doors are added.

Note

The half etched parts of the side and end overlays are very thin. Care should be taken when soldering them together as it is possible for them to distort. If you follow the method I used, which will be outlined shortly, you should have no problems at all.

Component List

- 1 – Inner sides
- 2 – Middle side
- 3 – Outer side
- 4 – Vertical side stanchions (labelled A on fret)
- 5 – Angled side stanchions – top (labelled B1 on fret)
- 6 – Angled side stanchions – bottom (labelled B2 on fret)

- 7 – Inner ends
- 8 – Middle ends
- 9 – Outer ends
- 10 – Vertical end stanchions (labelled C on fret)
- 11 – Angled end stanchions (labelled D on fret)

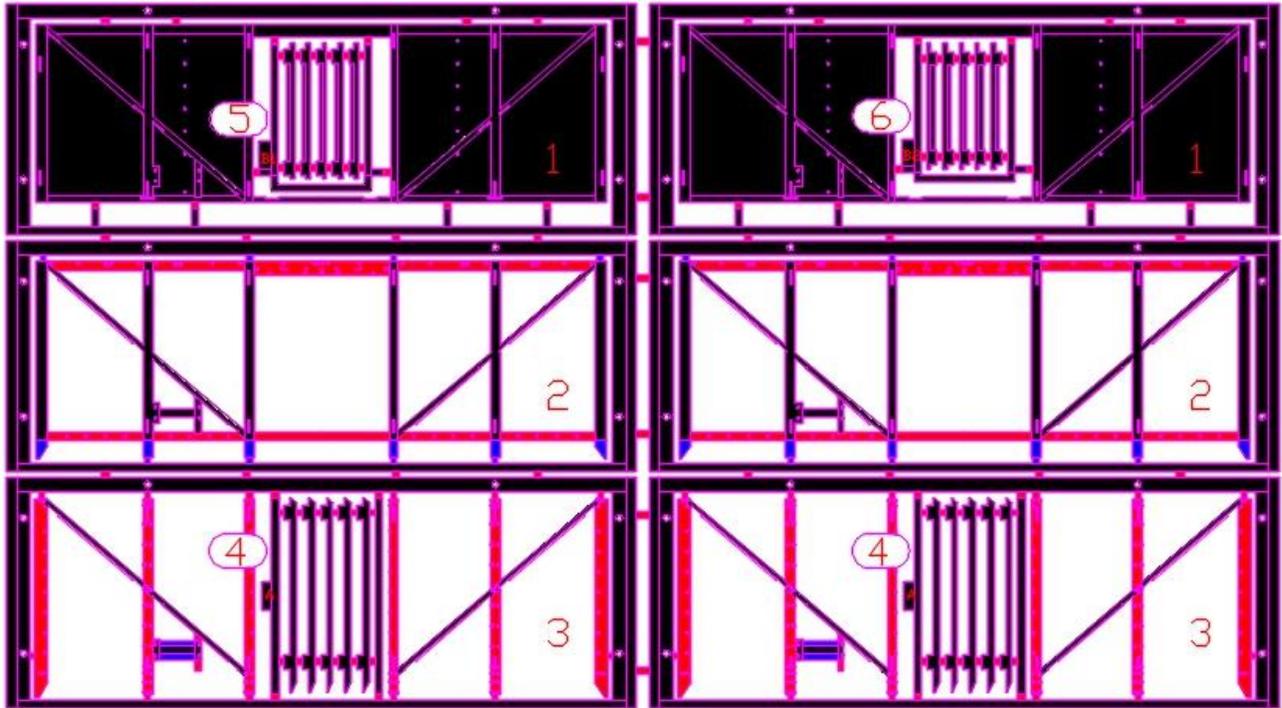
- 12a – Side label boards (large)
- 12b – End label boards (small)

- 13 – Body frame

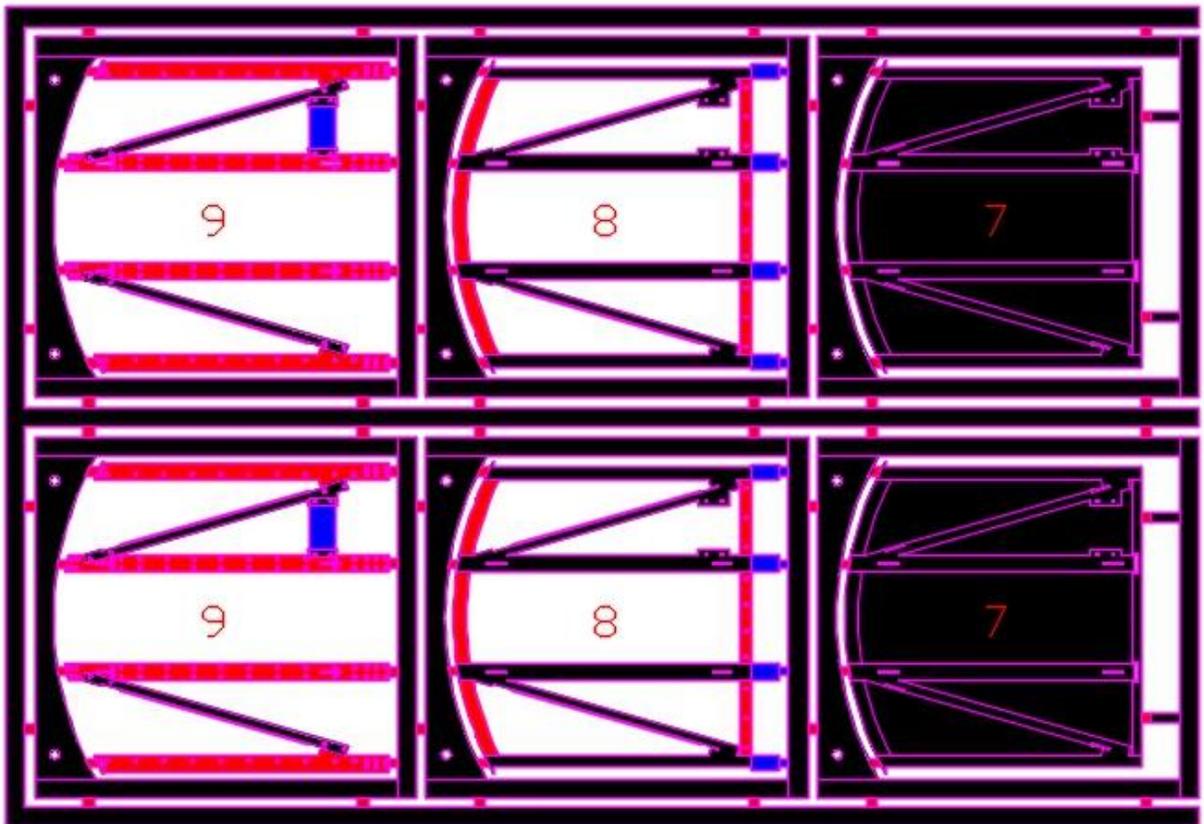
- 14 – Door frame
- 15 – Door detail layer

- 16 – Vacuum cylinder safety loops (for use with Rumney Models 18” vacuum cylinder)

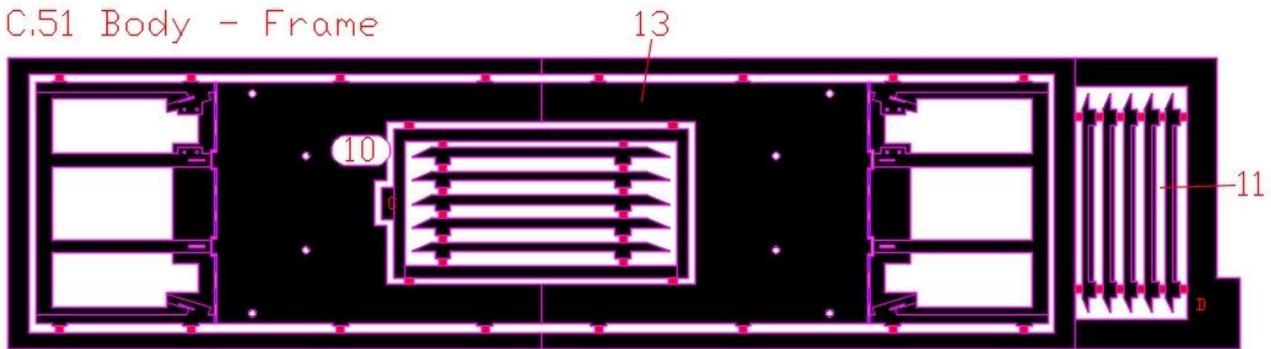
C.51 Body - Sides



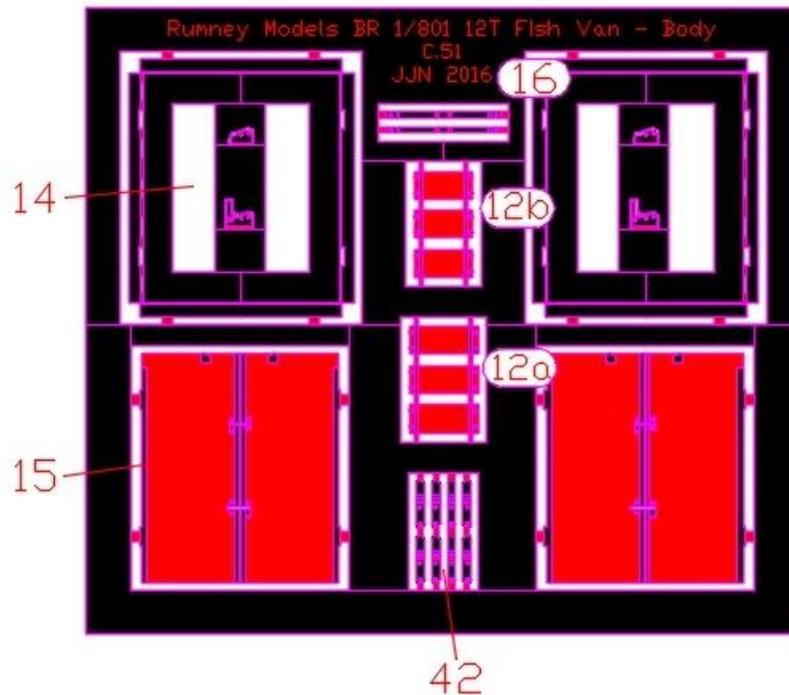
C.51 Body - Ends



C.51 Body - Frame



C.51 Body - Doors

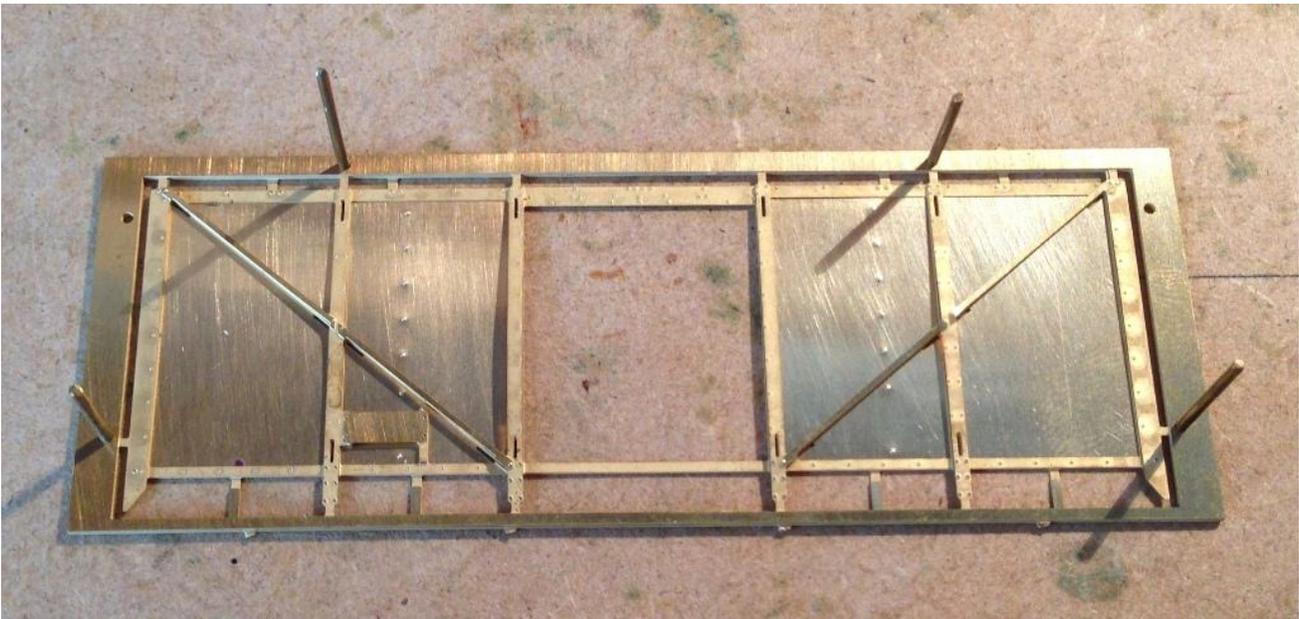
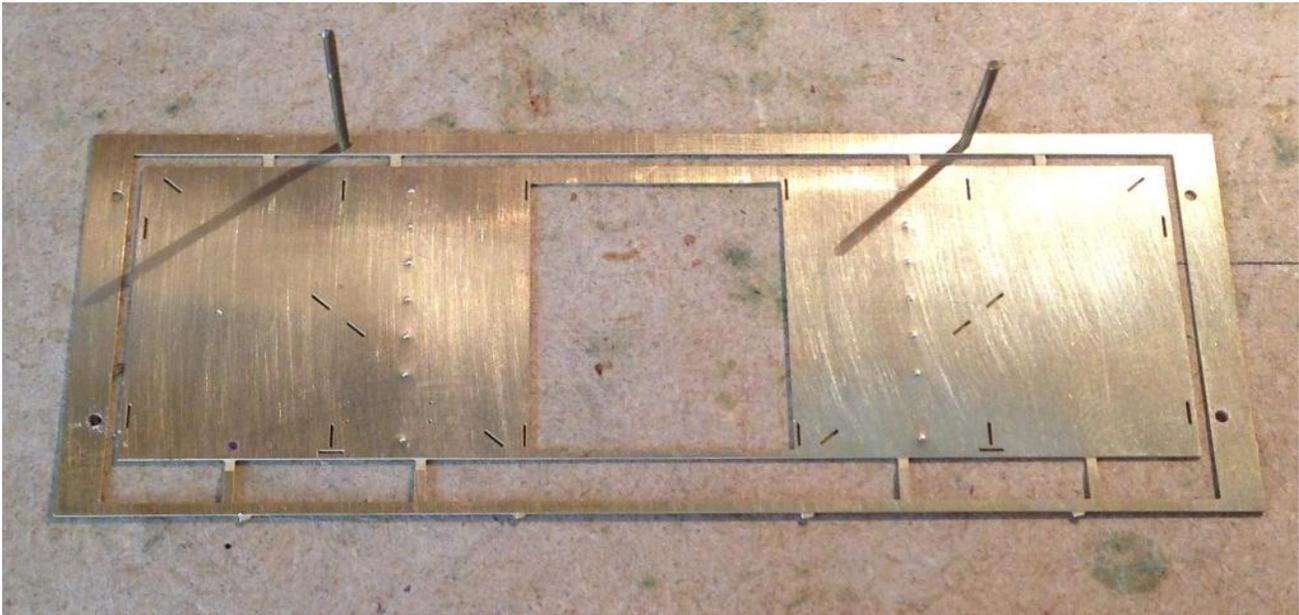


