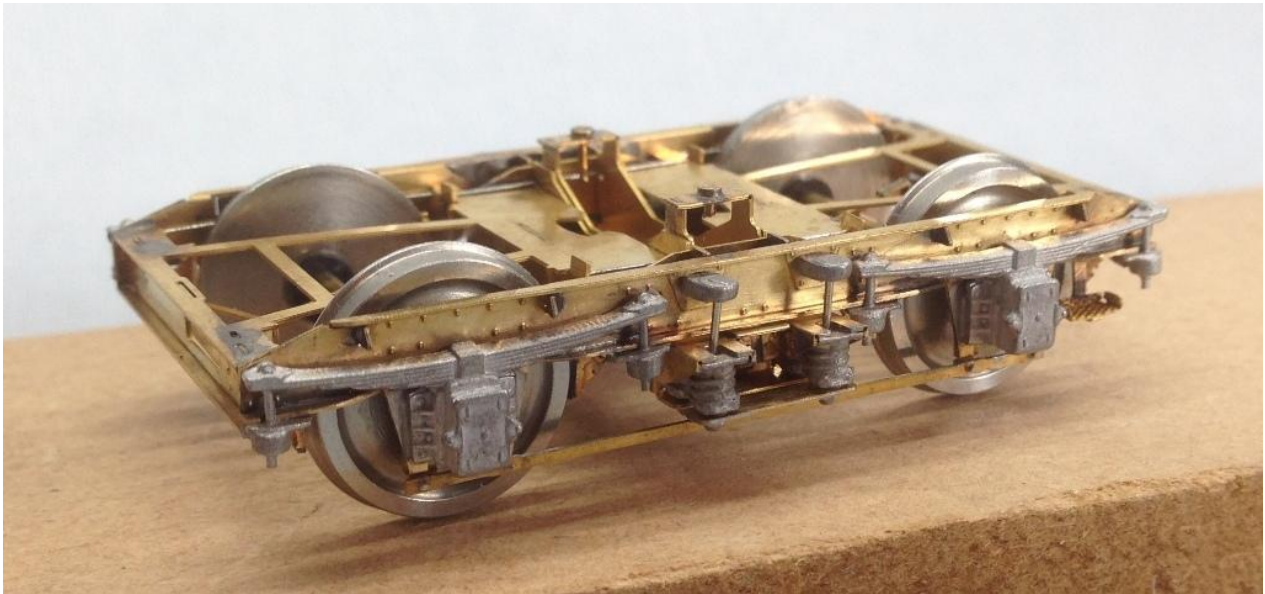


Rumney Models BR Coach Bogie Instructions

This set of instructions covers Rumney Models kit E.101. This is designed to build into a complete, fully sprung model of the BR Coach Bogie (to give it its official title). These were fitted on Mk1 stock up to the introduction of the Commonwealth type around 1960. The kit includes options to model the 8'6" single bolster version (as fitted to GUVs and suburban stock) along with the original 8'6" light double bolster and revised 8'6" light double bolster (technically the revised version was designated mk2 but I'm a little reluctant to use that terminology in this context for fear of confusion with Mk2 coaching stock, which this bogie had nothing to do with). Other options include riveted or welded construction and two different types of spring stops. This kit does not offer the option for the 8'6" heavy double bolster bogies as these had different springs, axleboxes and dampers nor does it cover the later bogies built with compensated brakes; though these were few in number anyway.



BR Coach Bogie designations

The following information comes via someone who used to build coaches for BR.

Contrary to popular belief there was no such thing as a B1/B2 or BR1/BR2 bogie fitted to the Mk1 coaching fleet in the 1950s. It's a popular myth (not just by enthusiasts but also wrongly by some within BR) not helped by BR having the cast letters BR1 and BR2 on the axleboxes to designate the difference in axlebox and journal size between the light and heavy bogies. The Swindon derived bogies were simply called BR Coach Bogies and came originally came in three types:

- 8'6" Single Bolster
- 8'6" Light Double Bolster
- 8'6" Heavy Double Bolster

At some point in the early fifties the bolster arrangement on the double bolster versions was revised (mk2). This involved a slightly different profile bolster spring bearers and the addition of riveted reinforcing angle between those bearers.

Towards the end of construction compensated brakes were introduced on the revised light and heavy double bolster bogies. These were not great in number as the brakegear was expensive and other bogie types were coming to fruition.

The bogies continued to be built until the introduction of the Commonwealth type around 1960.

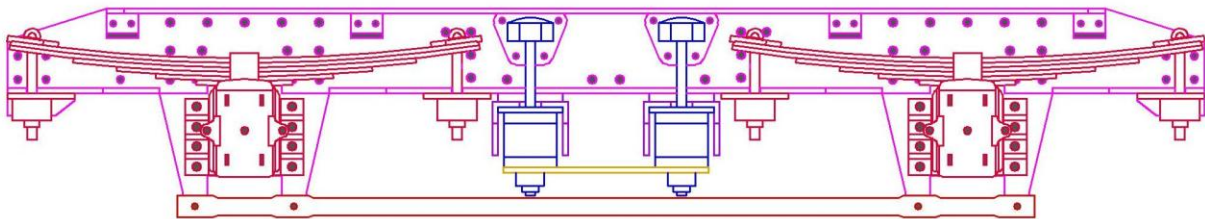
Kit Options

- Single Bolster
- Original Light Double Bolster
- Revised Light Double Bolster
- Riveted bogie with riveted spring stops
- Riveted bogie with welded spring stops
- Welded bogie with welded spring stops

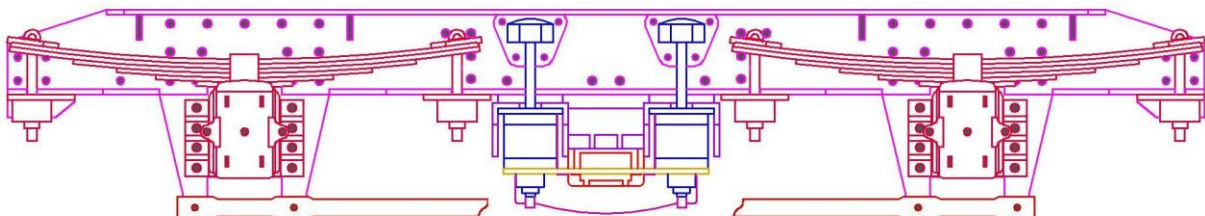
As mentioned earlier the bogies with compensated brakegear are not covered nor can you build the heavy double bolster bogies. The etch does include the reinforcing plate fitted along the top of the heavy double bolster bogie and I have done artwork for the 7 leaf springs/BR2 axleboxes and dampers so the heavy version is definitely an option for the future.

Note that things such as the method of construction (riveted/welded) and the type of spring stops did not depend on whether the bogie was single bolster, original double bolster or revised double bolster but instead on where and when the bogie was built.

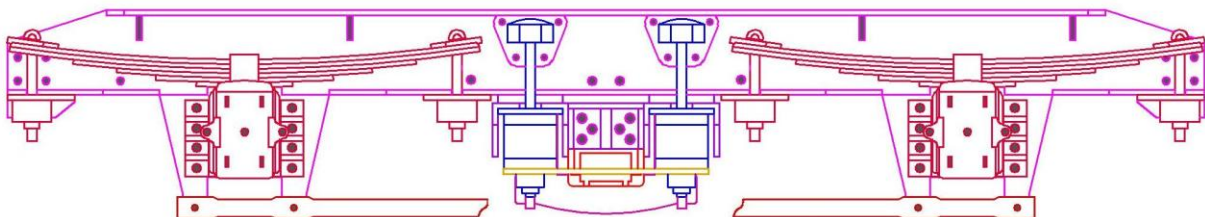
Single Bolster Bogie - Riveted Construction - Riveted Spring stops



Original Double Bolster Bogie - Riveted Construction - Welded Spring stops



Revised Double Bolster Bogie - Welded Construction - Welded Spring stops



Construction 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 every photo is of this particular kit but suitably illustrate the item in question.

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 an Antex 50W temperature controlled soldering iron with predominantly 145° solder and La-Co paste flux.

Check all holes before removing parts from the fret. The drawing process for etching if you use a CAD program as I do is extremely accurate but the actual etching process itself 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.

Technical

The coach bogies are designed to be built fully sprung with both primary (wheels to bogie) and secondary (bogie to bolster) suspensions arranged by steel guitar wire 'leaf' springs. The suspension is designed to provide 0.42mm deflection on both the primary and secondary springs using 0.009" guitar wire with 180g total load. The primary suspension is arranged in individual springs that are soldered to the spring carriers in which the wheel bearings sit. For this you will need a suitable flux. I use Carr's Black label. Secondary springs are arranged on the two point contact between two simple supports principle and are simply fitted into place.

If your coach weighs significantly more than 180g then you should consider using 0.010" steel wire for the primary springs but leave the secondary springs at 0.009". Suitable guitar wire should be available from your local music shop.

Ride height of the coach can be adjusted using pads mounted on the coach underframe. This is covered towards the end of the instructions.

Materials list

Spring wire and pins to act as a bearing point between bogies and body are included along with the castings but you will need to obtain some other items to complete.

Your favourite brand of 3'7" or 3'6" wheels and bearings are of course required along. I use Exactoscale products but Alan Gibson, Ultrascale or Branchlines will suit. The bogies have been designed to take 14.5mm diameter wheels despite the prototype having 3'6". This is because the only genuine 3'6" (14mm) wheel on the market is that marketed by Branchlines; all the others (despite what they may be labelled) are a scale 3'7½" or 14.5mm.

Pinpoint bearings will be needed. I use Alan Gibson as their waisted ones are nice and deep and save having to carve out too much on the backs of the axleboxes.

The following sizes of wire will be needed. Eileen's Emporium is a good source for these and they do mixed size packs if you don't want huge quantities of one size.

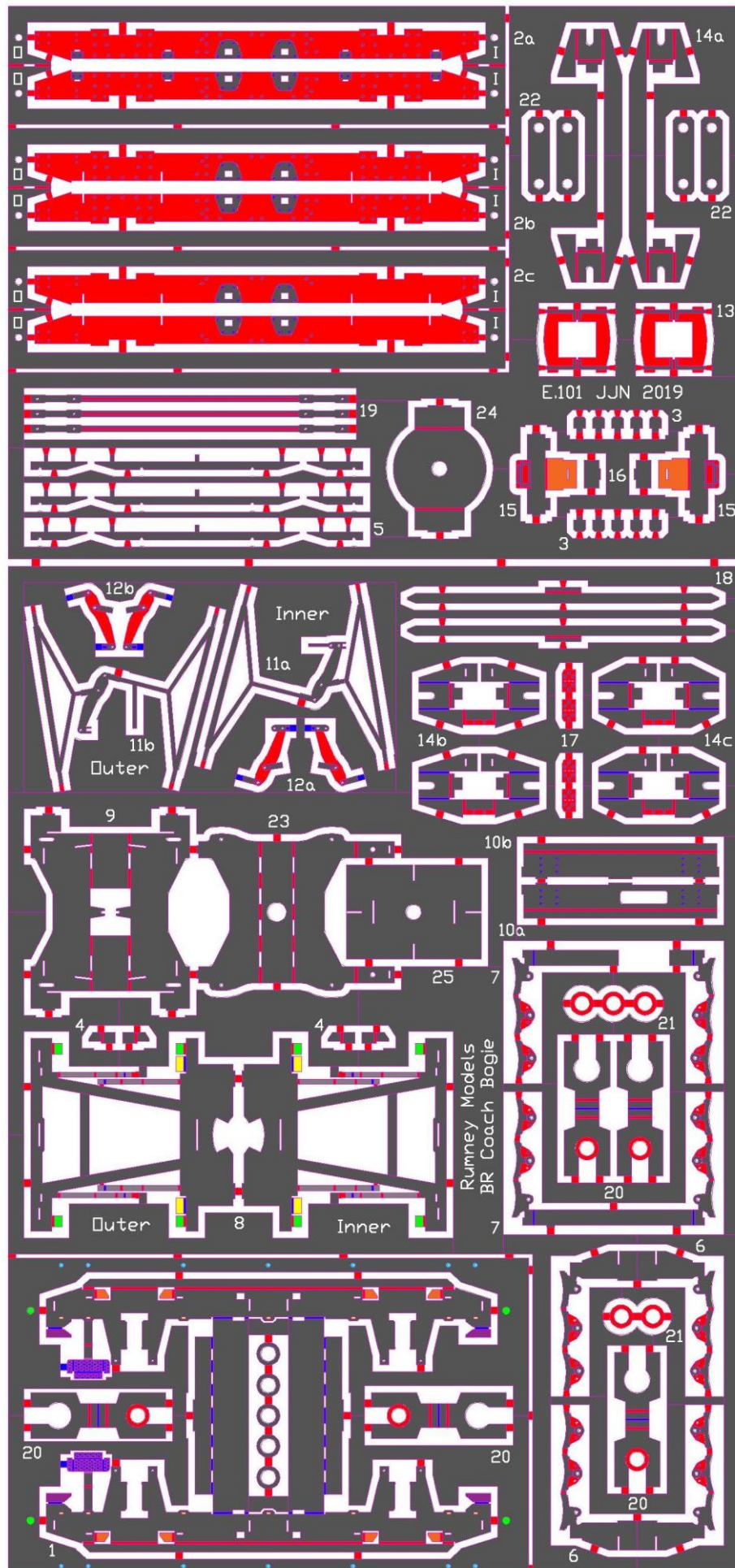
0.31mm	Brakegear/tiebars
0.4mm	Bolster springs
1mm	Fret location pins

