BR Open Wagon Tarpaulin Bar Detailing – For Steel Ended Wooden Opens

This set of instructions covers the Rumney Models kits B.92 and OB.92. These are designed to build into an accurate and robust representation of the tarpaulin bars fitted to LMS and BR 5 plank wooden opens and Shocopens with corrugated steel ends. I intend to do something similar for wooden ended and all steel opens once I have sufficient information. They were broadly similar but the brackets used to fix them to the ends were different. The kit is sufficient for two wagons.

The layout of the two frets is exactly the same whether its 4mm or 7mm scale and so just one parts diagram is included. The dimensions of items required for the 7mm version are listed in the parts list and then will be noted in brackets throughout the instructions.

There are two types of pivoting bracket included, early and late. The early type had a bracket where the tarpaulin bar was located to the end that was separate from the hoop. On the later type the bracket was a more substantial affair and was fixed to the hoop. See Fig. 1a and Fig. 1b for details. The changeover between the two types was around 1956. You can build either two early, two late or one of each type from the fret.

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.

<u>All fold lines are through 90° with the fold line on the inside unless stated otherwise.</u>

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 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.

Materials list

A few different sizes of wire are needed to build the tarpaulin bars. Eileen's Emporium are good source for these and they do a mixed sizes pack if you don't want to buy large quantities. You will need the following sizes:

4mm

0.31mm	- Lamp irons
0.45mm	- Tarpaulin bar pivot
0.5mm	- Label board reinforcing (if required - see instructions)
0.8mm wire	- Tarpaulin bar

7mm

0.5mm	- Lamp irons
0.8mm	- Tarpaulin bar pivot
1mm	- Label board reinforcing (if required - see instructions)
1.5mm wire	- Tarpaulin bar

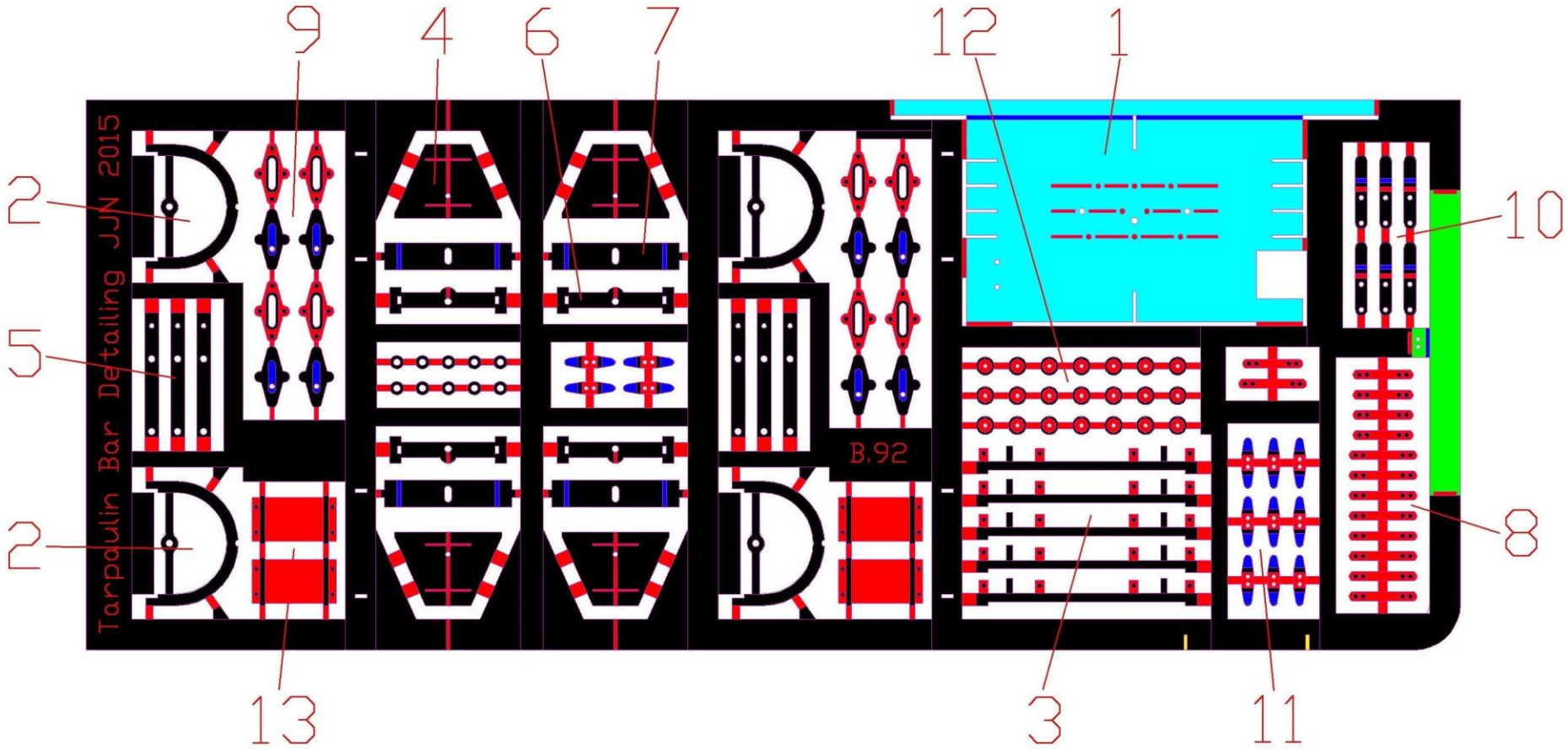
Contact details are as follows:

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

Component List

1 - Drilling jig (also shaded light blue on the parts diagram)
2 - Hoop
3 - Hoop angle
4 - Trapezoidal board
5 - Early type bar extension
6 - Later type hoop bracket
7 - Later type hoop bracket cover
8 - Trapezoidal board fixing straps
9 - Early type fixing bracket
10 - Lamp irons
11 - Rope cleats
12 - Rope winding brackets
13 - Label boards

B.92/□B.92



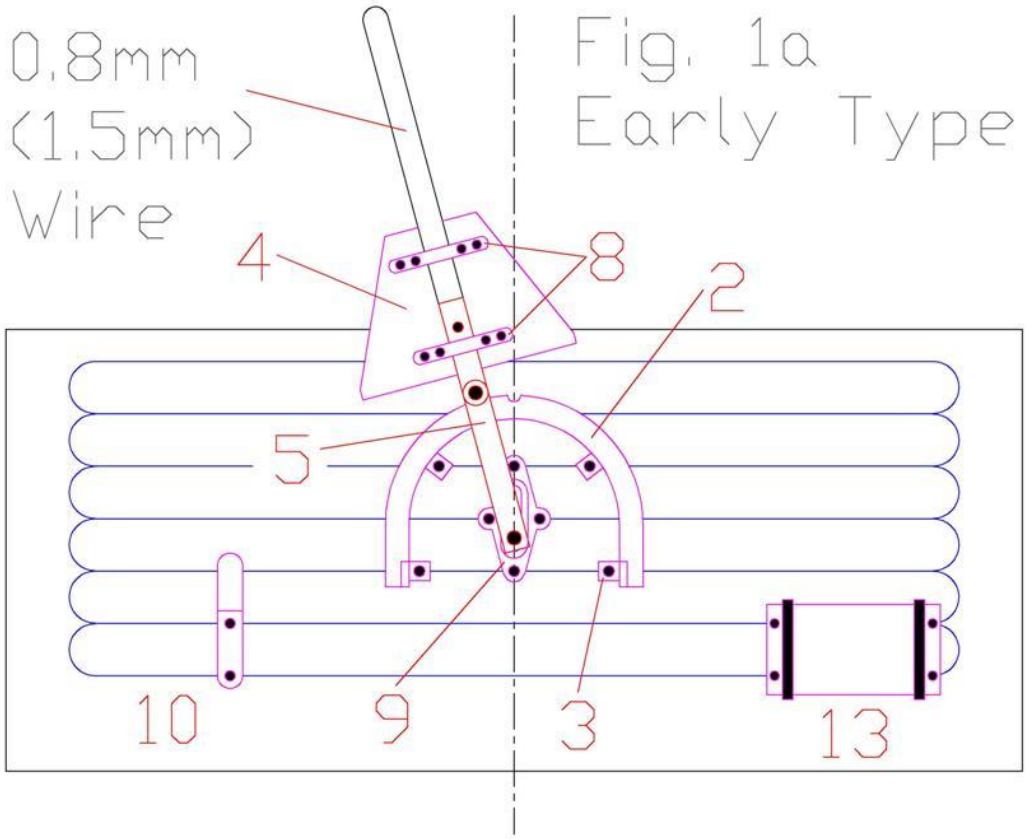


Fig. 1a
Early Type

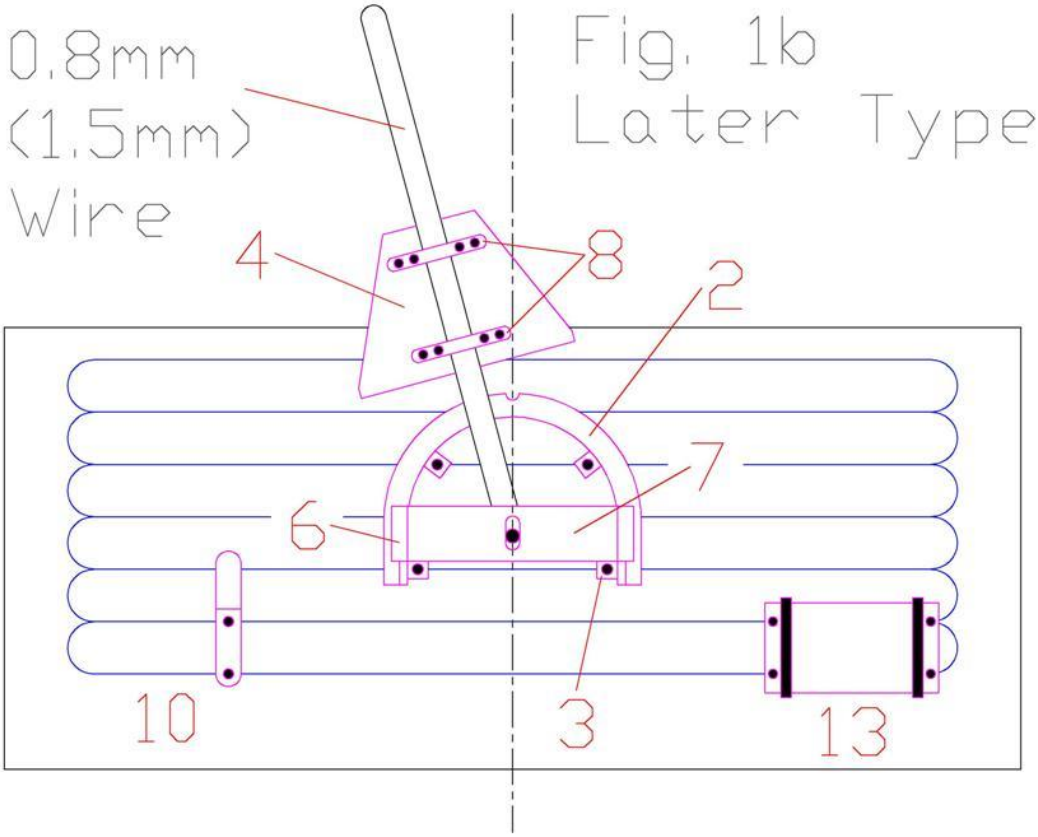


Fig. 1b
Later Type