Construction

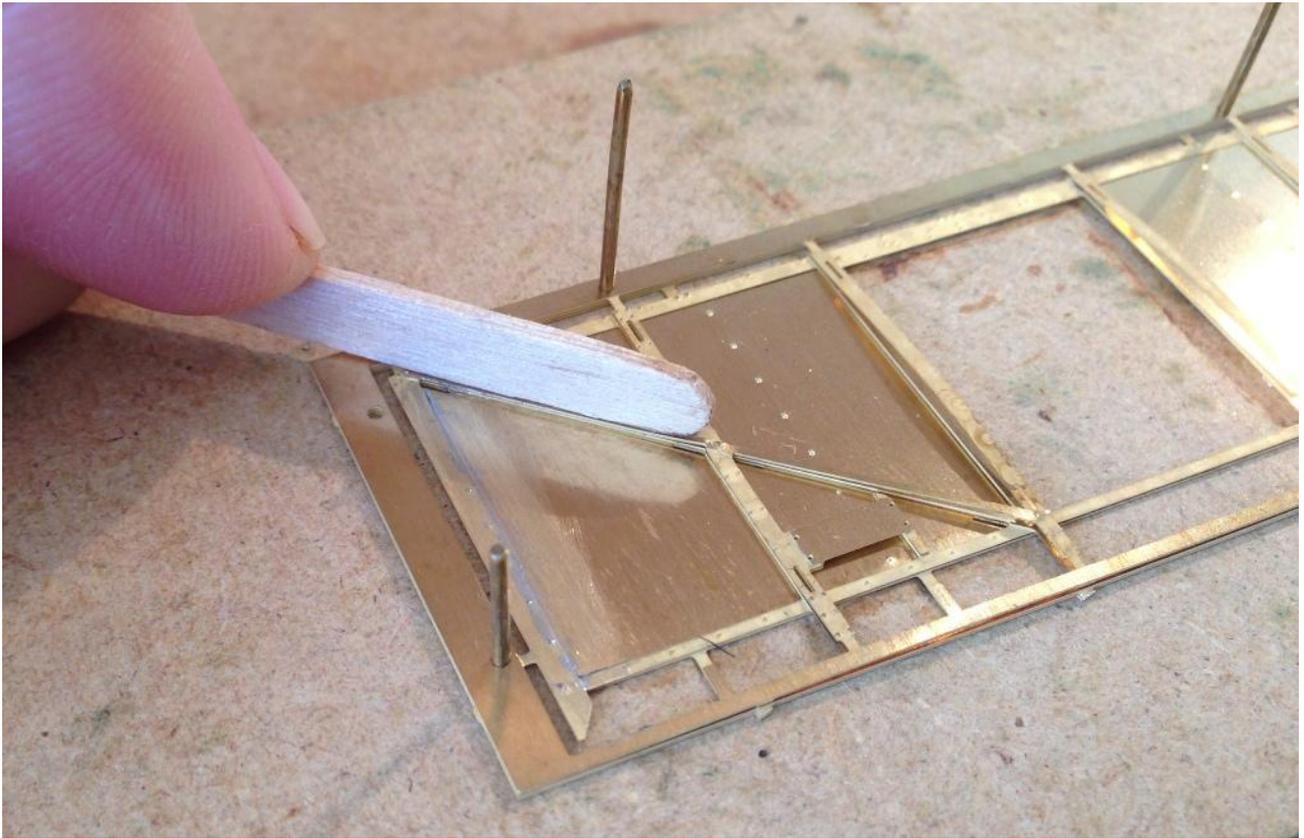
Firstly we need to create a jig to align everything as the sides are assembled.

Using one of the inner sides (1) as a template drill a series of 1mm diameter holes into a piece of spare mdf or plywood. There are 6 holes on the sides but I only found using only four was more than fine to keep everything aligned. Fashion up some 1mm diameter 'pins' using brass or nickel silver wire to locate the sides on the jig. Make sure that the ends are chamfered as this will make fitting them easier.

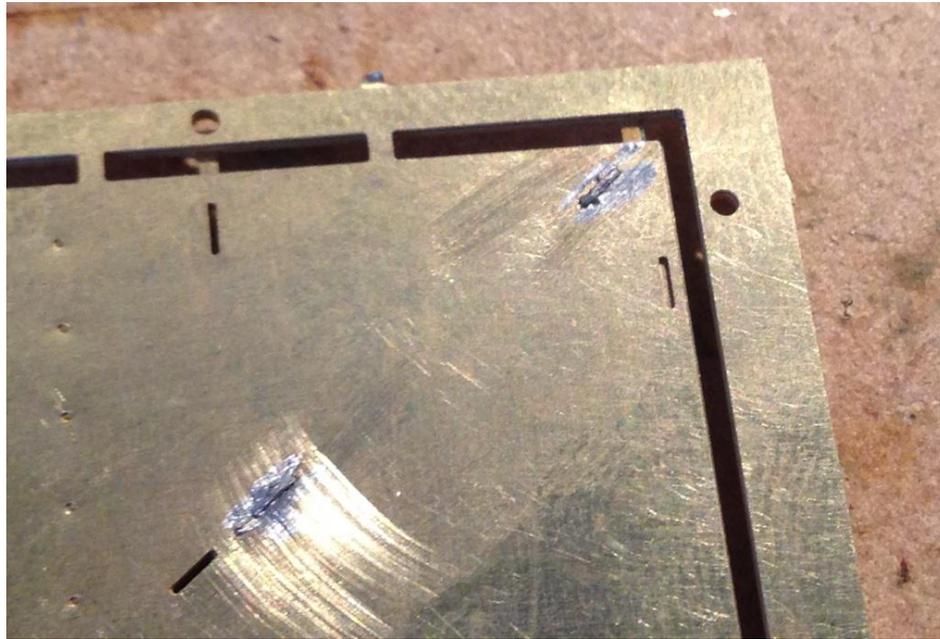
Check that the holes in the inner sides, middle sides (2) and outer sides (3) can accept the 1mm diameter pins. The pins should be a nice tight fit. Press out the half etched rivets on the back of the inner side and locate onto the jig with using the pins. Then locate the middle side on top followed by the outer side. See photographs below.



The three layers now need to be soldered together. As indicated earlier the layers are very thin and applying too much heat to them without restraining them in some way. For this reason I would recommend **not** tinning them and sweating them together even with an RSU. The act of tinning the thin parts is very likely to cause them to buckle. If you do choose to tin the parts first you do so at your own risk! Instead work your way around the side with solder whilst pressing the layers firmly together with a wooden stick of the kind you find in a coffee shop used to stir your drink. I have so far done two bodies using this method and have had zero problems.

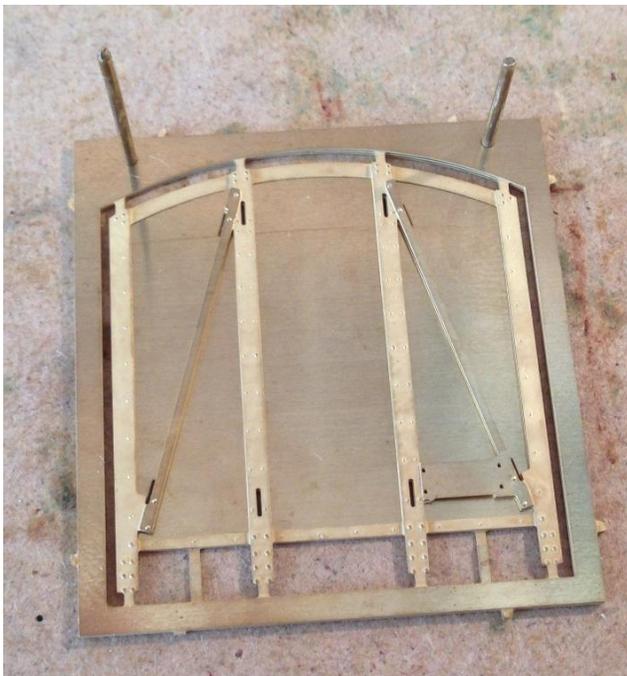


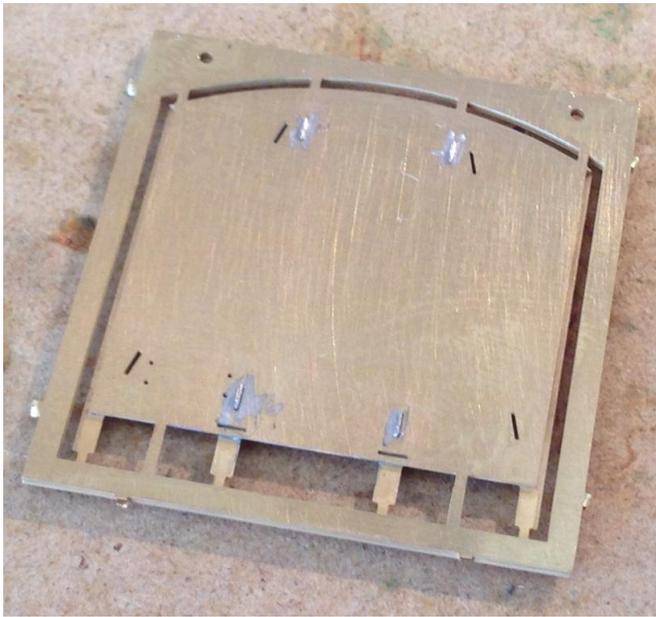
Once the sides are securely soldered together the stanchion detail can be added. Simply locate the vertical side stanchions (4) and angled side stanchions (5-top and 6-bottom) using the slots and tabs provided and solder in place from the back. Note that there is a correct way up for all the stanchions. This should become obvious when you try to fit them. See photographs immediately above and below.



Finally the side label boards (12a) can be added. These are the longer of the two sizes. Use the outline on the sides as a locating guide. Repeat everything for the other side.

This whole exercise can now be repeated with the ends. It is exactly the same firstly pinning then soldering the inner ends (7), middle ends (8) and outer ends (9) together. Then adding the vertical end stanchions (10) and angled end stanchion (11) before fitting the label boards (12b).