Bolts, nuts and tube will be needed to fix the bogie to the body. There are two options:

- M2 bolts and nuts + 2.5mm outside diameter, 2mm inside diameter brass tube
- or
- 10BA bolts and nuts + 2.5mm outside diameter, 1.5mm inside diameter brass tube

I dislike using screw threads as a bearing surface hence the tubing.

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



Rumney Models Complete BR Coach Bogie 4

Parts List

- 1 - Main bogie assembly
- 2a - Sideframes - riveted bogie + riveted spring stops
- 2b - Sideframes - riveted bogie + welded spring stops
- 2c - Sideframes - welded bogie + welded spring stops
- 3 - Riveted spring stops
- 4 - Spare welded spring stops
- 5 - Sideframe bottom angle

- 6 - Inner brake shoes
- 7 - Outer brake shoes
- 8 - Top plates
- 9 - Bolster guide
- 10a - Inner ends
- 10b - Outer ends

- 11a - Brake rigging (inner end)
- 11b - Brake rigging (outer end)
- 12a - Brake rigging overlays (inner end)
- 12b - Brake rigging overlays (outer end)

- 13 - Internal plates (double bolster bogies)
- 14a - Bolster spring bearers (single bolster bogies)
- 14b - Bolster spring bearers (original double bolster bogies)
- 14c - Bolster spring bearers (revised double bolster bogies)
- 15 - Backing plate for spring bearers (double bolster bogies)
- 16 - Reinforcing plate for spring bearers (revised double bolster bogies)
- 17 - Reinforcing angles for spring bearers (revised double bolster bogies)

- 18 - Sideframe top reinforcing for heavy duty bogies only

- 19 - Tiebars
- 20 - Spring carriers
- 21 - Bearing washers

- 22 - Bolster spring planks
- 23 - Bolster

- 24 - Bogie pivot plate
- 25 - Pivot locating plate

- Cast 6 leaf spring/BR1 axleboxes (4 left, 4 right)
- Cast spring hanger brackets (8)
- Cast bolster springs (8)

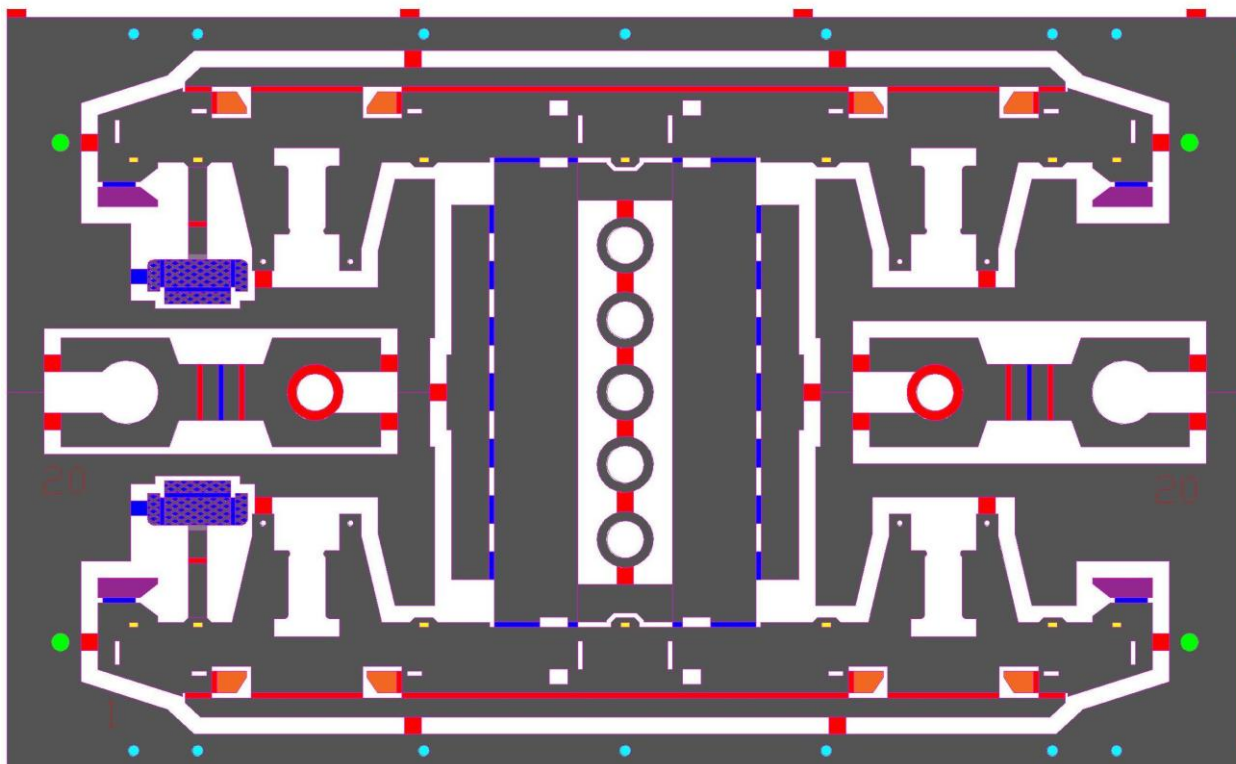
Construction

Bogie Frame

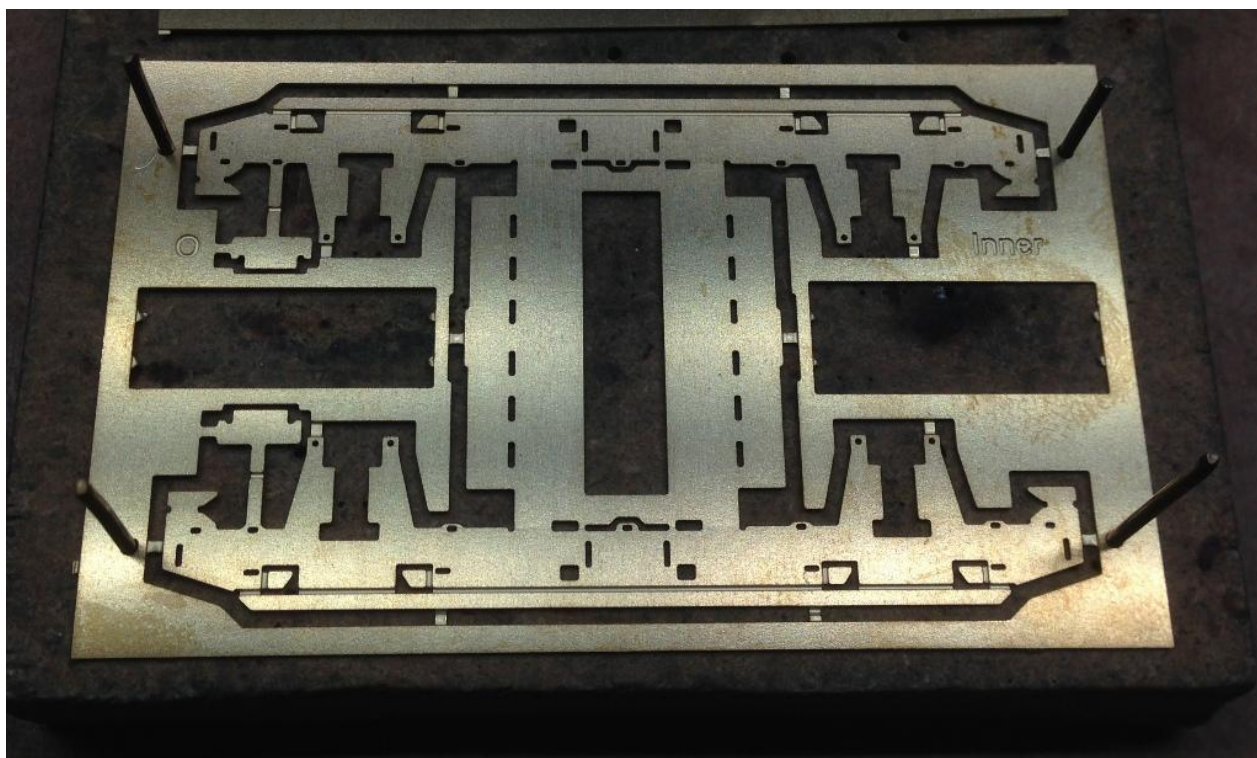
The sideframes of your choice (2a-c) are designed to be fitted to the main bogie assembly (1) whilst the parts are still attached to their surrounding fret. 1mm wire pins through the surrounding frets are used to make sure things are aligned whilst soldering the parts together. In order to do this a jig needs to be constructed using a piece of scrap MDF or wood.

Separate the fret containing the main bogie assembly (1) from the set of etches. Using the fret drill four 1mm holes into the piece of mdf using the holes shaded green in Fig.1 as a guide.

Fig.1



Four short lengths of 1mm wire can then be inserted through the fret and into the mdf. These will provide location points for the sideframes. It's a good idea to put a slight chamfer on the ends of the 1mm wire pins to help the wire pass through the holes. At this point with the fret firmly fixed in place mark the small rectangular holes which are shaded yellow in Fig.1 on the mdf.



Remove the fret and drill holes at the points where the yellow rectangles were using a 0.6mm drill. You can also use the fret to drill these holes if you wish. The holes shaded cyan in Fig.1 are of the correct spacing; just make sure they align with the marks you made. The holes don't need to be very deep or indeed completely accurate. They just need to accept the locating tags in the sideframe bottom angle (5).

Next separate the set of sideframes of your choice from the set of etches and then separate the two sideframes from each other leaving the surrounding fret attached (see image below). There are three choices:

- 2a - Riveted bogie + Riveted spring stops
- 2b - Riveted bogie + Welded spring stops
- 2c - Welded bogie + Welded spring stops

Push out all the half etched holes on the back. These will form the rivets around where the bolster spring hangers are attached to the outside of the bogie and, if you are constructing a bogie with riveted spring stops, the rivets on the brackets by which the spring stops are attached.