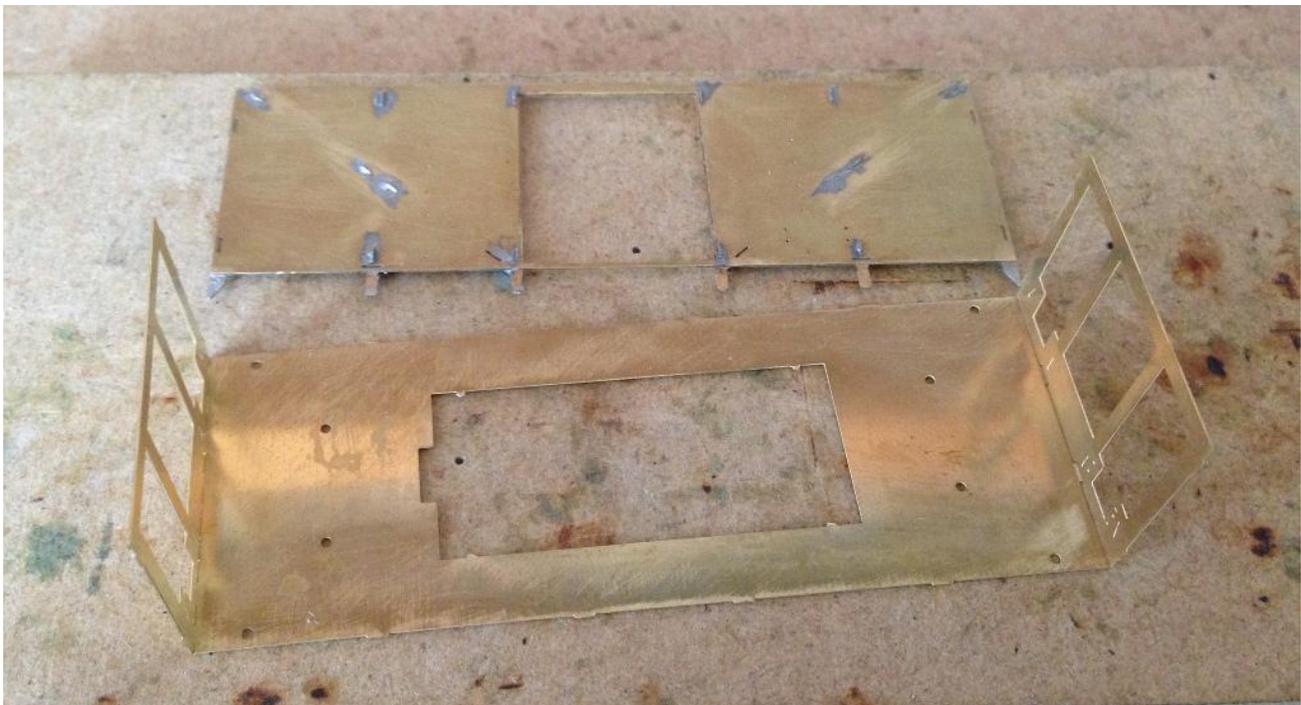


You should now have two completed sides and two completed ends. Now is the time to remove them from their frames. Carefully work your way around each one of them using a piercing saw.

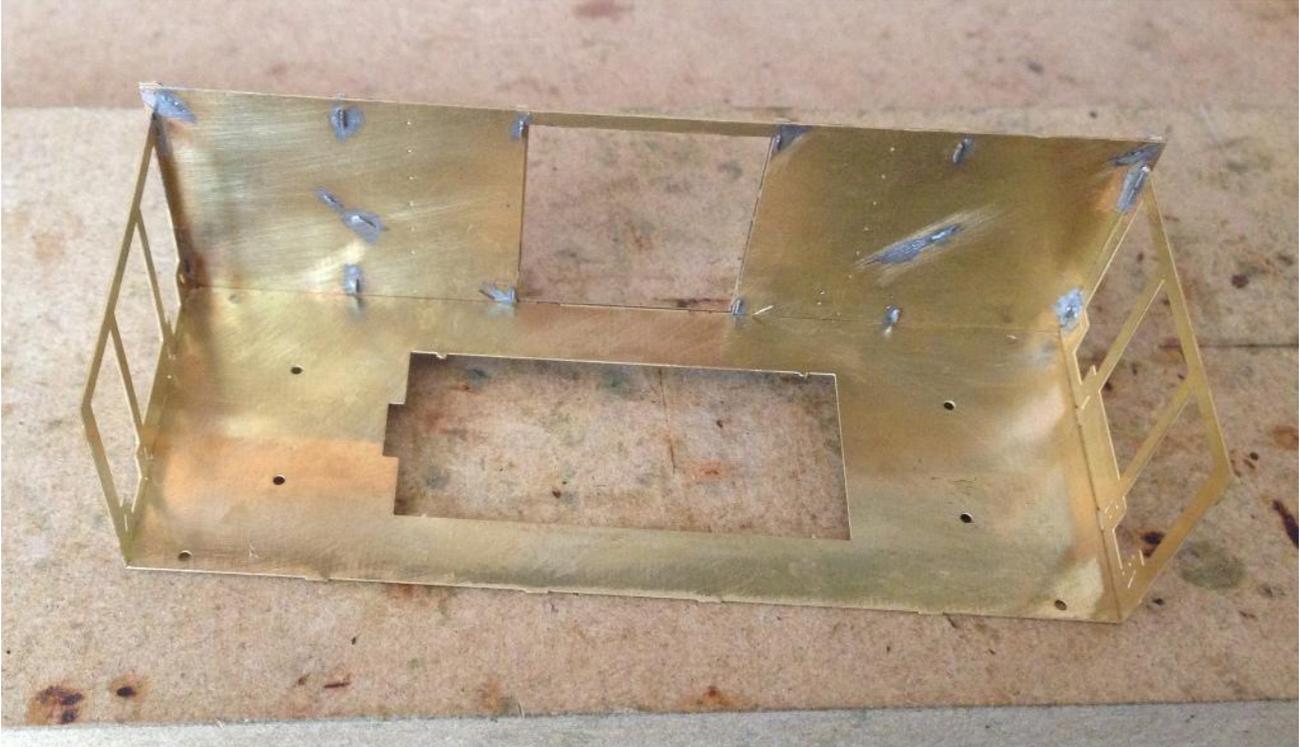
Once free from the frames use a very small amount of solder to make sure that the bottoms of the stanchions are securely soldered to the sides and ends. If there are any areas that haven't been soldered together securely then now is the time to rectify this.



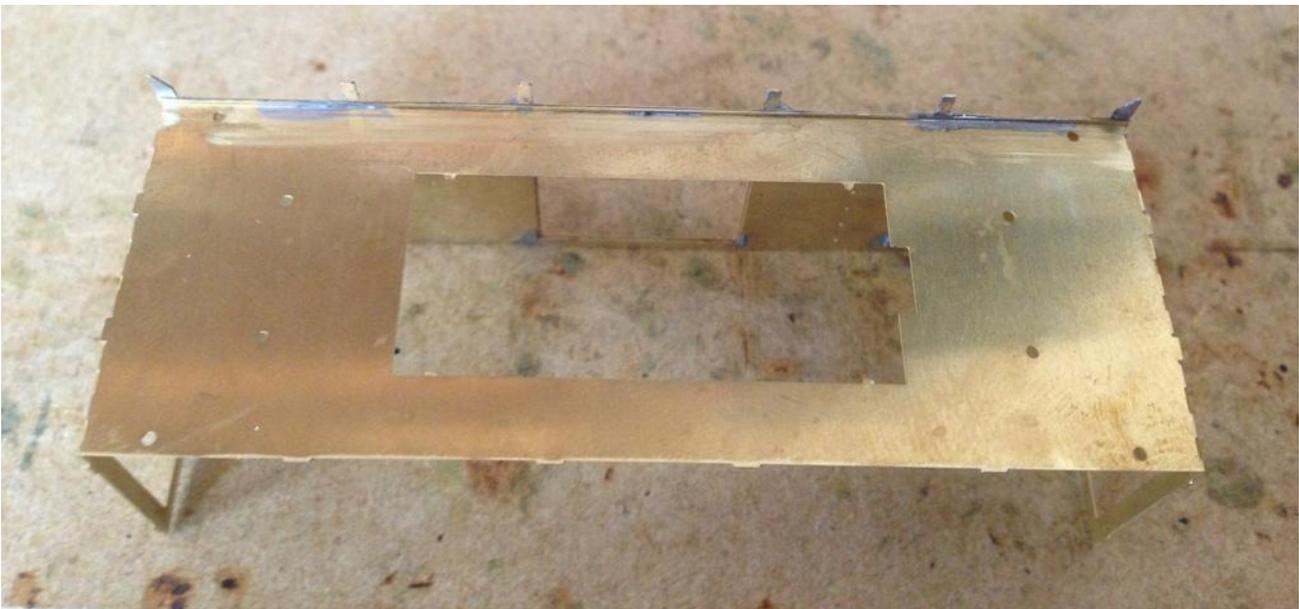
Next the two sides and ends can be fitted to the body frame (13). Remove the body frame from the fret and fold up the ends as below. Make sure that all trace of the connecting tags are removed from the tabs that will locate the sides in place.



Locate one side in place using the tabs and slots provided and solder in place at the ends.



Turn the assembly up side down and solder the side to the frae along the long edge making sure that the side is firmly up against the frame.



Repeat for the other side.



Next the ends can be added. They will fit neatly between the sides which will align them horizontally and there are tabs on the frame to align them vertically. Solder in place and repeat for the other end.



Finally the doors need to be assembled and fitted. Make sure the holes in the door hinge detail on the door frame (14) can accept 0.31mm wire. Remove the door frame and the door detail layer (15) from the fret. Fold up the top and the bottom of the door frame and fold out the door hinge detail in the middle of it. Make sure everything is at 90° especially the door hinge detail as this will need to go through the door detail layer.



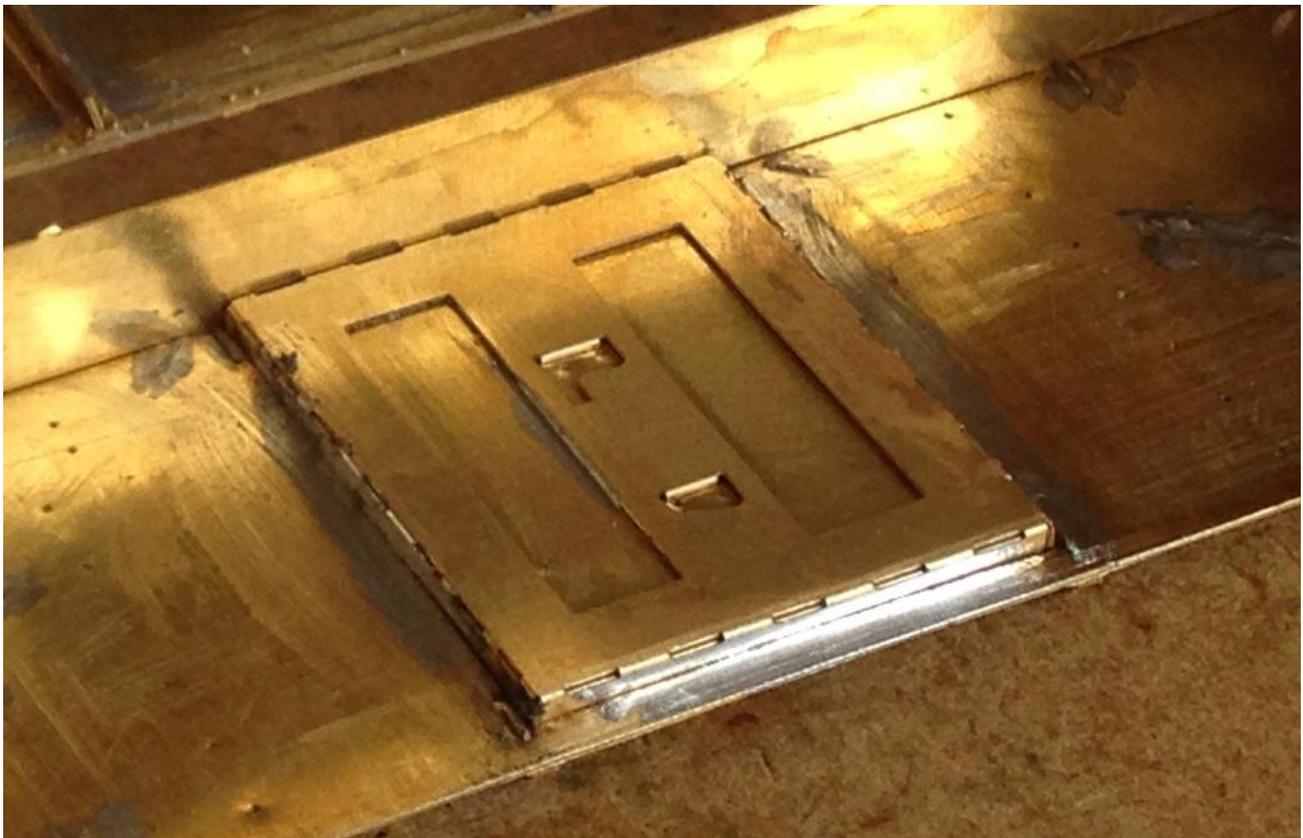
Place the door detail layer onto the door frame and solder in place from the back.



Fold up the sides of the door frame and then fold down the little hinge bar on the lower door hinge. Thread two lengths of 0.31mm wire through the holes in the door hinge detail and solder in place. Reinforce the fold line on the hinge bar at the same time. Trim the wire so that it is just proud of the door hinge detail.



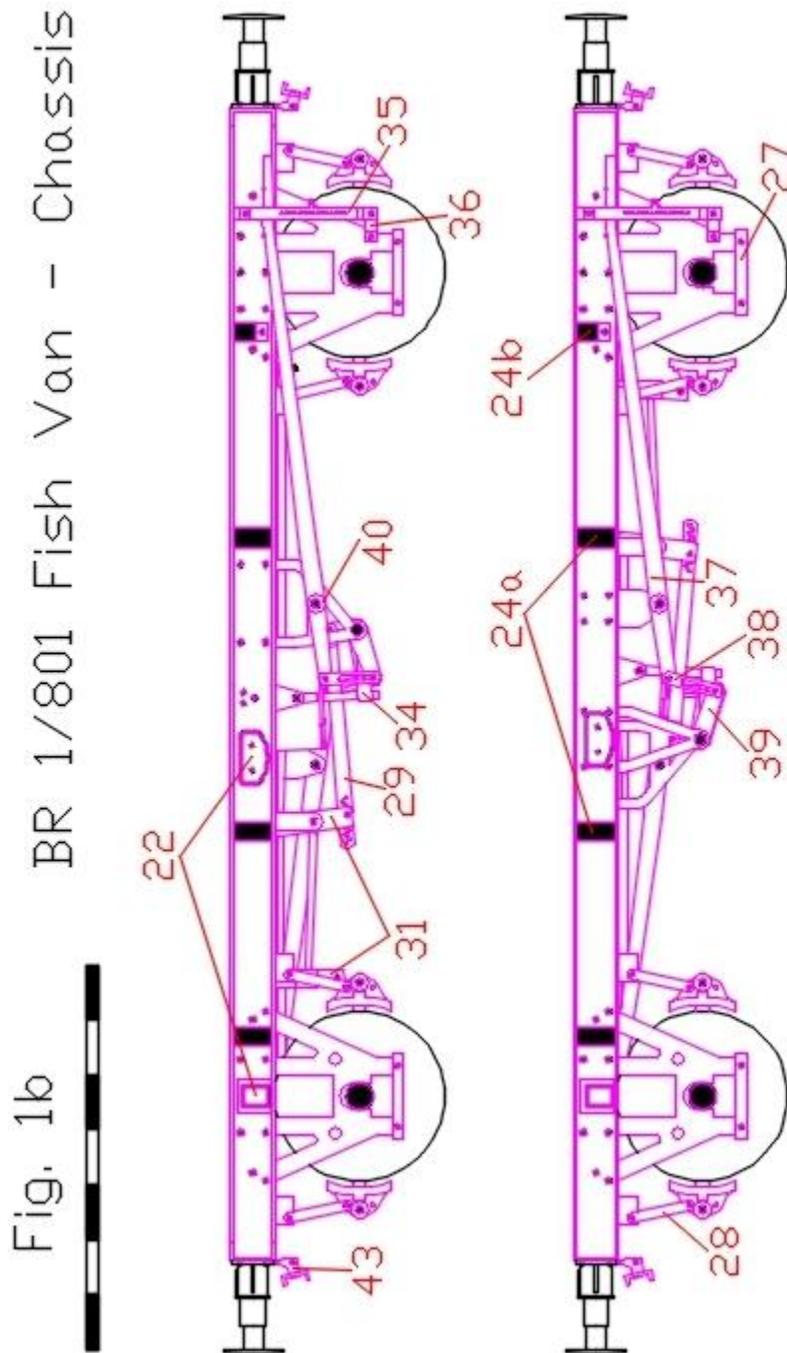
Finally locate from behind onto the opening in the sides and solder in place. Make sure the doors are the right way up (see Fig.1a or the headline photograph if you are in any doubt) and also firmly against the sides. Repeat for the other side.



That completes the etched part of the body. All that remains to be done is to make sure that the resin roof is clean and tidy and thoroughly clean and degreased. Check for any blemishes on the top of the roof and rub down with some fine grade wet and dry if necessary. Run a fine file along the ends and sides of the roof to make sure all the moulding flash is removed. Note that the side edge of the roof is at an angle.

I would recommend painting the body and roof separately before fitting them together and certainly after the body has been ballasted. The mould feed on the roof should give you an ideal place to hold it whilst painting. They can be glued together afterwards with either superglue or epoxy.

Chassis



Component List – Chassis

- 17 - Chassis top plate
- 18 - Axleguards
- 19 - Vees

- 20 - Solebars
- 21 - Solebar detailing overlays
- 22 - Solebar detailing
- 23 - Solebar/headstock corner plates

- 24a – Long body stanchion support brackets
- 24b – Short body stanchion support brackets

- 25 - Spring Carriers
- 26 - Bearing washers
- 27 - Axle keeps

- 28 - Clasp brakes

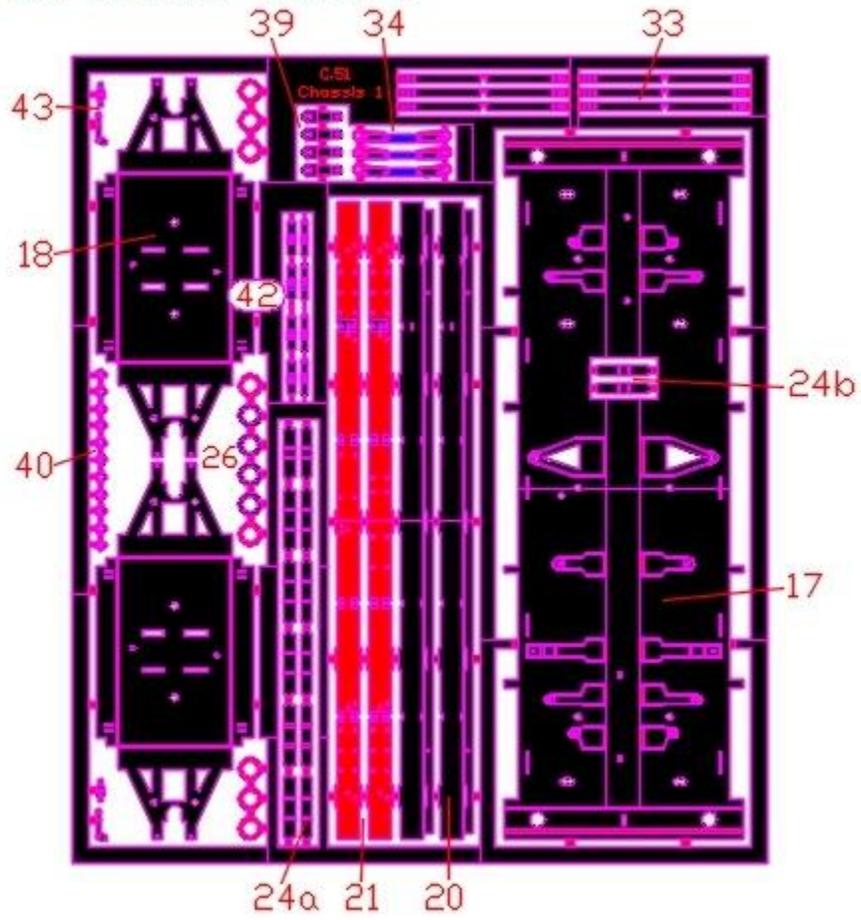
- 29 - Brakegear links
- 30 - Brake shaft crank overlays
- 31 - Brakegear overlays
- 32 - Brake yokes (EM/P4)
- 33 - Brake yokes (OO)
- 34 - Vacuum cylinder actuators

- 35 - Brake lever guards/brackets
- 36 - Brake lever guard stays
- 37 - Brake levers
- 38 - Lifting links
- 39 - Brake lever cranks
- 40 - Brake lever washers

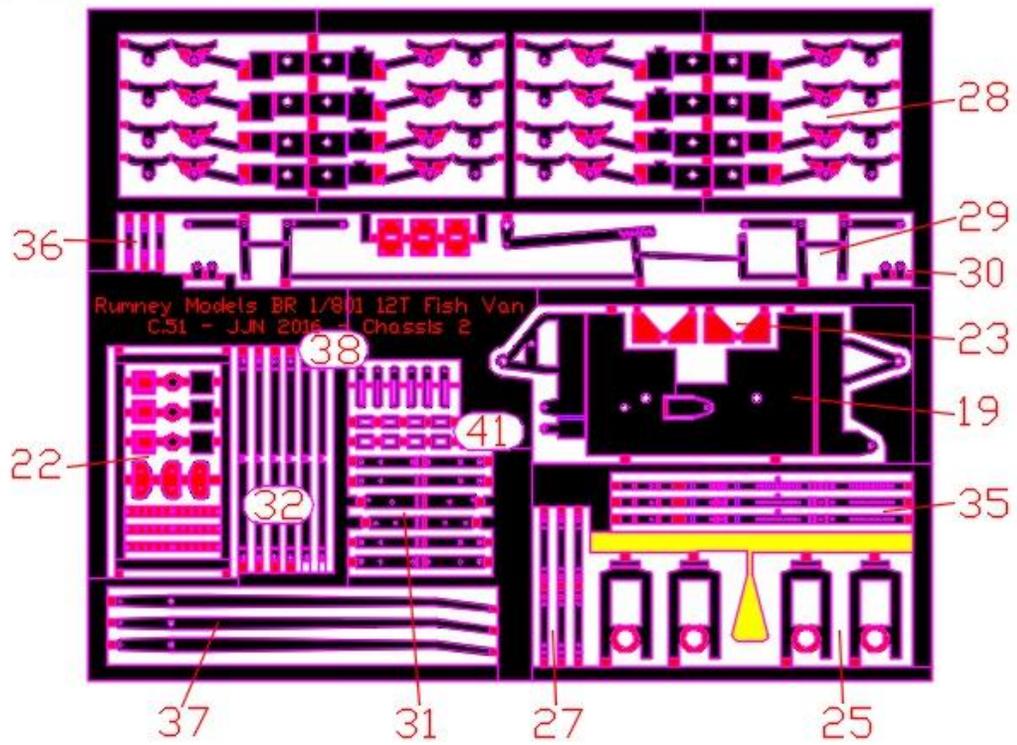
- 41 - Coupling pocket detail
- 42 - Lamp Irons
- 43 - BR swan neck vacuum pipe brackets

The area shaded yellow in the parts diagrams is the jig for forming the safety loops. This area should be removed from the fret when the time comes.

C.51 Chassis Sheet 1



C.51 Chassis Sheet 2



Chassis Construction

Main Chassis

Firstly check the fit of your buffers in their holes in the headstocks. It may sound a bit odd starting with something that usually goes on at the end but it will be much easier to open out the holes now rather than later.

Start with the chassis top plate (17). Whilst still in the fret check the diameter of the holes in the fold out clasp brakegear brackets. They should be 0.4mm. Also check that the holes in the inner vees will accept 0.8mm wire. Adjust if necessary.

Remove the chassis top plate from the fret.

The headstocks need to be folded up. This is best done with the chassis top plate clamped to something or held in a vice to avoid distortion. There are two sets of fold lines as the headstocks need to be folded into a channel. Starting with the outermost parts of the chassis top plate and fold through 90°. You can reinforce this fold line if you wish but I haven't found need to do this. Next fold the headstocks through 90° to form a channel. Do not reinforce with solder yet.

Fold out the clasp brakegear hanger brackets through 90°. These will be adjusted later but need to be at this angle for the moment. Fold out the inner vees.

Check that the holes in the axleguards (18) will accept 0.31mm wire and remove from the fret. Carefully fold up the sides and the four spring supports. Make sure that the sides are at 90° and adjust if necessary.

The chassis top plate and the axleguards need to be soldered together. There are 1mm diameter holes on both the top plate and axleguard to aid location. Using short lengths of 1mm wire with the ends tapered slightly pin the two parts together. You may need to open out the holes slightly but make sure the wire is a tight fit. Solder the two parts together and then remove the locating pins.

Check that the main brake shaft holes in the in the vees (19) will accept 0.8mm wire and that the brake lever holes will accept 0.6mm wire. Make sure the holes in the vacuum cylinder brackets can accept 0.5mm wire. Remove from the fret and fold up. There are two parts that make up vacuum cylinder bracket on the solebar side. The outer part needs folding over through 180° with the fold line on the outside and solder together. Solder the Vees in place on the chassis top plate using the same method as for the Axleguards. Make sure the vees align.

Next remove the solebars (20) from the fret and fold into an L shape. I find the best way to do this is in a vice with a couple of lengths of aluminium to extend the jaws. A hold and fold tool would be good here.

Remove the solebar detailing overlays (21) from the fret.

As a result of the etching process there should be a curve through them with the ends closer to you if looking at the rivet detail side. Carefully bend them so that the curve is reversed slightly and that the ends are further away when looking at the rivet detail. This can easily be done between thumb and forefinger but take care not to put any kinks into it.