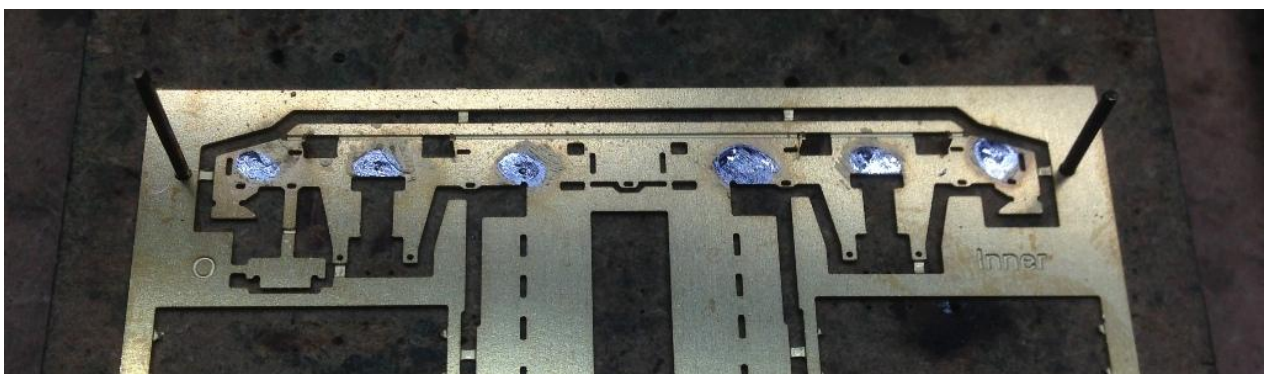
If you are building a bogie without steps (for a BG or a GUV for example) you can remove the two pairs of rivets that represent the step fixings. These are circled in the image below and are in a similar place on the other sets of sideframes. Note they are at one end only.



If you are constructing a bogie with welded spring stops fold out the tabs that will form the stops. These are shaded orange in Fig. 1.

Place the main bogie assembly and surrounding fret back onto the jig using the four 1mm wire pins to locate it in place. The fret should be arranged so that the numbering is visible.

The sideframes will need soldering in place and to do this I tinned the main bogie assembly in half a dozen places each side (see image below). At the same time reinforce the fold lines in the welded spring stops if you are making a bogie fitted with them.

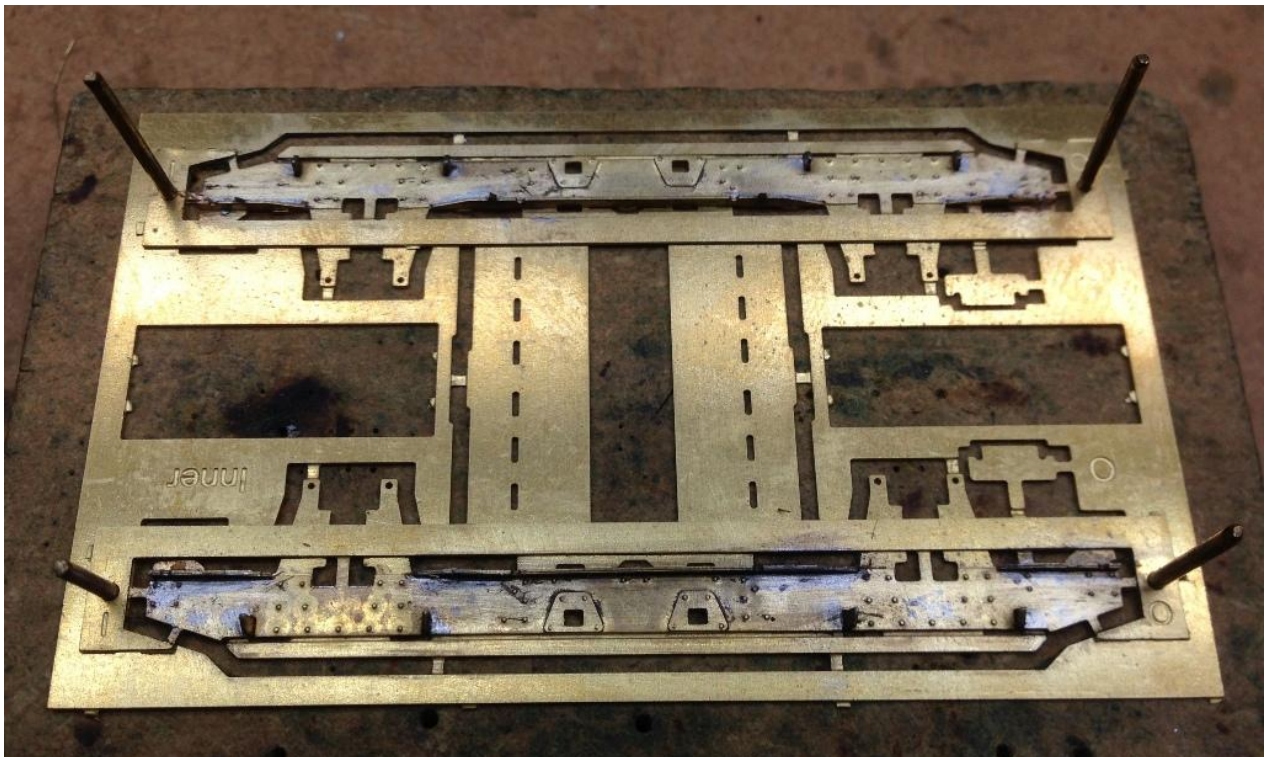


Place the sideframes over the main bogie assembly using the wire pins to locate them. Solder them together. Also try and solder any welded spring stops to the sideframes to reinforce them. The welded spring stops are a bit delicate and I lost one during the course of my test build. Spare welded spring stops (4) are included if needed. These simply fold up and fit into the space on the main bogie assembly.

If you are constructing a bogie with riveted spring stops remove the riveted spring stops (3) from the fret and use the tabs to locate them into the holes in the sideframes. Solder in place. They will be in a similar position to the welded stops in the image below though are horizontal rather than vertical.



Next fit the sideframe bottom angle (5). This comes in three parts and is arranged on the fret as it should be fitted to the bogies with two outer pieces and one central piece. The locating tabs are made deliberately overlong in order to aid fitting. Make sure they are at 90° to the bogie sideframe and solder in place.



Double check to make sure that everything is firmly soldered in place and then you can remove the bogie from the jig and remove the surrounding fret. Clean up all the connecting tags including those on the back of the sideframe bottom angle.

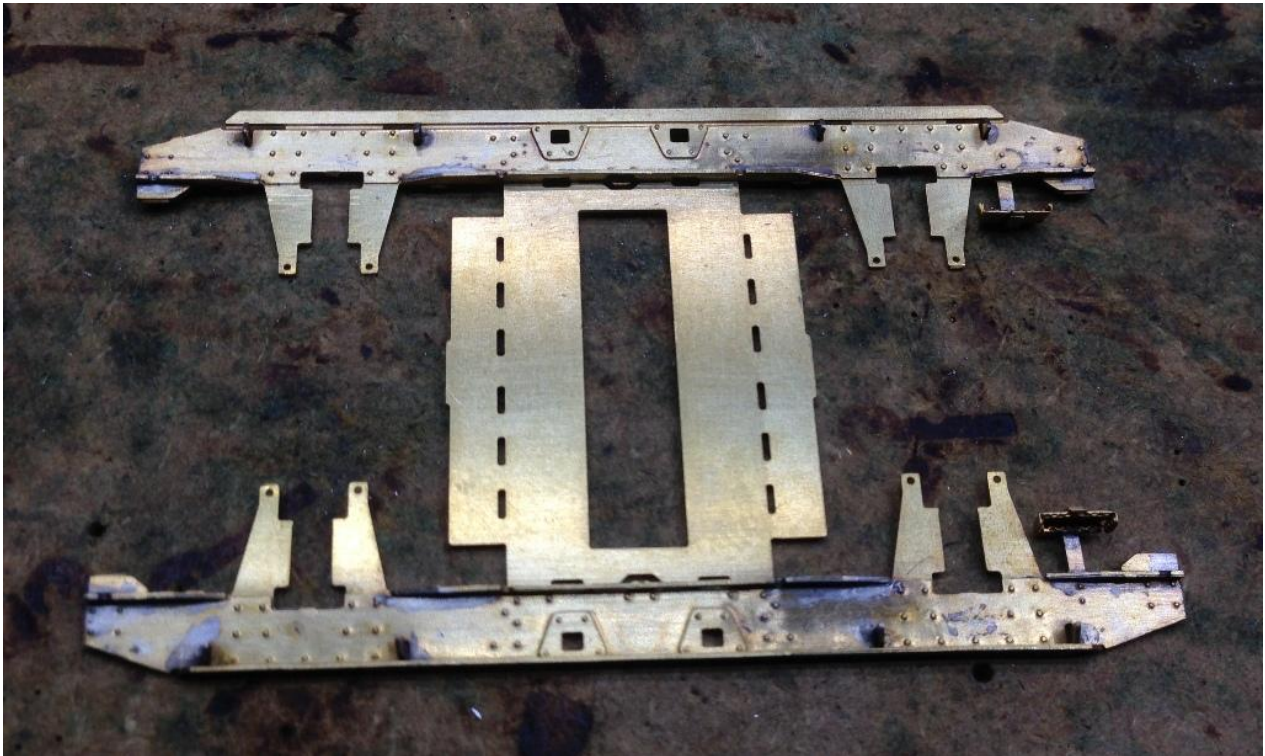
You will need to fold over what will become the top of the channel that makes up the sideframes. This is on the outer edge of the bogie. Use a vice to get it most the way of you can. The spring stops will be a pain here and you can use a pair of pliers working along the edge doing it a little at a time. Scoring the fold line may also be a help.

There are four backing plates for the dampers that need folding over and soldering in place. These are shaded purple in Fig.1. The fold lines should be through 180° with the fold line on the outside.

If you are constructing a bogie without steps you can cut them off just below where they extend below the sideframe. Don't cut them absolutely flush as the sideframe bottom angle has a locating slot at this point and you may disturb the fixing of it.

If you are constructing a bogie with steps now is the time to fold them up. The chequered part of the step has three fold lines through it, start by folding them up to form the back and sides of the step. Next fold the fold line between the step and the hanger (shaded grey in Fig.1) through 180° with the fold line on the outside so that the hanger is under the step. Fold at the remaining fold line so the hanger comes up the back of the step. Solder the step to the hanger.

The step should be bent so that it is slightly away from the axleguards but this is best left until after the spring castings are fitted.



At this point the two sideframes can be folded up at the central stretcher. Also fold up the two long plates with tabs in the middle on the stretcher. Make sure all everything is at 90° and reinforce the fold lines with solder.

The next job is to make up the brake shoes and fit the bolster guide. Remove the inner brake shoes (6) and the outer brake shoes (7) from the fret. The brake shoes themselves come in three parts, a full thickness layer, attached to the larger part, which will form the middle and then two half etched detail layers for the outsides. The detail layers are designed to wrap around the full thickness middle. Use the 0.5mm holes etched in the middle of them to align the three parts and solder together.