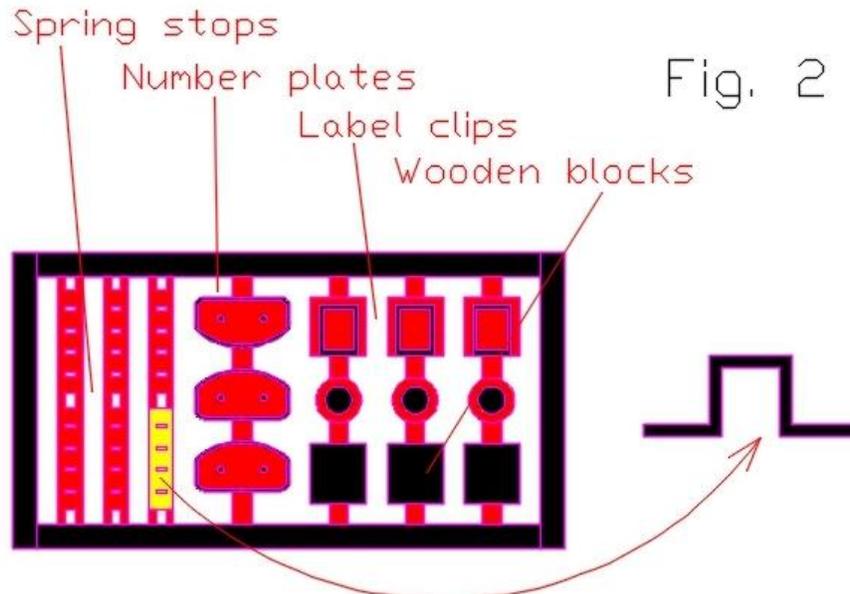
There are several half etched circles on the back of the solebar detailing overlays that need to be pressed out to form rivets representing where the brackets for the body side stanchions were riveted to the solebars. Now is the time.

The solebar overlays are designed to fit into the slots in the solebars. The completed solebar then locates into the slots in the chassis top plate. Locate the solebar detailing overlay in the solebar and tack solder in place. Note that there is a right way up for all the overlays but given the shape of them this should be obvious.

Now is probably the easiest time to attach the solebar detailing to the solebars so I shall cover this now before returning to the business of assembling the chassis.

Solebar detailing

The solebar detailing (22) comes contained in its own little fret. See Fig.2 below. On it you will find number plates, label clips and a rectangle that is actually a block of wood on the real thing. I have no idea what the purpose of the rectangular block is but it was made of wood was quite common. The round parts can be ignored. See Fig.1a, Fig.1b or a picture of your prototype for the position of these details. Solder in place.



Main Chassis Continued...

The solebars can now be fitted to the chassis. Note the correct sides for the two solebars as the rivet detail should line up with the vees (again see Fig.1a or Fig.1b). There are slots and tabs to aid location and the ends go into the channel that is the headstock. Fit the solebars at an angle and then straighten locating the slots and tabs at the same time. Once in place then the solebar can be soldered in place. The accessible fold line on the headstock can now be reinforced with solder if you wish.



Now is a good time to fit the solebar/headstock corner plates (23). These locate in the four corners on the underside of the chassis. The straight edges run alongside the inside of the solebars and the outside of the headstocks. Solder in place.

Side support brackets

Now is a good time to add the body stanchion support brackets (24a – long and 24b – short). The short ones go nearest the brake lever on each side. The connecting tags should be removed and then they need folding into a C shape. They can be located in place using the slots through the solebars and solebar detailing and then soldered to the tongues on the top of the solebar.



Spring Stops

The as 1/801 fish vans had fabricated stops. There are 6 fabricated spring stops on the solebar detailing (22) fret (see Fig.2 above) which can be folded up and then soldered in place. I find a small pair of self closing tweezers is a good help for this.

Brake Shoes

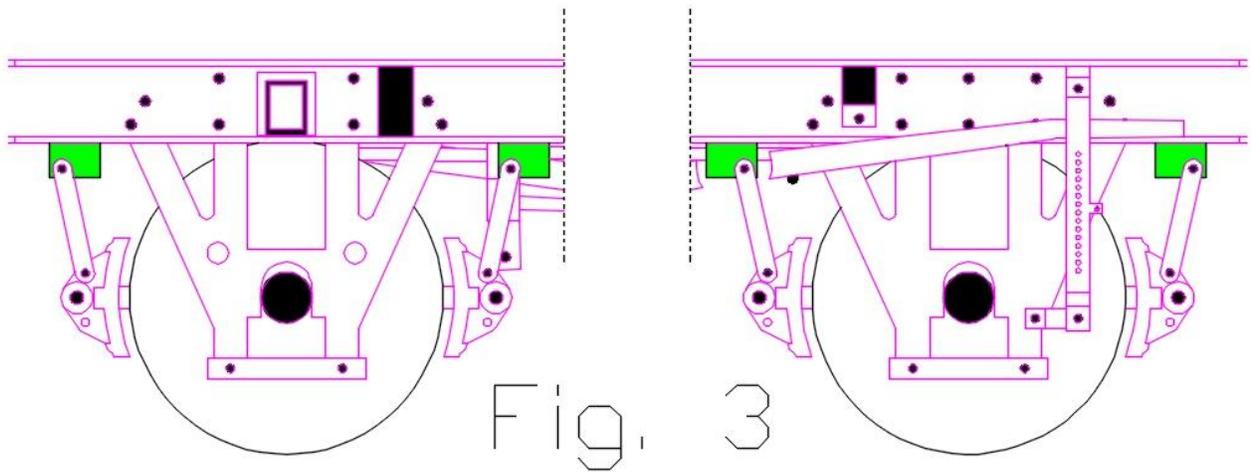
The clasp brakes (28) are designed to be folded up as one piece, soldered together and then tidied up afterwards. If you wish press out the half etched rivets at the top of the hanger bracket. Remove from the fret and fold up. All the fold lines are through 90° except for the one between the two plates with the holes in which is through 180° with the fold line on the outside. There are four parts to the brake shoes: Two outer detail parts and two inner shoes. The inner shoe parts needs to be folded through 180° with the fold line on the outside. The four parts of the brake shoes need to be aligned and soldered in place. I do this by putting a 0.5mm drill bit through the holes for the yolk and clamp the four etched layers together using a pair of self closing tweezers. If you hold the drill in one hand you can rest the base of the tweezers on the workbench leaving one hand free for the soldering iron. It's easier than it sounds, see attached photo. Solder together. You can now clean up the clasp brake assembly and the shoes in particular.

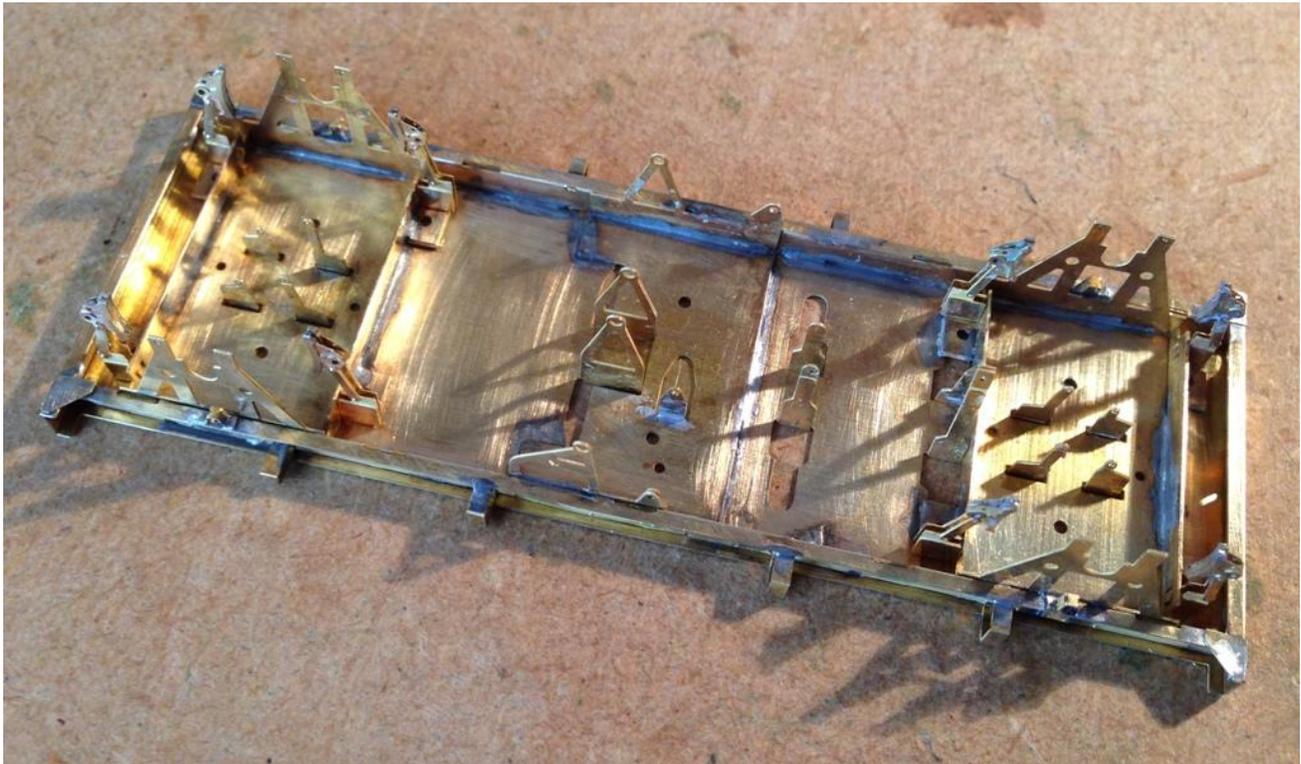




There are tabs on the clasp brakes that locate into slots in the axleguards (18). There are two different sets of slots depending on which gauge you are building to. The outer ones are for EM/P4 and the inner ones for OO. The clasp brakes can now be soldered in place on the chassis.

Note that the cosmetic hanger brackets for the brakes are not identical. For the correct orientation see Fig.3 below, the appropriate parts are in green. Make sure that the clasp brakes are hard up against the axleguard assembly. The holes can also be used to help pin the clasp brakes to the chassis top plate when soldering.





Spring Carriers

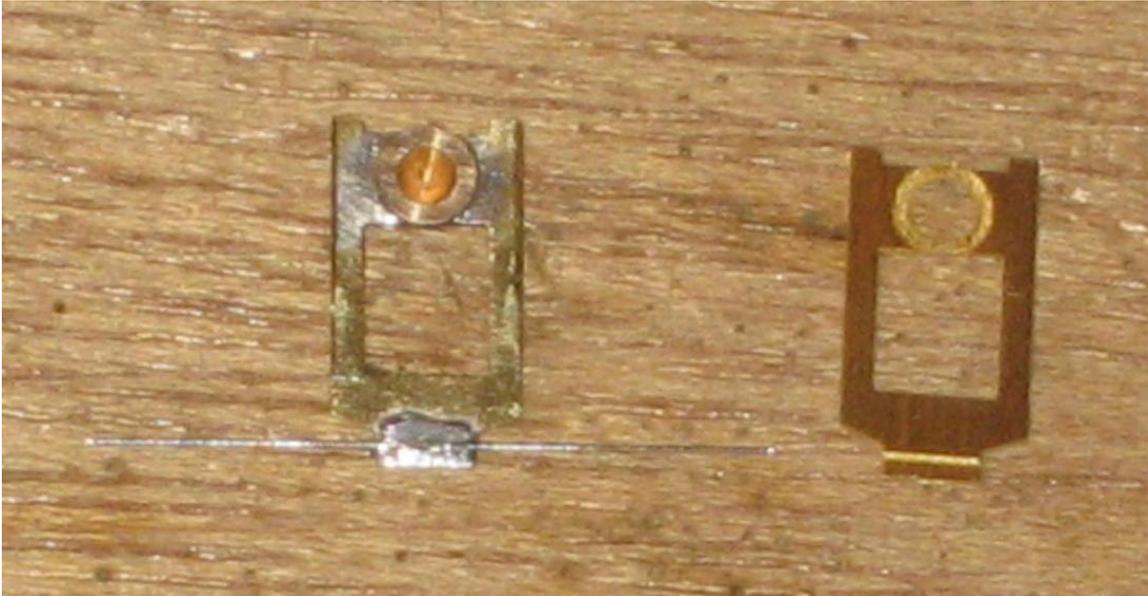
The spring carriers (25) can now be assembled. They are designed so that the springing wire is soldered to the carrier using the half etched slot as a guide.

The distance between the backs of the axleguards is a little bit larger when compared with other systems and is 24.5mm. The advantage of this measurement is that if using pin point axles you don't have to hunt around for bearings that are deep enough but you may find that the carriers need packing out a little to take up any slop. Bearing washers (24) are included for this purpose. There should be a good fit between the axles and the bearings with ideally no sideways movement at all. If using pinpoint axles use a waisted type of bearing to avoid having to remove any more material from the cast axleboxes than is necessary. I have used Exactoscale waisted pin point bearings which are just about perfect for the job with only occasional ones that require packing out.

Due to the removable nature of the axleguards you can easily use Exactoscale parallel axles and bearings if you wish. If doing so then you will need to pack the bearings out on the back of the spring carriers before soldering them in place due to the length of the axle. Use the bearing washers provided.