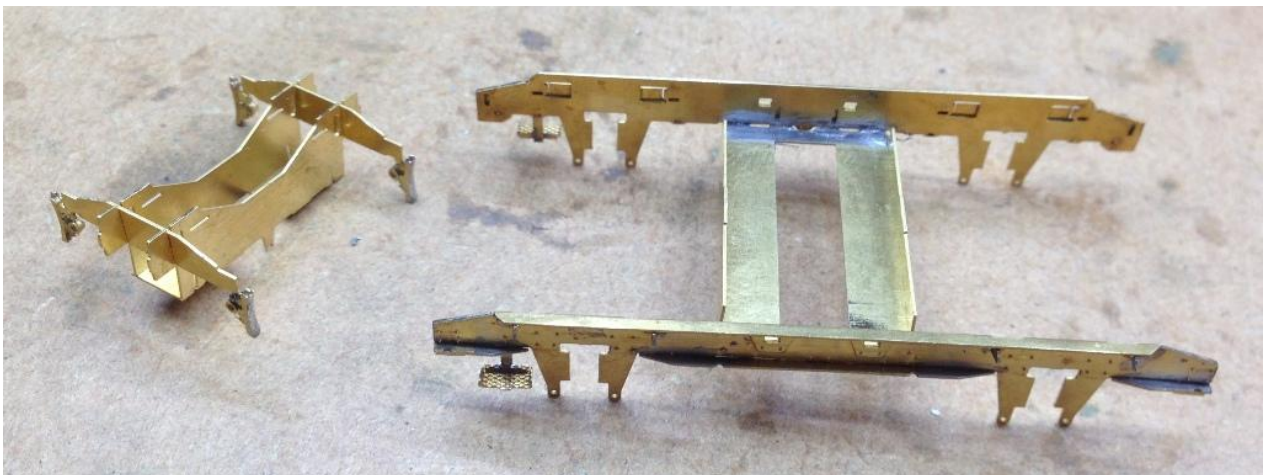


Note that on one of the outer brake shoes the two sides with the brake shoes on are connected together but on the others they are separate. This is because of the need to clear a hole in the inside end of the bogie.



Remove the bolster guide (9) from the fret and fold into a C shape. Make sure everything is at 90°.

The inner brake shoes locate onto the bolster guide using the slots in the middle of the inner brake shoes and the outsides of the bolster guide to form the centre of the bogie. See the image below.



Next locate the bolster guide and inner brake shoes in the middle of the bogie. There are small tabs on the outer edges of the bolster guide that locate into slots in the sideframes. The bolster guide should trap the inner brake shoes in place when these tabs home in their slots. Solder the bolster guide to the sideframes and the inner brake shoes to the long fold out parts on the central stretcher.

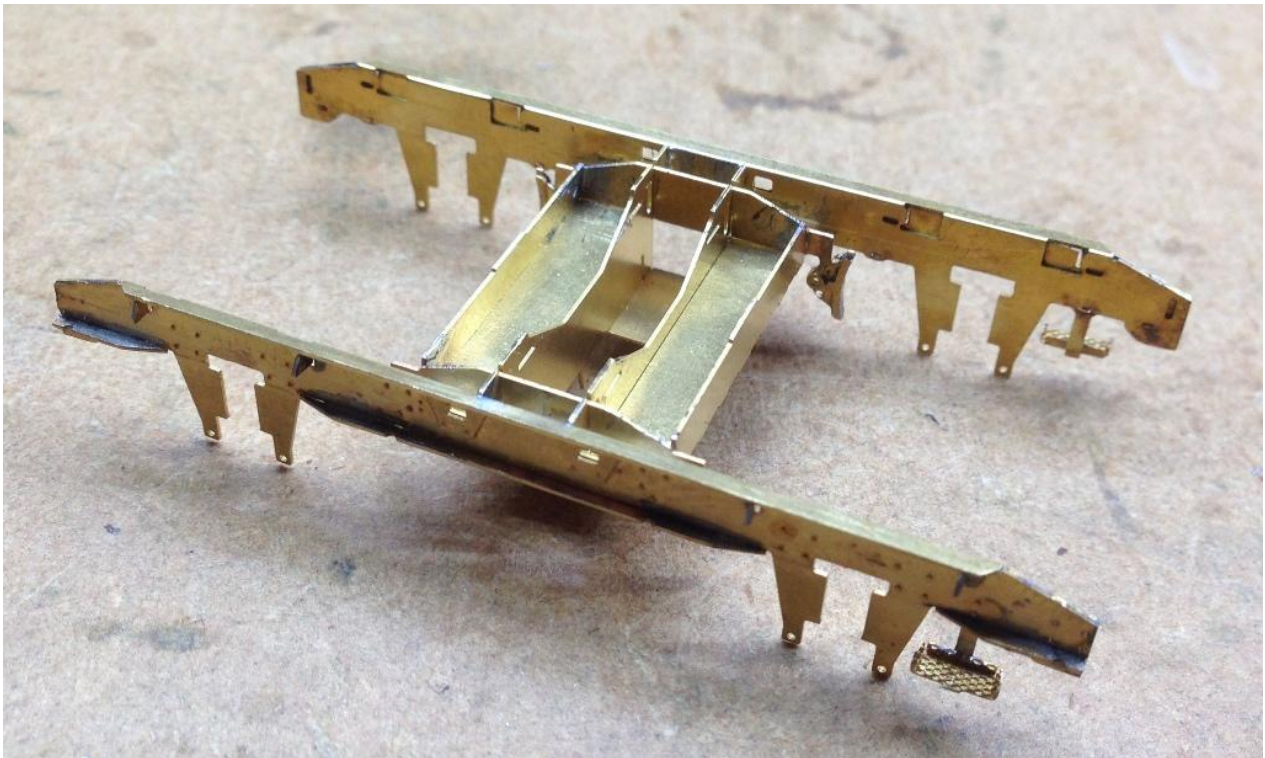
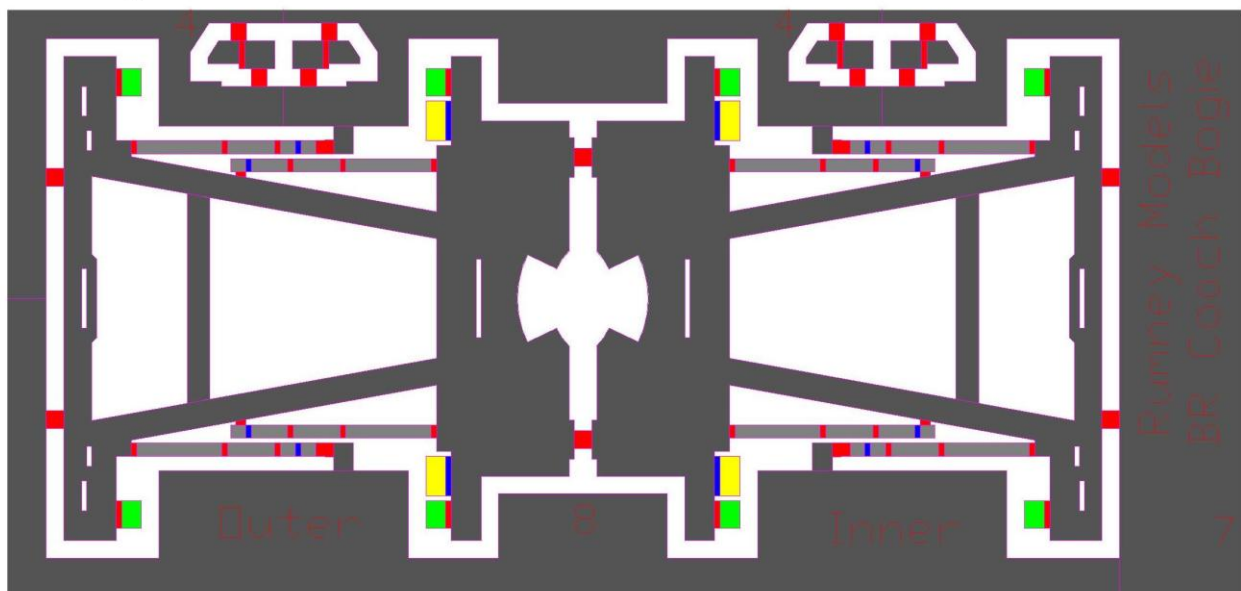


Fig.2



Remove the two top plates (8) from the fret leaving the thin strips on either side which will form the brake yoke safety loops attached (shaded grey in Fig.2 above). The top plates are labelled inner and outer on the fret but are exactly the same. Fold up the tabs shaded green in Fig.2.

Remove the inner end (10a) and outer end (10b) from the fret. Note that the inner end has a rectangular hole in. Press out the half etched rivets and fold the ends into an L about the fold line.

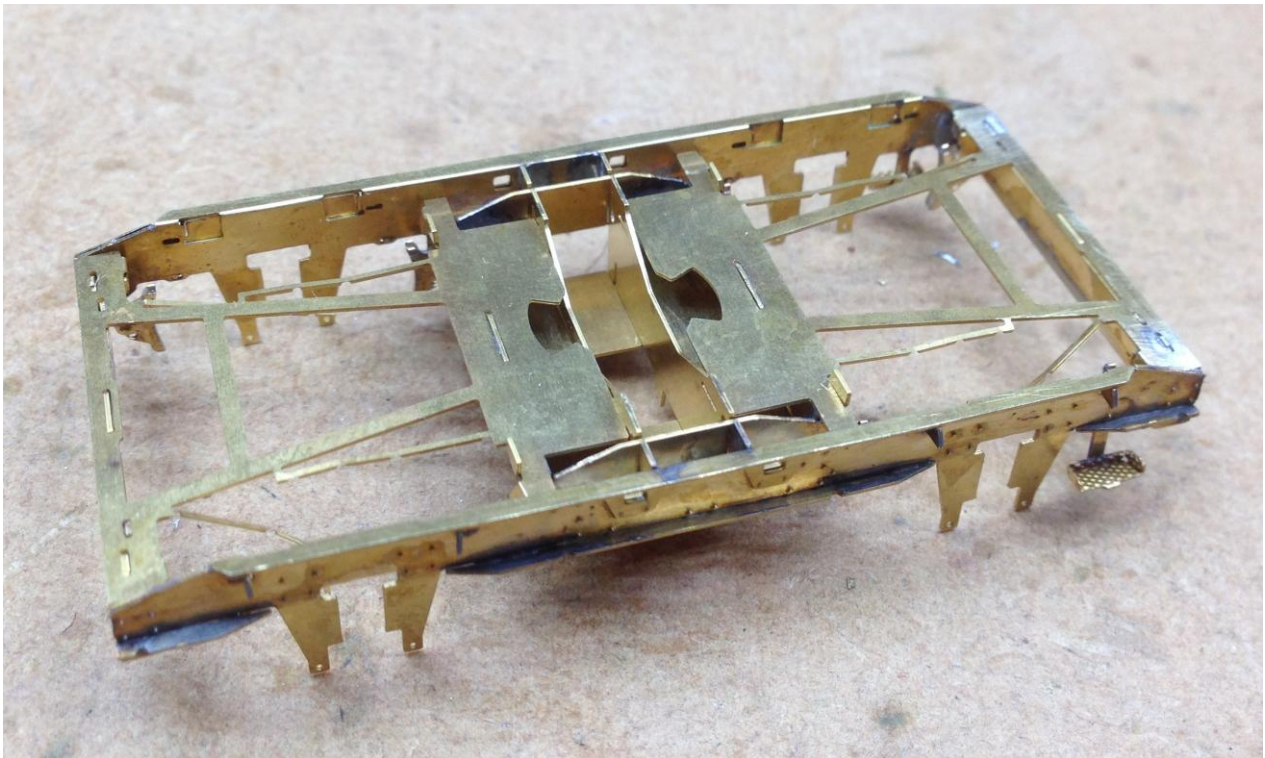
Locate the ends onto the top plate using the three tabs provided on the ends and the three slots on the top plate. The end should be arranged so that it is the same side as the tabs you folded out earlier (those shaded green in Fig. 2) and the L is facing towards the outside of the top plate. Make sure the end is at 90° and solder in place.