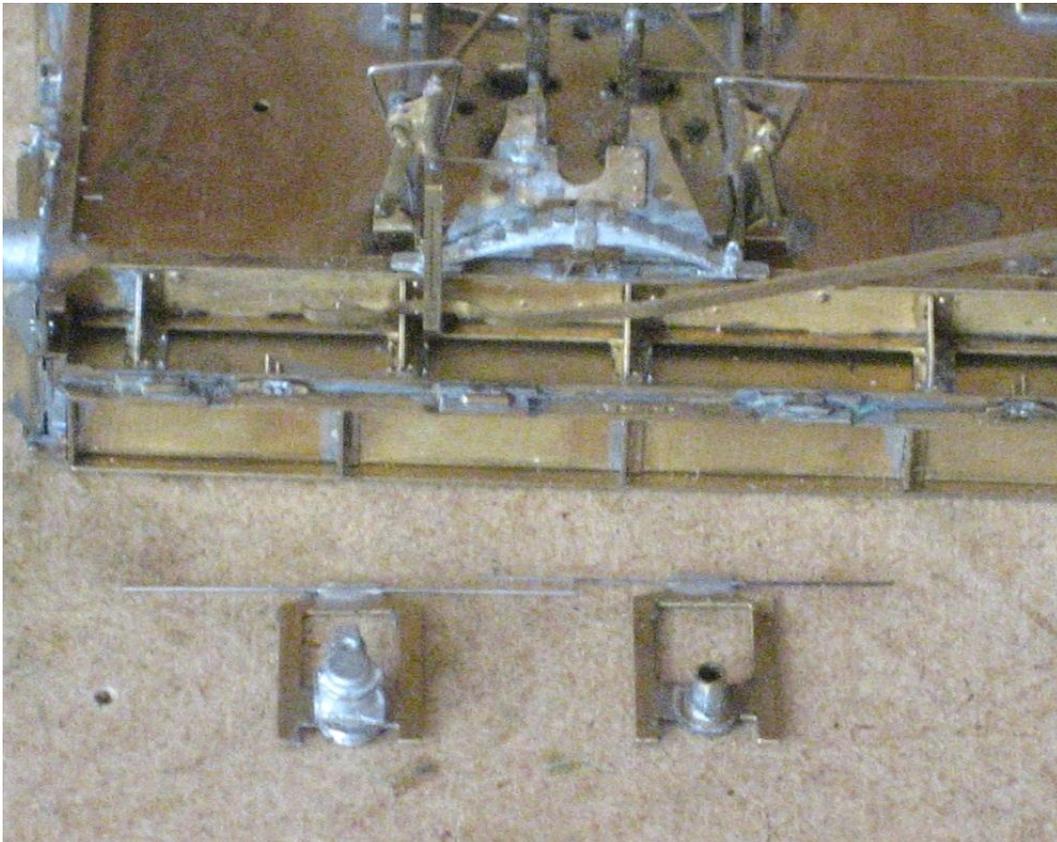
I find the easiest way to assemble the spring carriers is to make a small jig consisting of an off cut of wood with a 2mm hole drilled into it. The spring carrier can then be placed so the half etched guide slot for the spring is facing towards you and the bearing locates through the hole in the carrier and the wood. The bearing can then be soldered in place. The spring wire can then be located in its half etched guide slot and soldered in place using a suitable flux. I use Carr's black label. The spring wire needs to extend at least 7mm either side of the point where it is attached to the carrier.

Tweak the brake shoes if necessary with the wheels in place.



Roller bearings:

These were fitted to all BR 1/801 fish vans. My preferred method is to attach the casting for the roller bearing to the axle bearing and have it move with the functional springing. This requires some material removing from the top of the axlebox casting so that the cosmetic spring doesn't impede the movement of the axle. Having removable keeps makes this feasible. The spring casting is attached to the wagon and the bearing casting moves up and down with the springing. Wizard Models make a suitable hooded type roller bearing axlebox casting (BRC023) as well a non-hooded type (BRC022).

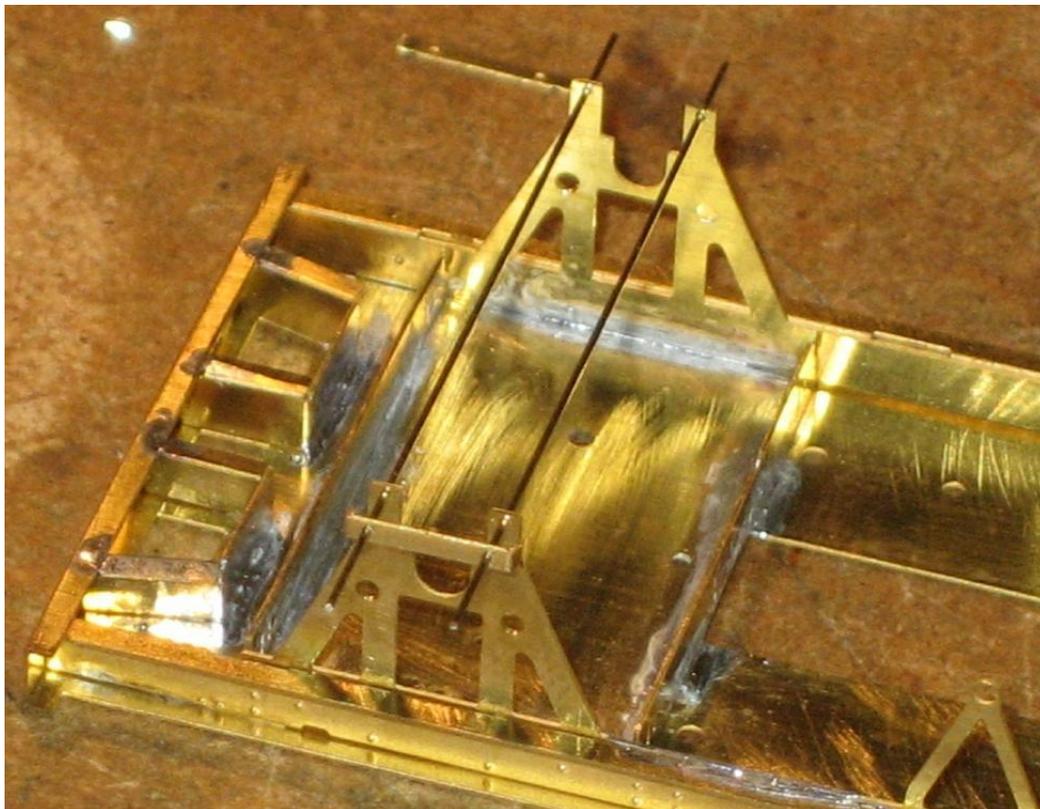


If you are using parallel bearings then they will need extending to give the roller bearing casting something to attach to. I solder a piece of 1.5mm x 1mm brass tube to the end of the parallel bearing and then glue the casting to that.

Axle keeps

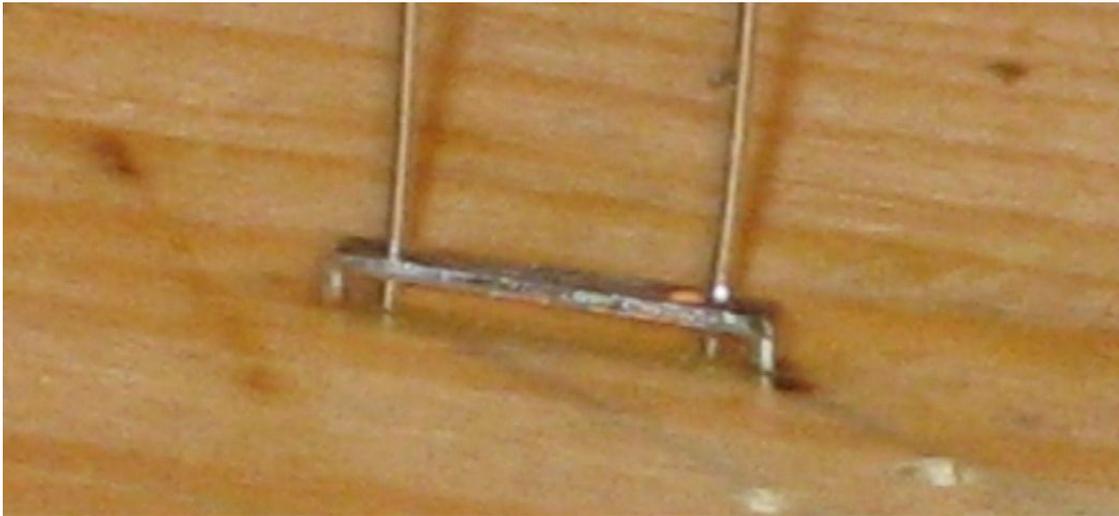
The axle keeps (27) are designed to be removable if you wish in order to allow the wheel sets to be easily dropped out. They can be soldered permanently in place but either way you will need to make sure the holes will accept 0.31mm wire before removing them from the fret.

If you are not planning on making them removable then they can be pinned and soldered to the axleguards. Remove from the fret and fold the ends up. Thread lengths of 0.31mm wire through the axle guard and holes in the axleguard and the corresponding holes on the opposite axleguard. Solder in place. Fit the other axle guard and solder in place. Trim the wire so that it represents bolt heads on the front of the axle guards but extends approximately 0.5mm from the back of the axleguard. These pins will prevent the springs from becoming disengaged from their slots.



If you want to make them removable to allow the axles to be dropped out then you will need to solder 0.31mm wire 'pins' through the holes in the axle guards. I find the easiest way of doing this is to use one pair of holes as a jig and drill a pair of 0.3mm holes into a piece of scrap wood. Short lengths of 0.31mm wire can then be threaded through the axle guards locating into the holes in the wood. These can then be soldered in place and filled back to represent bolt heads before folding up the ends. I found it easiest to fold the ends in this order and then quickly reinforce the fold lines with solder before removing the axle guard completely. You will need to make sure there is at least 0.75mm of wire projecting from the back of the axleguards otherwise the spring carriers will be able to fall out of place when everything is assembled.

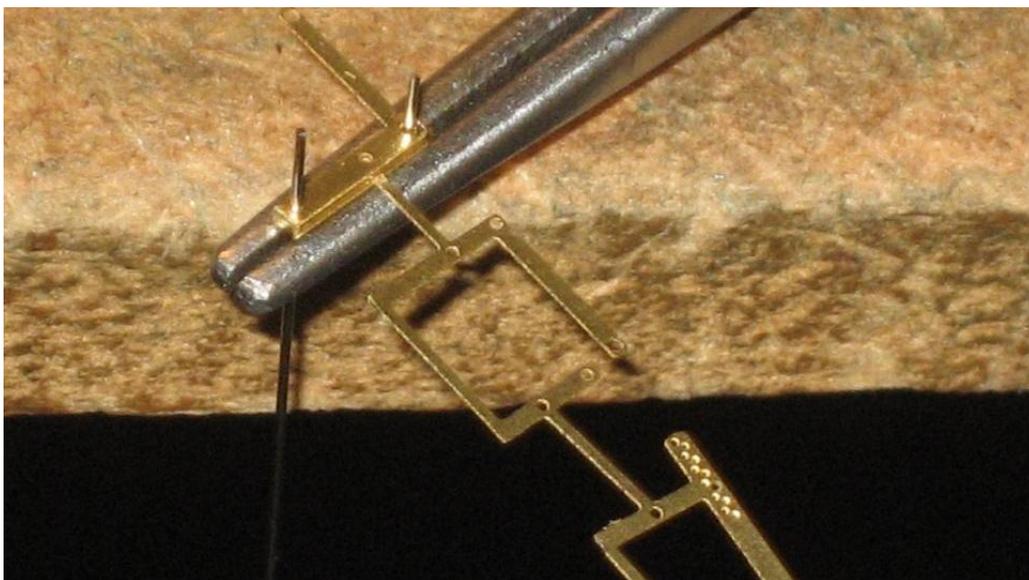
It is also a good idea to leave at least one of the pins in the axleguard as long as possible to give you somewhere to hold them when painting. Once the axleguards and the chassis are painted they can be tack glued together on final assembly. The glued joint can be broken and the tie bars removed if you find it necessary to remove the wheels at any point.

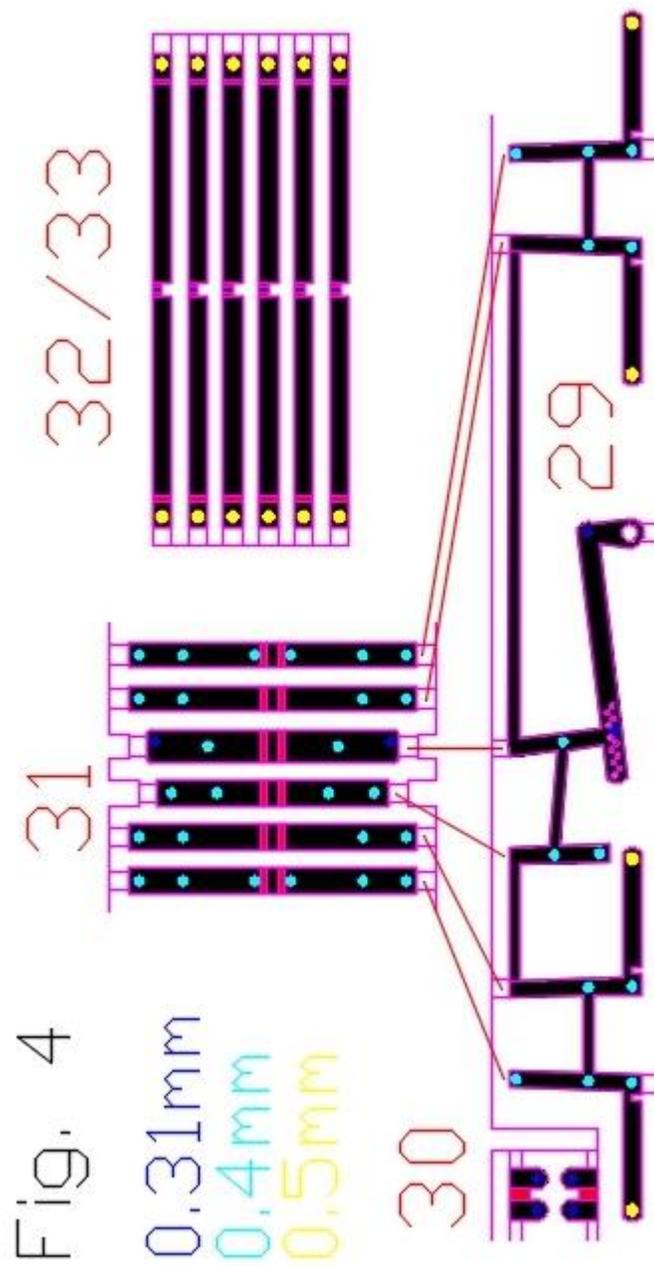


Brakegear

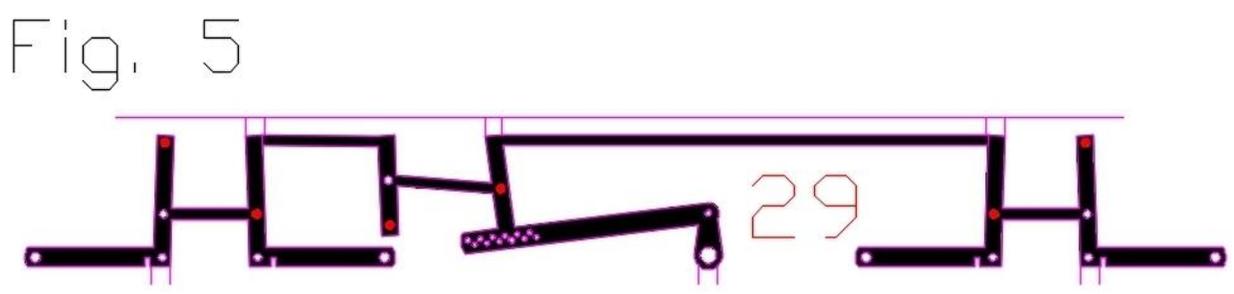
Next attention can turn to the brakegear. Check and open out where necessary the holes in the brakegear links (29), brake shaft crank overlays (30), brakegear overlays (31) and brake yolks (32 or 33 depending on gauge). Refer to the Fig. 4 on the next page for the hole sizes.

Remove the brakegear links (29) from the fret. Fold up one of the brake shaft crank overlays (30) so that it will wrap around the brake shaft crank on the brake linkage. The other is a spare. Use 0.31mm wire to align and solder in place. The brakegear overlays (31) need to be done next. Do them one at a time only removing them from the fret when necessary. Refer to the Fig. 4 again for where each one goes. Fold them up so they will wrap around the top of the brakegear links. Use the appropriate size of wire to pin them together making sure there is at least 5mm of wire protruding either side of the assembly then solder in place.



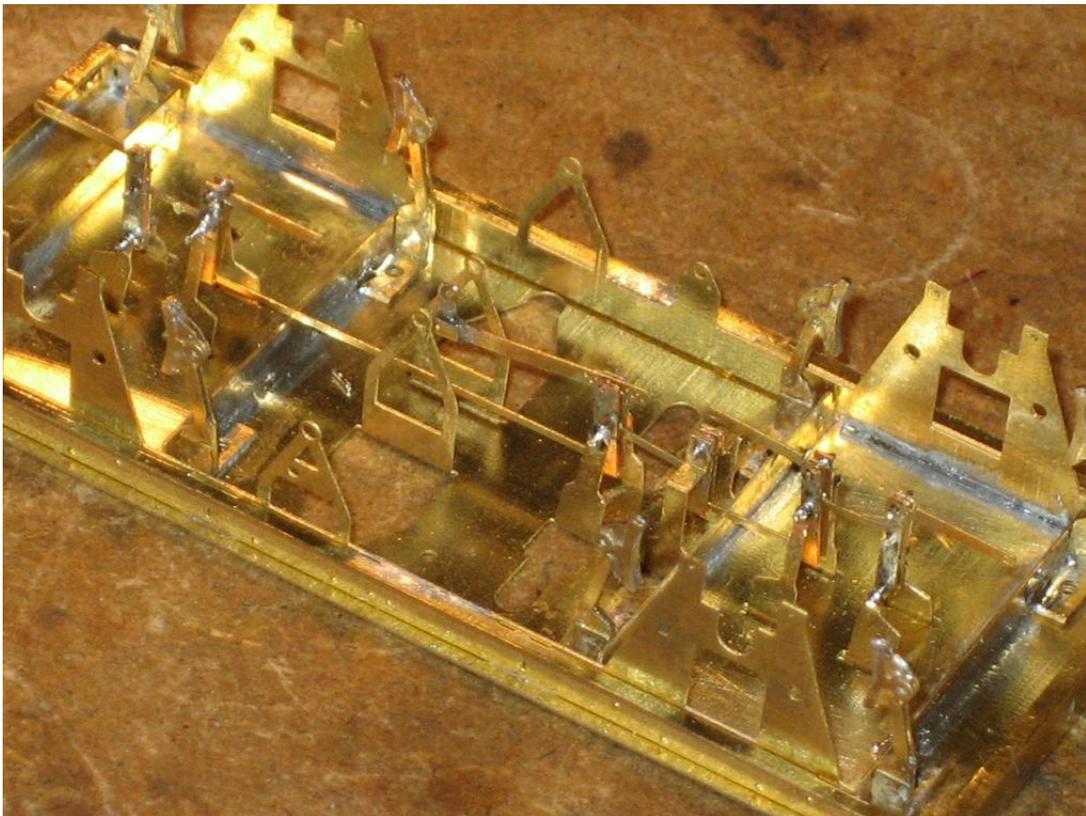


Once all the overlays are all in place you can trim all the connecting wires to represent bolt heads except for those noted in Fig. 5 below. These will be used to pin the assembly in place on the chassis.





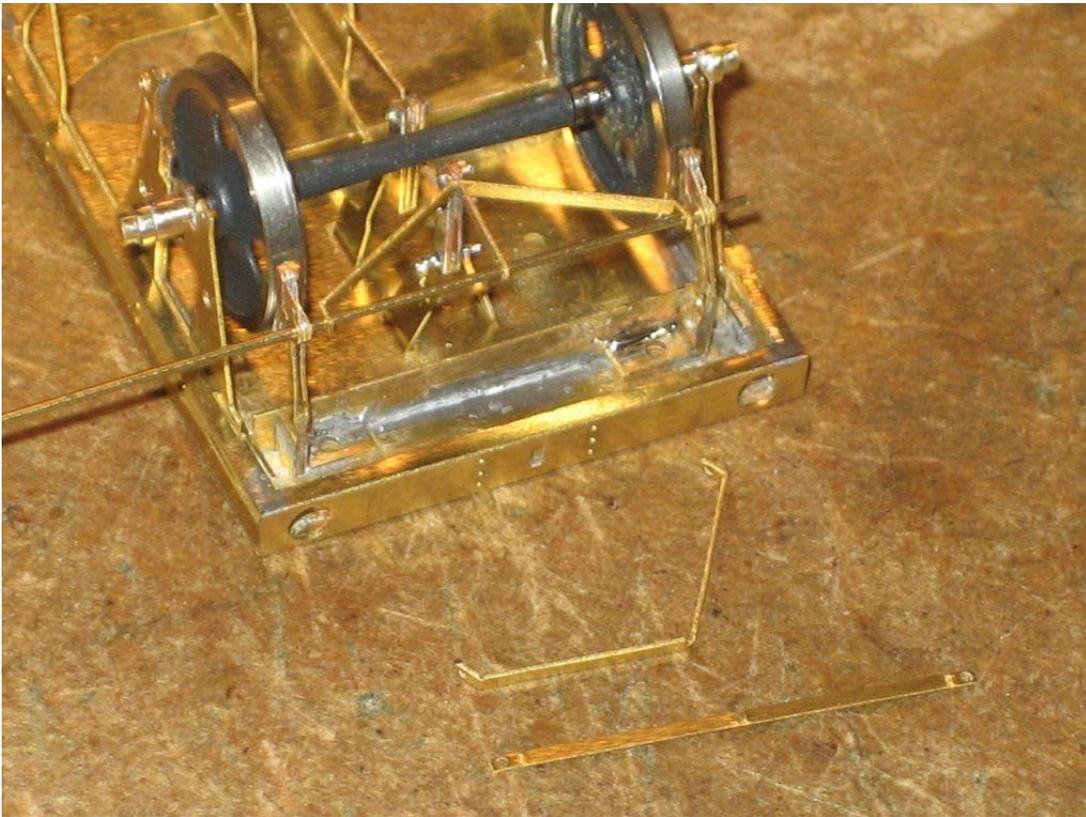
The brackets for the brake links on the chassis top plate need to be angled inwards with the ends at right angles to the chassis and parallel to brakegear links assembly. The exception to this is the bracket second out from the main brake shaft which is cranked. There is a pair of fold lines to allow this. See photos below. Starting at one end and working towards the other locate the brakegear links assembly with the brackets, once everything is in place solder together. This is a bit of a fiddle but just take your time. Things can easily be tweaked once in place if something gets bent.







Yokes



The brake yokes, either (32) for EM/P4 or (33) for OO can be attached next. They follow the prototype in appearance. Ensure that the holes in them can accept 0.5mm wire and remove from the fret. The outer fold lines should be folded to approximately 30° and the inner fold lines to approximately 60°. Once they are folded they can be located to the chassis using 0.5mm wire. Note that there is a slot in the yoke which will locate in a similar slot in the brakegear links (29) so make sure they go on the correct way around. Pass a piece of 0.5mm wire through both the brake shoes and the yolk and then locate the yolk to the brakegear links. Solder everything in place and trim the wire.

Brake levers, etc

Firstly make sure that the holes in the following items can accept the correct size of wire:

Vacuum cylinder actuators (34) 0.8mm

Brake lever guard and bracket (35) 0.31mm

Brake lever guard stays (36) 0.31mm

Brake levers (37) 0.6mm and 0.31mm

Lifting links (38) 0.31mm

Brake lever cranks (39) 0.8mm and 0.31mm

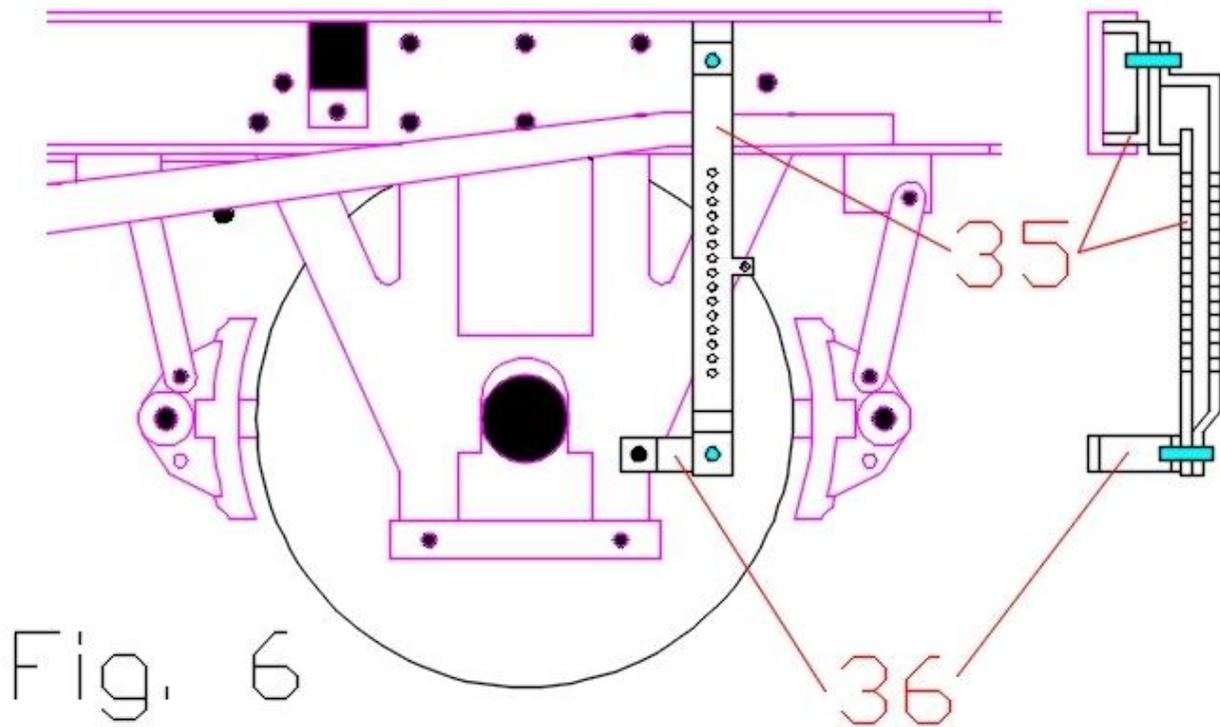
Brake lever washers (40) 0.6mm

Note that there are two types of brake lever cranks (39). These go behind the brake shaft vee and then are bent to align with the brake lever and lifting links. There is a solid pair to be bent up prototypically or a pair with half etched fold lines to make things easier.