There have been various references to inner and outer on the frets but only now does it actually matter. The end with the rectangle etched in always goes on the end of the bogie facing towards the middle of the coach. On the real thing it allows the belt from the dynamo to pass through. The ends facing towards the outside of the coach were solid. When fitted the end with the etched rectangle will define the 'inner' end of the bogie and also set the orientation of the brakegear.

All this matters because, in most cases where steps were fitted, they were located towards the outer ends of the coach, on the 'outer' end of the bogie. This was however not universal and in some instances steps were fitted on the 'inner' end of the bogie. We will assume from now on that that you are building a bogie with steps on the 'outer' ends but if you want one with the steps on the 'inner' ends you should reverse the fitting of the top plates.

Fold out the tabs on the top plate that are shaded yellow in Fig.2.

Fit the top plates in place on the bogie using the tabs on the top plates and slots on the bolster guide along with the tabs on the ends and slots on the sideframes to locate everything together. Note that the end with the rectangle etched in should go on the opposite end of the bogie to the steps (unless you want the steps on the 'inner' end of the bogie in which case it should go the same end).



Fold up the outer brake shoes so that the parts with the actual brake shoes on are at 90° to the flat plates with tabs on. Fit the outer brake shoes in place behind the bogie ends. There are tabs on the outer brake shoes and slots on the top plate. Note that the outer brake shoe where the two sets of brake shoes are connected goes on the 'outer' end of the bogie. Solder in place.



Brake Rigging

The next job is to fit the brake rigging. These are numbered and labelled inner and outer and this does matter. You should do one set (outer or inner) at a time and then do the other so as to avoid confusion. As the images show the outer set we will start with that.

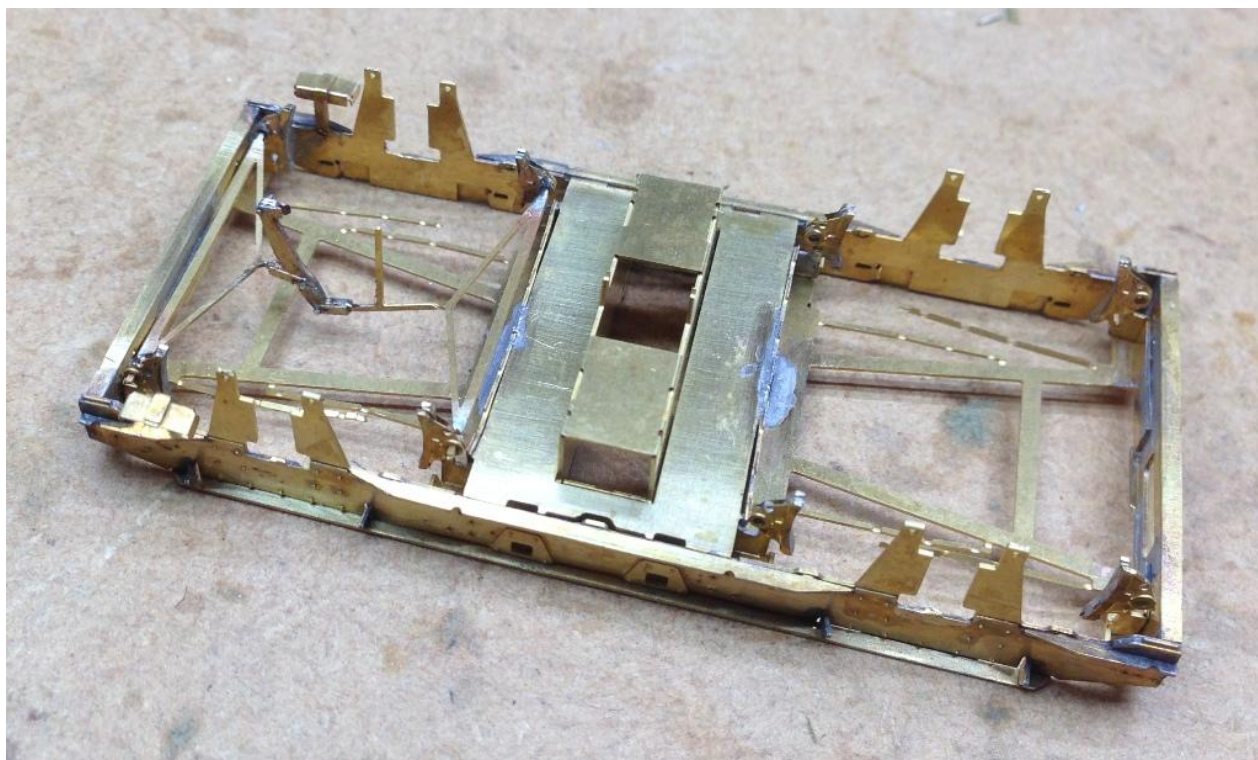
Remove the brake rigging (outer end) (11b) and corresponding overlays (12b) from the fret. The overlays go on both sides of the links between the yokes. Use 0.31mm wire to pin everything and then solder together. You may find it useful to create a jig on a piece of mdf using the brake rigging as a drilling guide for the 0.31mm holes. You can then insert the wire into these holes as you layer everything up. Note that some of the holes in the overlays are half etched. This is to avoid using the wrong holes to align things.



Twist the yokes through 90° just beyond the tip of the triangle.



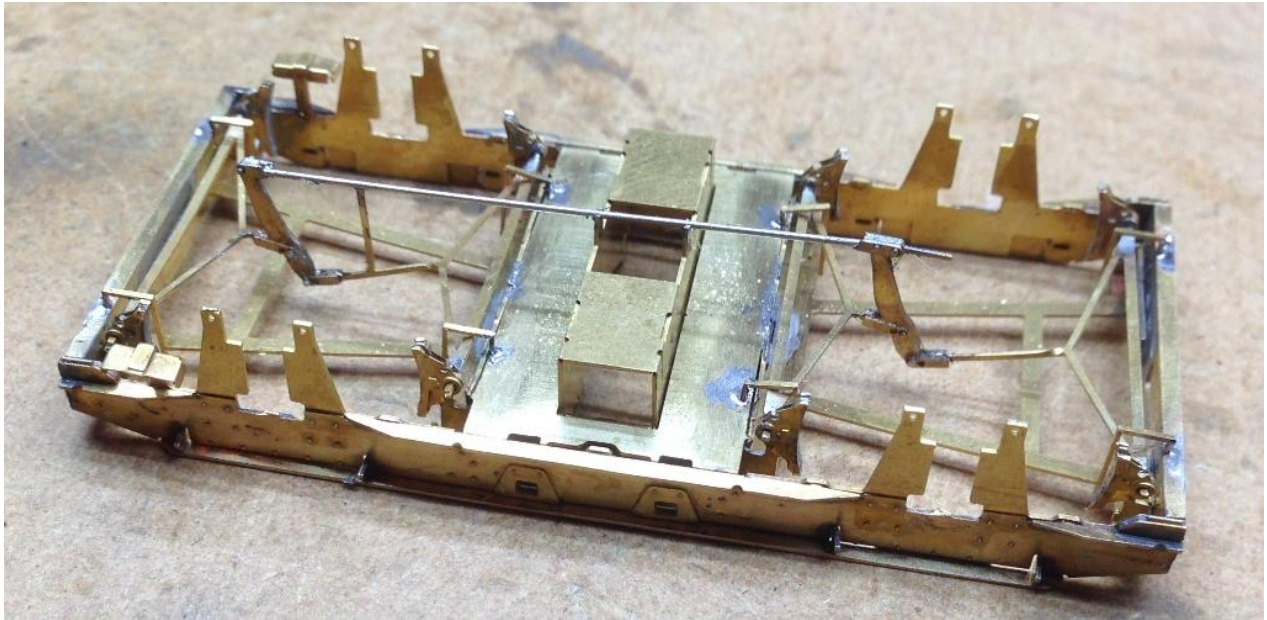
Fit in place on the 'outer' end of the bogie. The ends of the yokes go through the holes in the brake shoes.



Repeat the above using the brake rigging (inner end) (11a) and the corresponding overlays (12a). They should be fitted as per the image below with the hangers orientated towards the outer end.

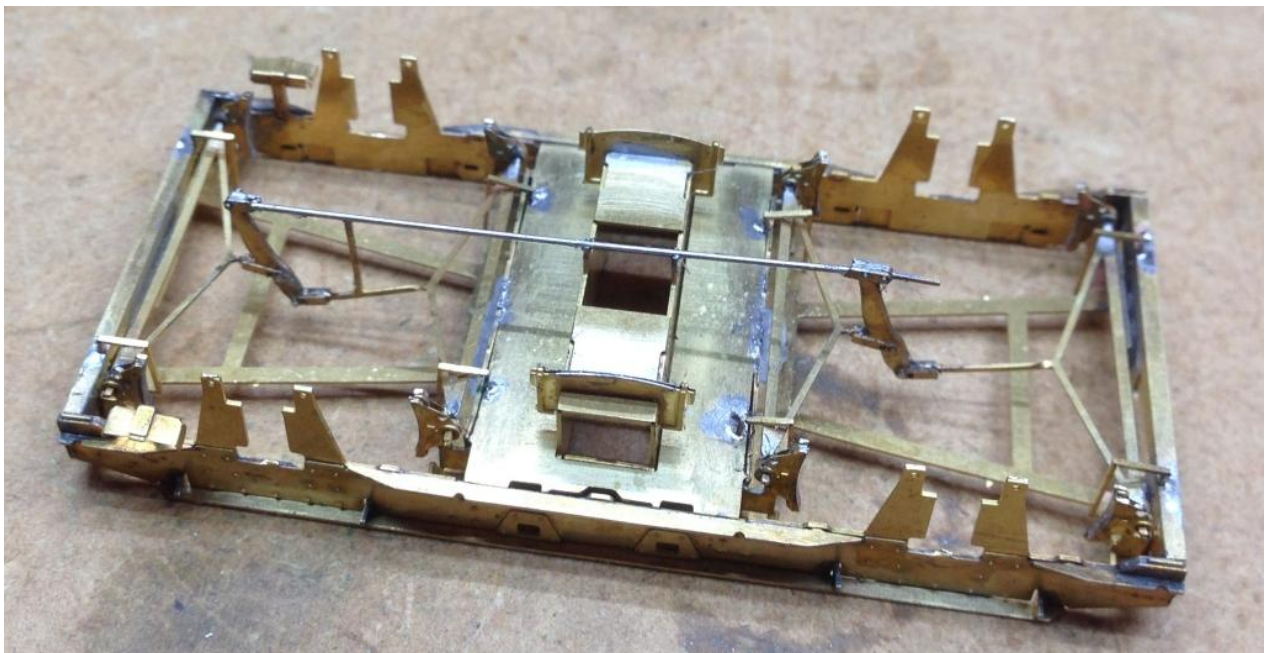
Use 0.31mm wire to connect up the two sets of brakegear. There are slots in the hangers to allow the wire into and supports on the bottom of the bolster guide. Solder in place, especially to the supports. The wire passing between the sides of the bolster guide will need to be removed to allow the fixing bolt to be fitted. I soldered a short length of wire to the inner end of the brake rigging represent the connection to coach. This was left short to allow the wheels in. The rest of the connection can be arranged on the coach underframe.

Fold up the brake yoke safety loops (the parts shaded gray in Fig.2). There are a lot of fold lines on these but they are all through 90°. Solder to the bottom of the ends and the central stretcher.



Bolsters

Only if you are constructing a double bolster bogie, remove the internal plates (double bolster bogies) (13). These fold double, then fit into the angled slots on the bottom of the bolster guide. See image below. Solder in place.



Next we will turn our attention to the bolsters themselves, starting with the bolster spring bearers. There are three types depending on what sort of bogie you are constructing:

- 14a - Bolster spring bearers (single bolster bogies)
- 14b - Bolster spring bearers (original double bolster bogies)
- 14c - Bolster spring bearers (revised double bolster bogies)

If you are constructing a single bolster bogie remove part 14a and then fold up making sure everything is at 90°. The fold lines can be reinforced with solder if you wish and then fitted to the underside of the bogie. There are slots in the stretcher on the main bogie assembly into which the tabs on the spring bearers locate. There is only really one way round to do this as I had to lose the middle of one side of the single bolster spring bearers because of the bolster guide. You can now skip the next part and go to the section on tiebars and spring carriers.

If you are constructing a double bolster bogie remove your spring bearer of choice. Parts 14b and 14c are almost identical, it's just the angle of the sides that is different. On each of the spring bearers there is a plate with an open slot on, fold up all the sides around this. See image below.

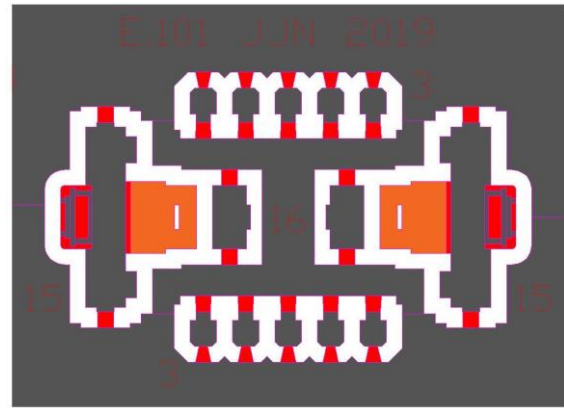


Next fold the spring bearer about the connecting piece to end up with a part as per the image below.



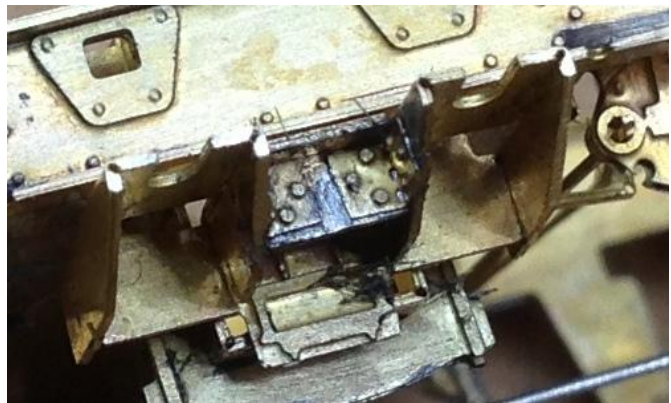
Remove the backing plate for spring bearers (double bolster bogies) (15). If you are constructing one of the original bogies remove the part shaded orange in Fig.3 opposite. If you are constructing a revised bogie then fold into an L shape. The backing plate then fits between the sides of the spring bearer with the half etched detail area facing towards the open slots and is orientated as per the image above. There are tabs on the backing plate and slots in the spring bearer sides to locate things. Solder in place.

Fig.3



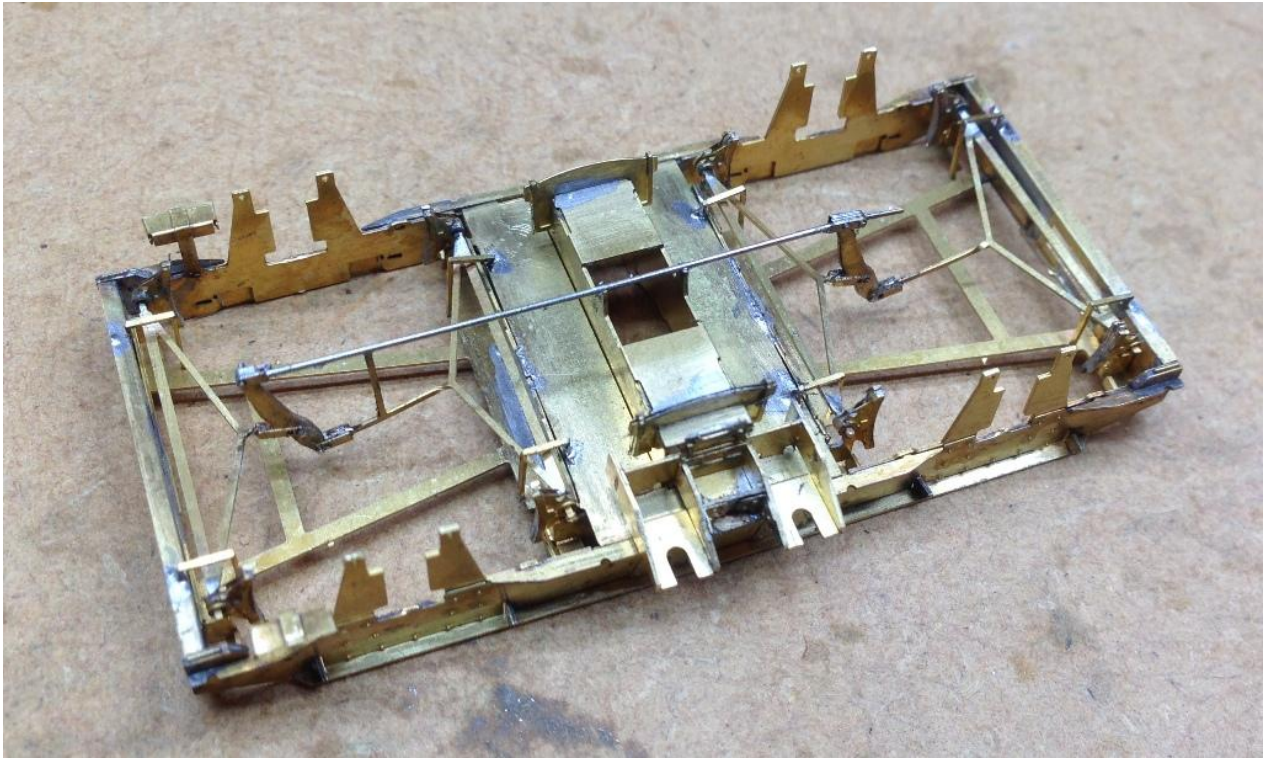
If you are constructing a revised double bolster bogie remove the reinforcing plate for spring bearers (revised double bolster bogies) (16). This fits between the inner sides of the spring bearers and locates into the slot on the backing plate. Make sure it's at 90° and solder in place.

Remove the reinforcing angles for spring bearers (revised double bolster bogies) (17) and fold into an L about the small slots. These are fitted against part 16 and the sides of the spring bearers. Note that there is a chamfer in one corner of the reinforcing angles; this should go against the bottom of the sides of the spring bearer. See image opposite. Solder in place.



For either type of double bolster bogie the spring bearer unit can now be fitted to the bogie. There are slots in the stretcher on the main bogie assembly into which the tabs on the fold out tops of the spring bearers locate. Solder in place.

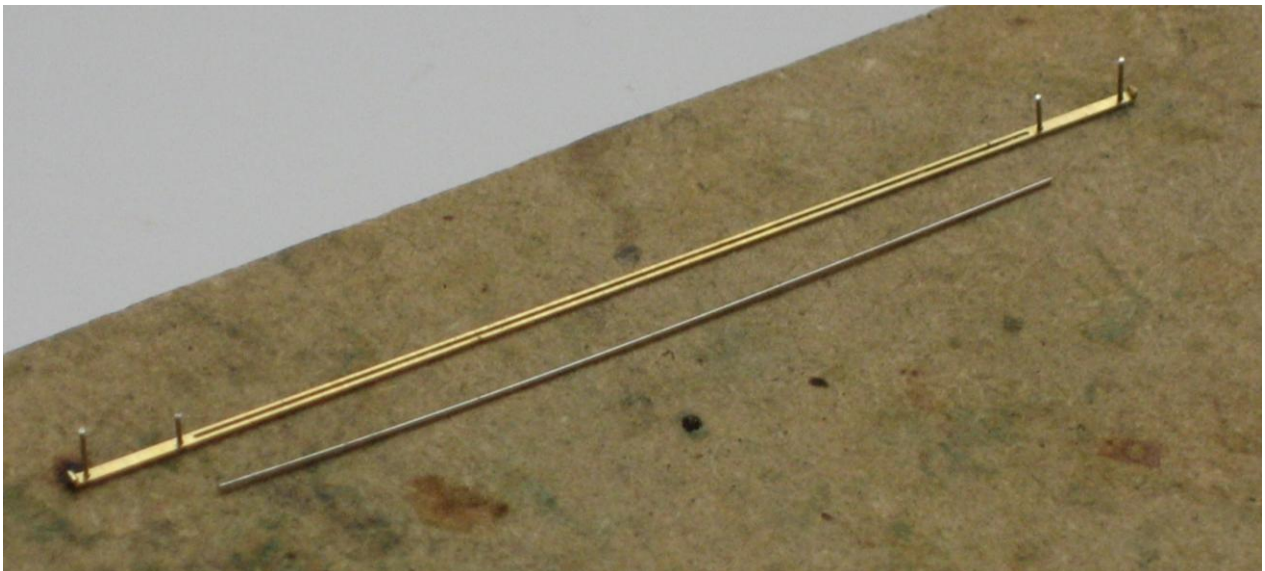




Tiebars

The tiebars (19) are designed to be removable if you wish in order to allow the wheel sets to be easily dropped out. I would recommend following this route as it will be tricky to get the wheels in and out if you fit them permanently in place. If you do want them to be soldered permanently in place then leave the fitting of them until after the spring carriers are assembled and the wheels fitted. Either way you will need to make sure the holes will accept 0.31mm wire before removing the tiebars from the fret and follow the same method of construction below.

You will need to solder 0.31mm pins through the holes in the axle tiebars. I find the easiest way of doing this is to use one pair of the tiebars as a jig and drill four 0.3mm holes into a piece of mdf or scrap wood. Short lengths of 0.31mm wire can be located through the holes in the tiebars and into the holes drilled into the wood. Make sure the slot along the middle of the tiebar is visible. Solder the wire in place and whilst still pinned to the wood file the wire back to represent bolt heads. Tiebars are fairly vulnerable so in order to strengthen them I have included a slot into which you can solder a length of 0.31mm wire. This will make them a lot more robust.



Remove the tiebar and trim the other end of the wire. You will need to make sure there is at least 1mm of wire projecting from the back of the tiebars 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 tiebar as long as possible to give you somewhere to hold them when painting. Once the tiebars 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.

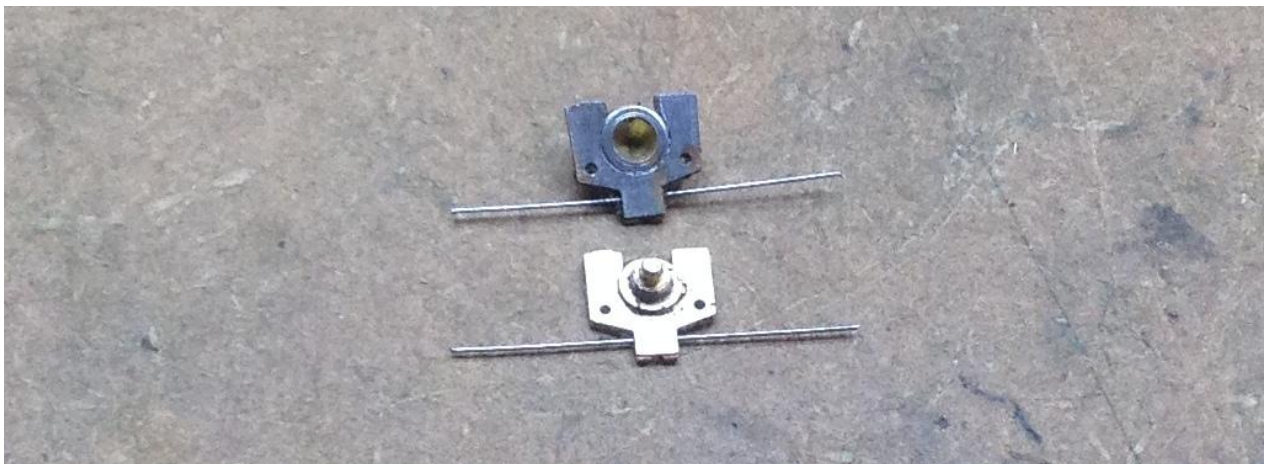
Spring Carriers

The spring carriers (20) can now be assembled. They are designed to be folded double and the springing wire soldered to the carrier using the etched slot as a guide. Make sure when soldering the wire that it is firmly in place.