Brake lever guards

The brake lever guard and bracket (34) can be removed from the fret and folded up. Separate the lever guard from the lever guard bracket. Fold the lever guard along with the lever guard bracket referring to Fig. 6 below. Note that the hole on the lever guard bracket should be towards the top. Solder the lever guard and bracket together using 0.31mm wire to align them. Trim the wire on both the front and back to represent a bolt. The whole assembly can then be located in the solebar and soldered in place. There are slots in the solebar to receive the lever guard brackets. Press out the half etched rivet on the brake lever guard stays and fold both ends through about 30°. The stay can then be pinned to the bottom of the lever guard using 0.31mm wire and then soldered to both the lever guard and the axleguard and any excess wire trimmed off.





Axleboxes and springs

Now is as good a time as any to fit the cast springs. It will make life easier when bending up the brake levers as they should be bent, like the prototype, to clear the springs and also the axleboxes.

Brake levers

The general arrangement of the brake lever, lifting links and cranks can be found on Fig.1a, Fig.1b and also on the photographs included below.

A piece of 0.31mm wire needs to be soldered in place so that it projects at least 1mm on both sides at the end of the brake levers (37). A short length of 0.6mm wire can also be soldered in place through the brake lever with a brake lever washer (40) on either side. The easiest way of doing these pins is to follow a similar method to the pins in the axle guards by drilling holes in a piece of scrap soft wood to accept the appropriate size of wire and then soldering in place. The same thing needs to be done with the brake lever cranks (39).



The brake levers need to be bent up as per the prototype clearing the axleboxes and springs. They then need to be cranked for the handle. Check on the model and adjust until you are happy with the shape. Once you are happy with the shape the brake levers can be soldered in place.



The brake lever crank can now be bent or folded to shape depending on type. These can be fitted along with the brake shaft (0.8mm wire) and vacuum cylinder actuators (34). The actuators need to have their half etched rivets pressed out and then folded over double. They are designed for the ends to wrap around a 0.6mm piece of wire extending from the vacuum cylinder. These can be fitted along with the brake shaft (0.8mm wire) through the vees. Leave soldering of the actuator until the vacuum cylinder is in place.

Solder the brake shaft in place and trim the ends if necessary.

The vacuum cylinder can be added now or later and then the two halves of the vacuum cylinder actuator soldered together and to the brake shaft.



Note that the brake lever crank goes behind the vee on both sides. Adjust if necessary so that it aligns with the brake lever. Fit the lifting links (38) in place joining up the brake lever and the brake lever crank and solder in place. Note that there should be lifting links on both sides, one on either side of the lever/crank. A washer (40) can be added to the outer ends of the brake shaft and soldered in place. The vacuum cylinder can be added now and the two halves of the vacuum cylinder actuator soldered in together and to the brake shaft.

Headstock detailing

Now is as good a time as any to fit the coupling pocket detail (41). They all had welded type pockets. Solder them in place using the hole for the coupling as a guide. I find the easiest way of doing this is to shape the end of a cocktail stick to fit in the slot. This can be used to align the detail on the headstock and hold it in place while you solder them together.



Lamp Irons

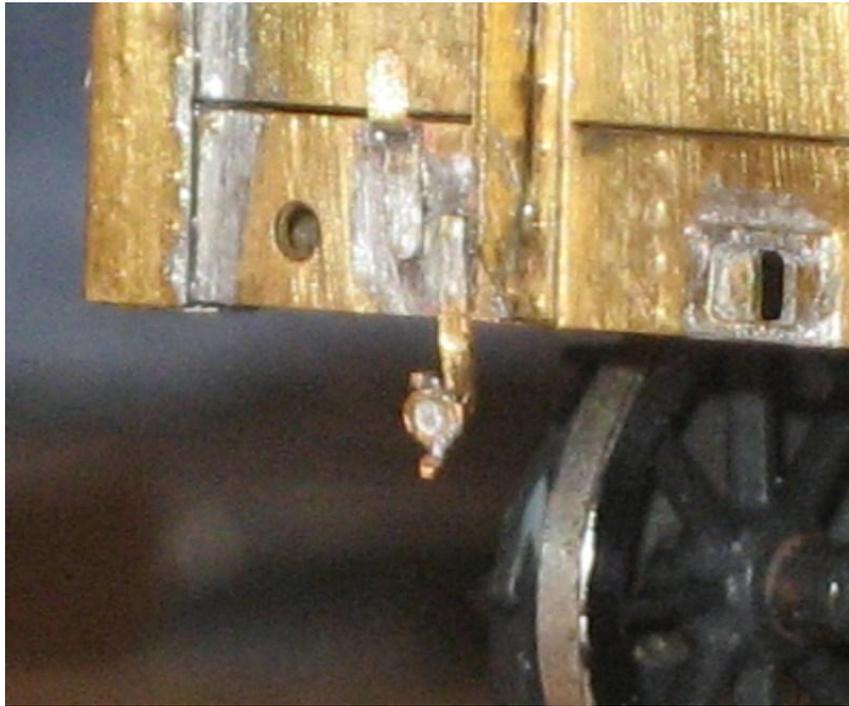
Lamp irons (42) are included for fitting to the wagon ends. There are two pairs included, one with half etched holes for pressing out the bolt heads and one with the bolt holes etched out completely to use with 0.31mm wire pins to represent the bolts. The later items are on the bodywork etches.

If you wish to use the half etched bolt type then press out the rivets whilst still in the fret and then remove and fold up and fix in place

If using the pinned type then check that the holes will accept 0.31mm wire and remove from the fret and fold up. Two short lengths of 0.31mm wire can be soldered in the holes and then the lamp iron glued in place on the body having drilled receiving holes for them. Alternatively simply glue the wire and lamp iron in place at the same time without the solder.

BR swan neck vacuum pipe brackets

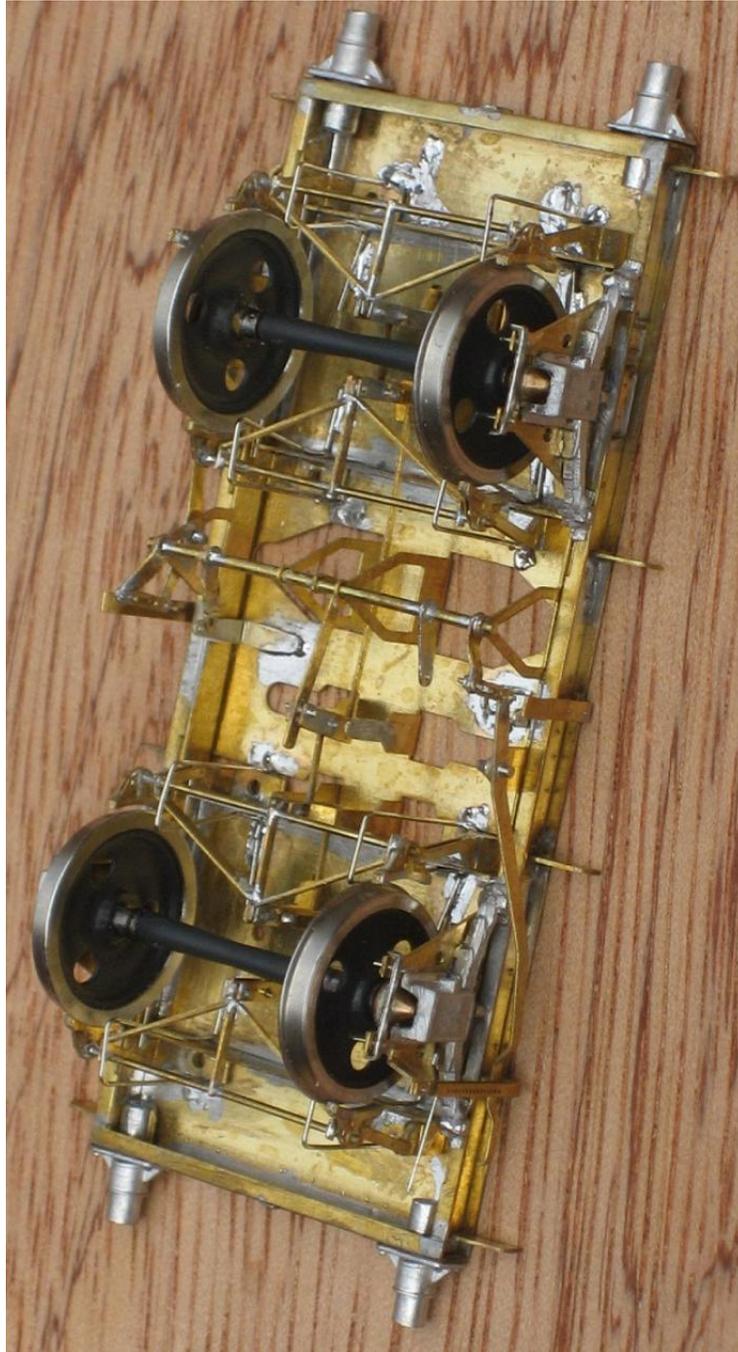
There are two BR swan neck vacuum pipe brackets (43) included. These are quite distinctive and come in two parts. There is a bracket which attaches to the solebar and a round head that has 'tails' that fold up. Press out the rivets on the bracket and remove from the fret. Twist the base of the bracket through 90° so that the interface with the head faces away from the rivets. This bracket can then be soldered to the back of the head (the side with no half etched areas). It is easiest to do this while the head is still attached to the fret. There is a small slot to help provide a positive location. Once soldered in place the assembly can be removed from the fret and the 'tails' on the head folded out. If you're brave these fold lines can be reinforced by the use of a very small quantity of solder and a very quick soldering iron. Some step soldering might be a good idea but I haven't encountered many issues with just using 145° solder. These can then be soldered in place on the headstock.



Safety loops

Formers are included on the fret for making safety loops from 0.31mm wire. This are marked in yellow on the parts diagram. Once they are formed they can be soldered to the chassis.





Finally vacuum cylinder safety loops (16) are included for use with Rumney Models 18" vacuum cylinder (coming very soon). For fitting instructions see the picture of the real life vacuum cylinder above.

Painting

One of the advantages of having the chassis as a complete unit with solebars and headstocks is that you can paint it separately from the body and then glue the two together afterwards. If using an airbrush or aerosol this means you can prime it and then paint it all black with no masking at all which makes life a little easier.

I now use Halfords grey primer in a tin through an airbrush with cellulose thinners to prime just about everything, including plastic bodies. The primer is synthetic and has no adverse effects on the types of plastics used on RTR railway models and kits. The cellulose thinners used evaporate so quickly that they don't have time to attack the plastic. You can then put your choice of paint over the top including cellulose. Don't use the red oxide in a tin on plastic though as it won't adhere and the paint will just come off.

Notes on wagon bodies and weighting

The suspension on the underframe is designed to work optimally under a 50g load.

Ballast the body to bring the wagon up to the appropriate weight. Making sure that it's secure. You don't want to fit the roof and find that the ballast comes free and starts rattling around!

Finally

Thanks must go to the staff of The Swanage Railway for letting me measure up and photograph at close quarters the 1/801 fish van in their care.

Last but certainly not least if you haven't come across the wonderful resource for BR wagon photos that is Paul Bartlett's website then I would thoroughly recommend a visit to:
<http://paulbartlett.zenfolio.com/>

Justin Newitt 2016

Suppliers List

Eileen's Emporium (wire and sundries)
Unit 19.12 Highnam Business Centre
Newent Road
Gloucester
GL2 8DN
UK
www.eileensemposium.com

Lanarkshire Models and Supplies
(buffers and vacuum pipes)
9 Nairn Avenue
Blantyre
G72 9NF
www.lanarkshiremodels.com

C&L Finescale (Exactoscale wheels,
bearings and couplings)
Aran Lodge
Severn Road
Hallen
Bristol
BS10 7RZ
<http://www.finescale.org.uk>

Masokits (coupling hooks and screw
couplings)
Michael Clark
c/o 27 Crotch Crescent
New Marston
Oxford
OX3 0JL
www.scalefour.org/masokits

MJT (axleboxes and spring castings)
17 Hurst Close
Staplehurst
Tonbridge
Kent
TN12 0BX
www.dartcastings.co.uk

Wizard Models (axleboxes and spring
castings)
PO Box 70
Barton upon Humber
DN18 5XY
www.wizardmodels.co.uk