The pinpoint bearings will need to be fitted at the same time. I use Alan Gibson waisted bearings as they are nice and deep but because of this you may find that the carriers need packing out a little to take up any slop. Bearing washers (21) 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 you don't want to use the Gibson ones at least make sure you use a waisted type of bearing to avoid having to remove any more material from the axlebox casting than is necessary.

I find the easiest way to assemble the spring carriers is to make a small jig consisting of an off cut of mdf or wood with a 2mm hole drilled into it.

There are three half etched lines in the middle of the spring carrier. Fold the spring carrier double about the middle fold line with the fold line on the outside. The spring carrier can then be placed so that 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 through its 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 8.5mm either side of the point where it is attached to the carrier. They will need to be trimmed but do this whilst checking against the bogie after cleaning the carrier up.



Test fit the carriers and shorten the springs at the ends if required. If you find you need to add washers to remove slop then do so to the outside of the spring carrier. This will have the added advantage of reducing the bearing surface area between carrier and axleguard which is a good thing.

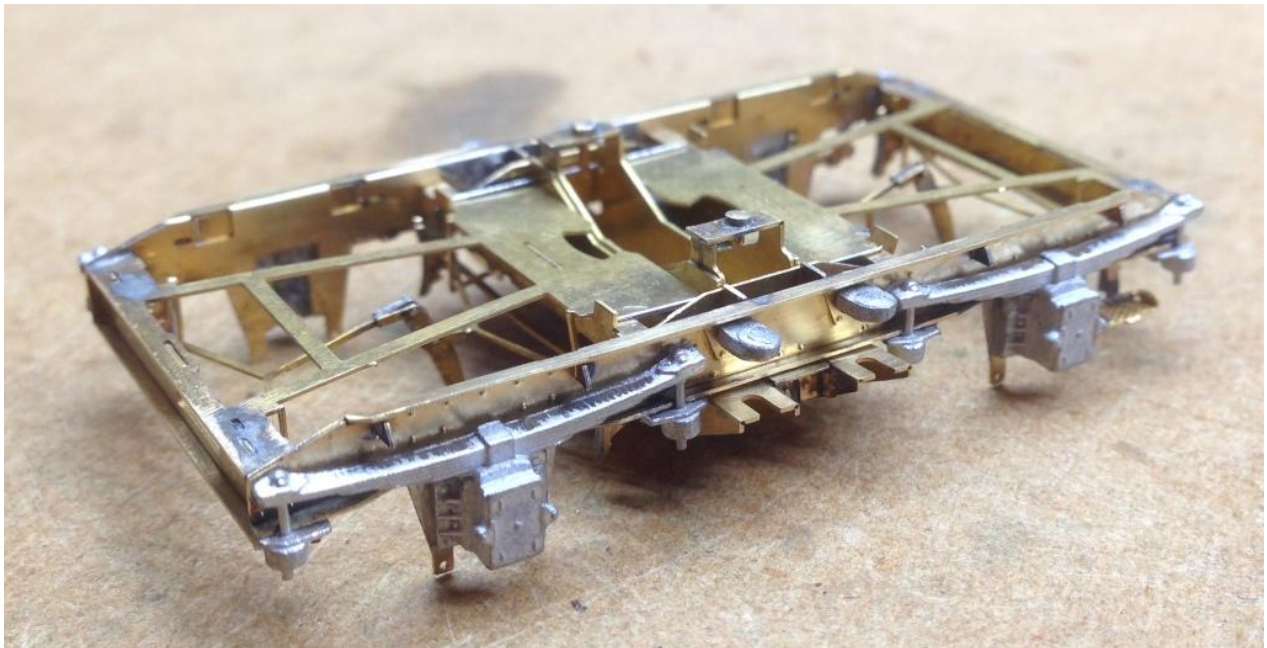
Castings

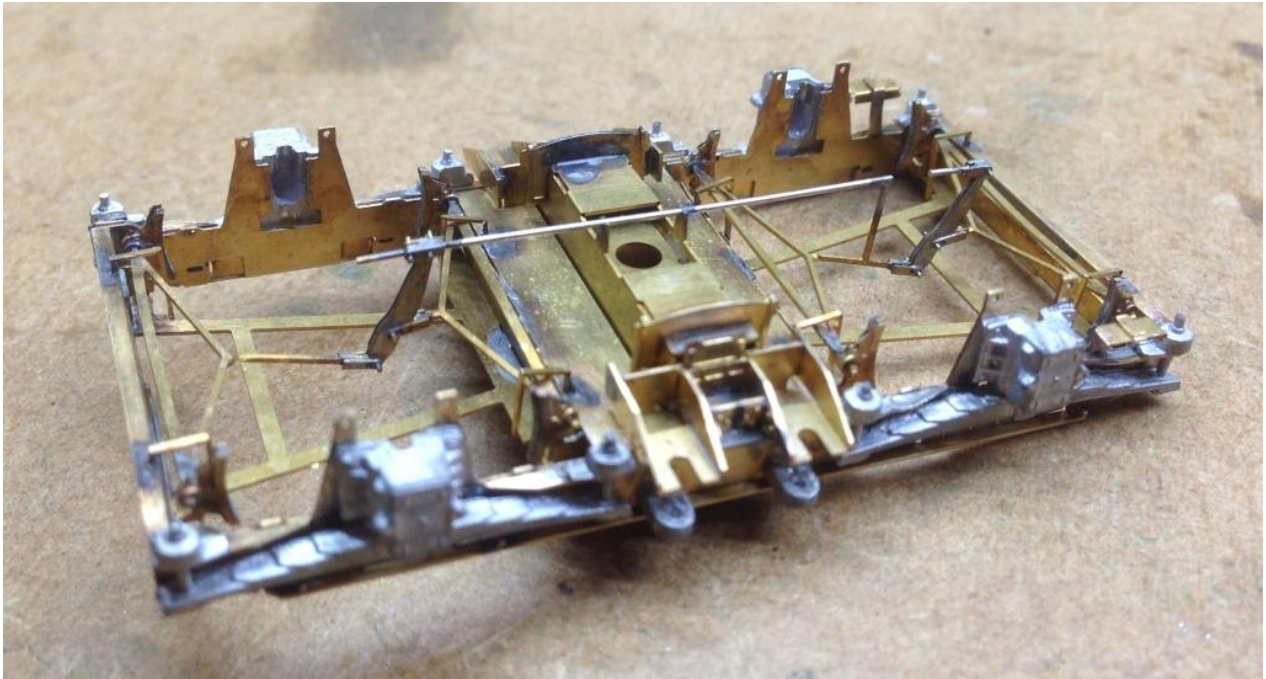
You will need to open out the back of the axleboxes for the bearings. There is a slot in there but it is a little undersize to make sure the castings come out successfully. In order to get a 2mm slot in the back I use a high speed cutter from Dremel (#193) held in a pin vice and open it out by hand. The Dremel cutter is very useful but don't be tempted to use it on whitmetal with a power tool as it will make a mess of the casting. This slot doesn't need to be very deep when using a waisted bearing. I use a small burr or cutter in a mini drill for further clearance work. Also put a slot in the bottom of the axleboxes to help getting the bearings in. Make sure you do all the work on the axleboxes whilst it is still attached to its moulding fret. When ready the fret can be removed with the aid of a piercing saw. Note that there are both left and right hand versions of the springs which is marked on the moulding fret. The brackets that located the dampers were different depending on whether they were in the middle of at the ends, hence the difference.

The bolster springs and bolster spring hangers will need drilling to accept 0.4mm wire. There are indentations on both items to aid locating the drill. Only go a little way into the spring hanger, you don't want to put a hole all the way through. The hangers locate in place via slots in the sideframes. Make sure the locating spigot on the hangers is a good fit.

Solder the spring/axlebox castings in place perhaps using the bearings in the spring carriers as an aid.

Solder the bolster spring hangers in place from the back making sure the hole for the wire to the bolster springs is on the bottom.

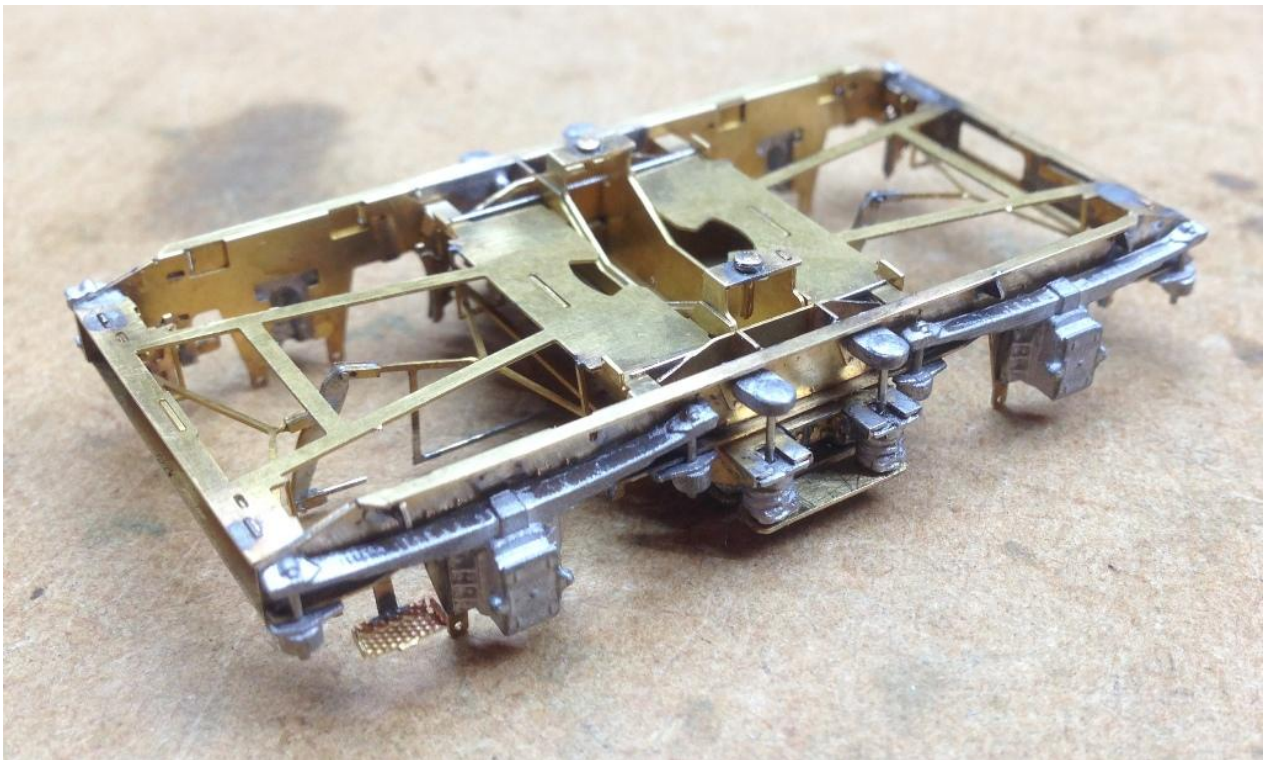
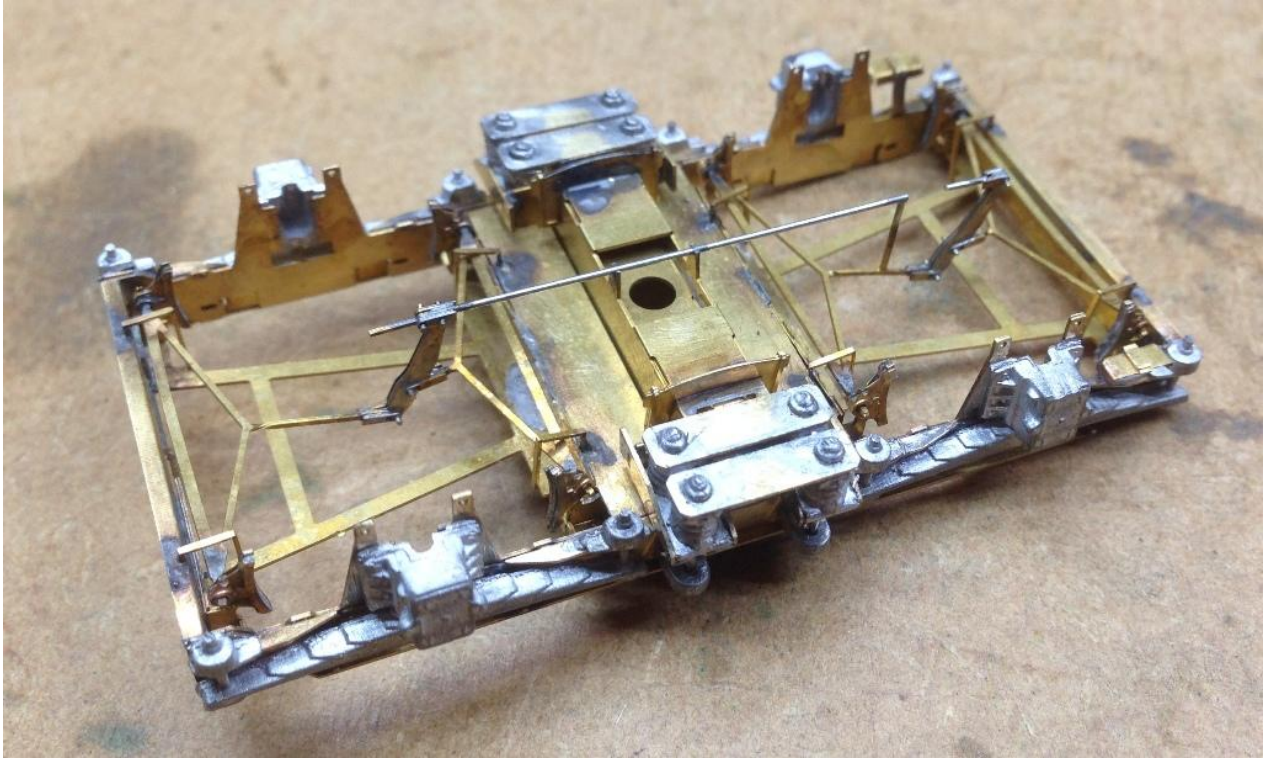




Check the fit of the bolster spring castings in the spring bearer. The flat top plate on the casting should fit nicely against the top of the bearer. Fit the bolster springs along with a short length of 0.4mm wire located into the bolster spring hanger. The length of the wire will depend on how far into the spring casting you drilled. Solder or glue in place.



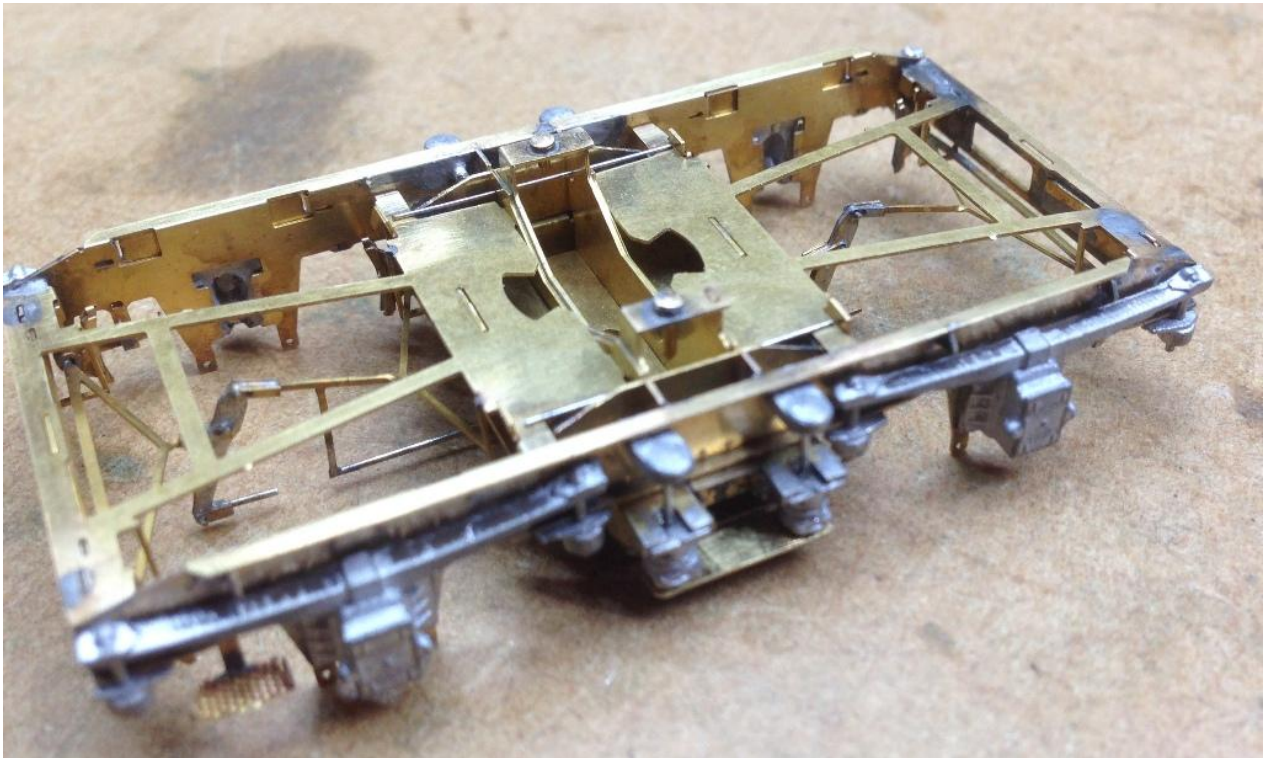
Next fit the bolster spring planks (22). You may need to open out the holes using a tapered reamer to fit onto the bolster springs. Solder or glue in place.



Bolster

Remove the bolster (23) from the fret. The bolster folds into a C shape like the bolster guide but with two parts across the top that locate via slots and tabs. Make sure everything is at 90°. Solder the two top parts in place. Cut the tails of the four pins provided in the kit so that there is only 2/3mm left attached to the head. The pins fit into the two parts across the top of the bolster. Check the fit and open the holes out if necessary. Solder the pins in place. Check the fit of the bolster in the guide. If it's tight then twist the bolster slightly out of square to narrow it.

Cut two lengths of 0.009" steel spring wire to 16mm long. These need to be fitted in place with the bolster in the bolster guide. The spring wire fits through the slots in the bolster guide and holes in the bolster. The four tabs on the top plates that point upwards should be enough to retain the spring.



Bend the hanger for the steps (if fitted) so that the steps are slightly in front of the axleguard but the step is still level.

Lastly, if you haven't been doing the pair together, build the other one!

Pivoting points and adjustment

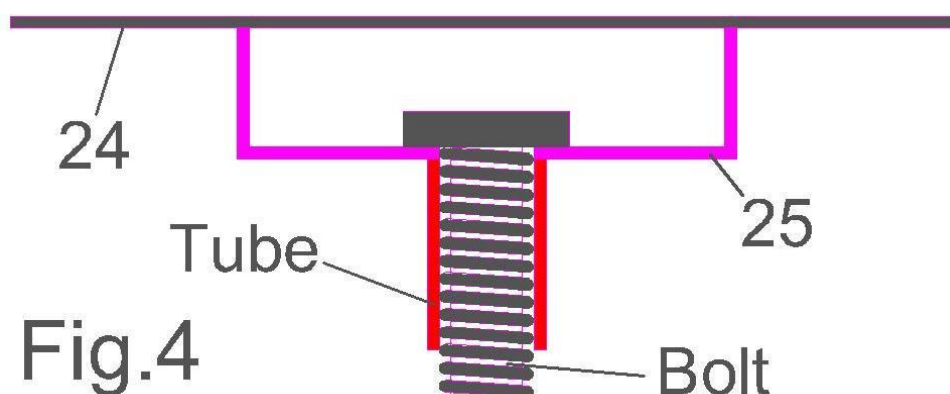
I dislike using screw threads as bearing surfaces and so have etched the holes in the bogies to 2.5mm diameter in order to be able to use a sleeve of 2.5mm outside diameter brass tube with the locating bolts. It may be a little extra work but there will be no catching of the bogies on the pivot bolt when moving up and down or turning.

If you are fitting the bogies to a Bachmann Mk1 then use M2 bolts with a sleeve of 2.5mm outside diameter, 2mm inside diameter tubing. The M2 bolts will nicely self tap into the existing locating holes in the plastic Bachmann bolster. Make the tube 7mm long and screw thread on the M2 bolt 10mm long.

If you are fitting to a kit built coach then you can use the bogie pivot plate (24) and pivot locating plate (25) provided. You can either use M2 or 10BA bolts. If using 10BA bolts you will need 2.5mm outside diameter, 1.5mm inside diameter brass tube to use as a sleeve. This will need opening out slightly for the 10BA bolt.

Remove the bogie pivot plate from the fret and fold into a channel. The locating bolt can then be soldered in place from the inside of the channel. The hole in the bogie pivot plate is 2mm so I would suggest that you open it out to 2.5mm if using 10BA bolts and use the brass tube sleeve to align. This assembly can then be soldered to the pivot locating plate using the tabs and slots as an aid. See Fig. 4 below.

The pivot locating plates have lines etched at the mid points of the sides to help align them on the coach floor. The intersection of these four lines will mark the pivot centre.



Height adjustment is via pads over the top of the bolster and attached to the underside of the coach. These can be made out of plasticard or metal sheet. Ideally, if you are using plasticard, there should be a metal layer acting as the bearing surface for the pins on the bolster, 0.005" or 0.010" sheet would be fine; perhaps a scrap piece from the fret? Make sure that each of the pads is the same thickness and then the coach will sit completely level.

Notes on weighting

The bogies are designed to operate on a load of 180g. They can be used on heavier coaches but you will need to up the gauge of the primary springs. This was noted in the technical section at the beginning. On lighter coaches you should add some weight to bring the total coach weight up to around 180g with the weight evenly distributed. Include the weight of the bogies in the 180g.

Painting

I now use Halfords grey primer in a tin through an airbrush with cellulose thinners to prime just about everything, including plastics. 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.

Justin Newitt - September 2019

Suppliers List

Eileen's Emporium (brass wire, tube, nuts and bolts)
Unit 19.12 Highnam Business Centre
Newent Road
Gloucester
GL2 8DN
www.eileensemporium.com

Alan Gibson (Pinpoint bearings)
PO Box 597
Oldham
OL1 9FQ
www.alangibsonworkshop.com