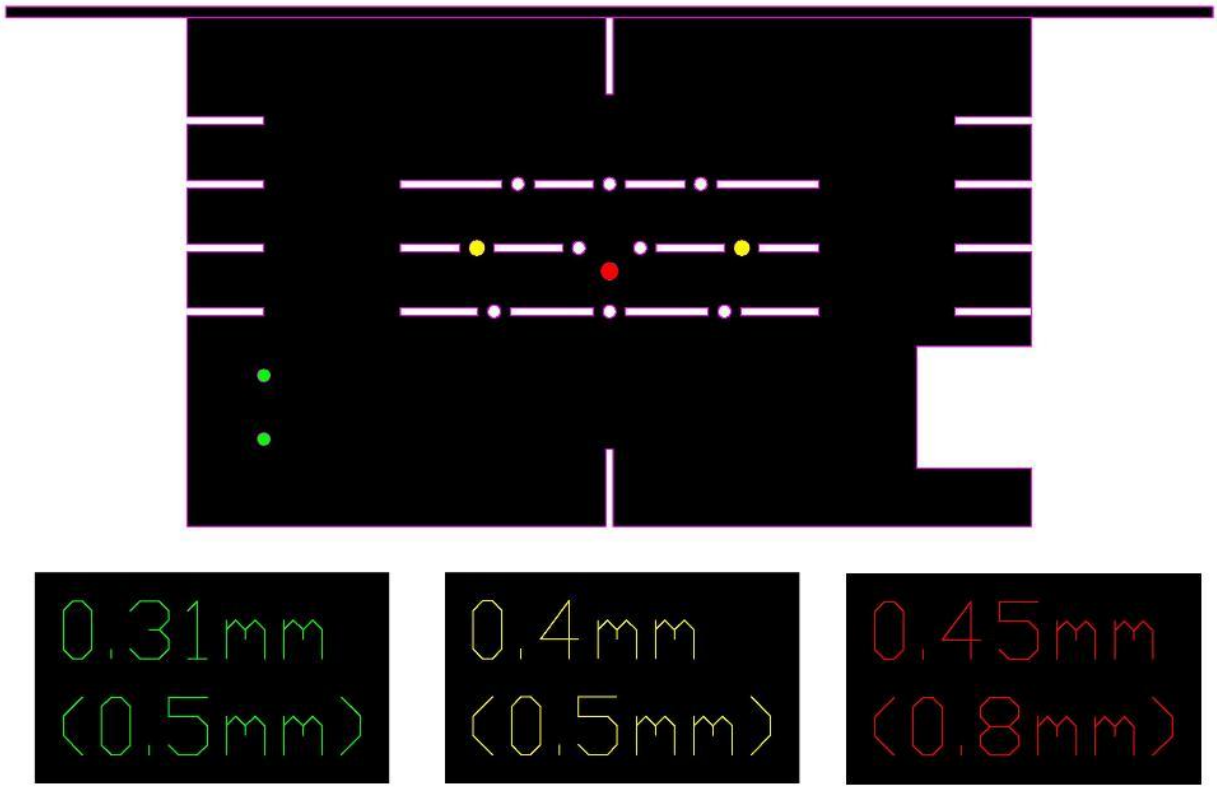
Tarpaulin bars

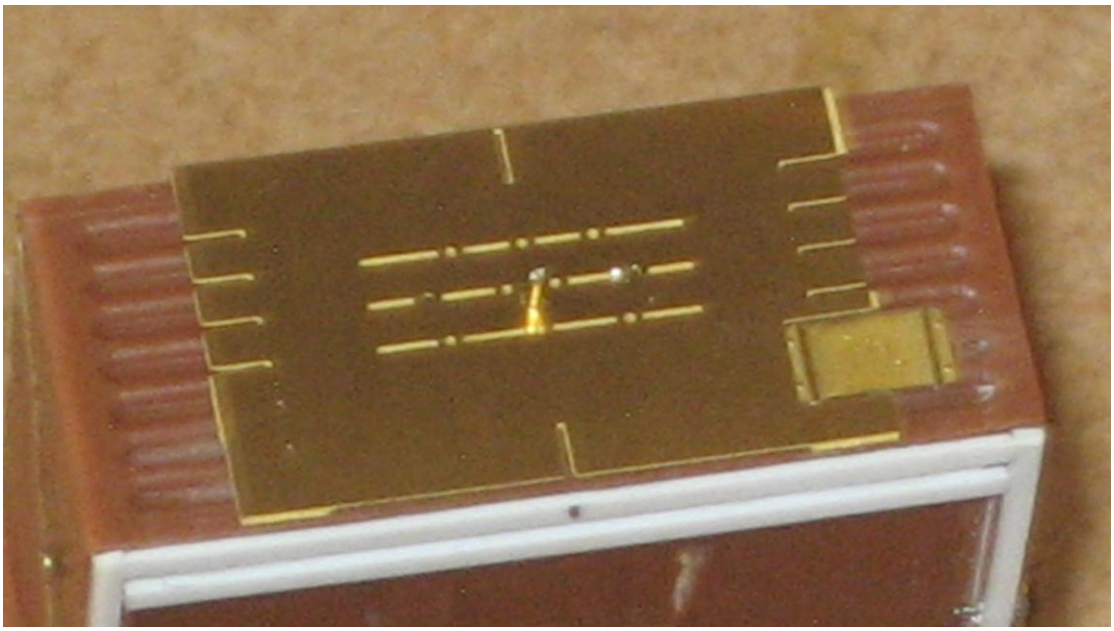
Preparation

A drilling jig (1) is included on the fret to aid the location of various items onto the ends. Before using it some preparation of the plastic ends is necessary at least in 4mm scale. The lamp irons will need removing and any hole in the centre to take the original tarpaulin bar needs to be filled. I used some plastic rod approximately 0.8mm in diameter to fill mine. Once glued in place this was tidied up. If using a Bachmann 4mm model you may wish to remove the label boards as well.

Remove the drilling jig from the fret. Fold the top over. Place the drill centrally on the wagon end and drill holes for the tarpaulin bar pivot, hoop locating points and lamp irons. The top on drilling jig is 32mm (56mm) long. This is how wide the ends are supposed to be and will help centralise the jig. I drilled the 0.45mm (0.8mm) hole first and then used a length of 0.45mm (0.8mm) wire to make sure the jig didn't move before drilling the other holes. See Fig.2 and the photo that immediately follows. Repeat for the other end.

Fig. 2



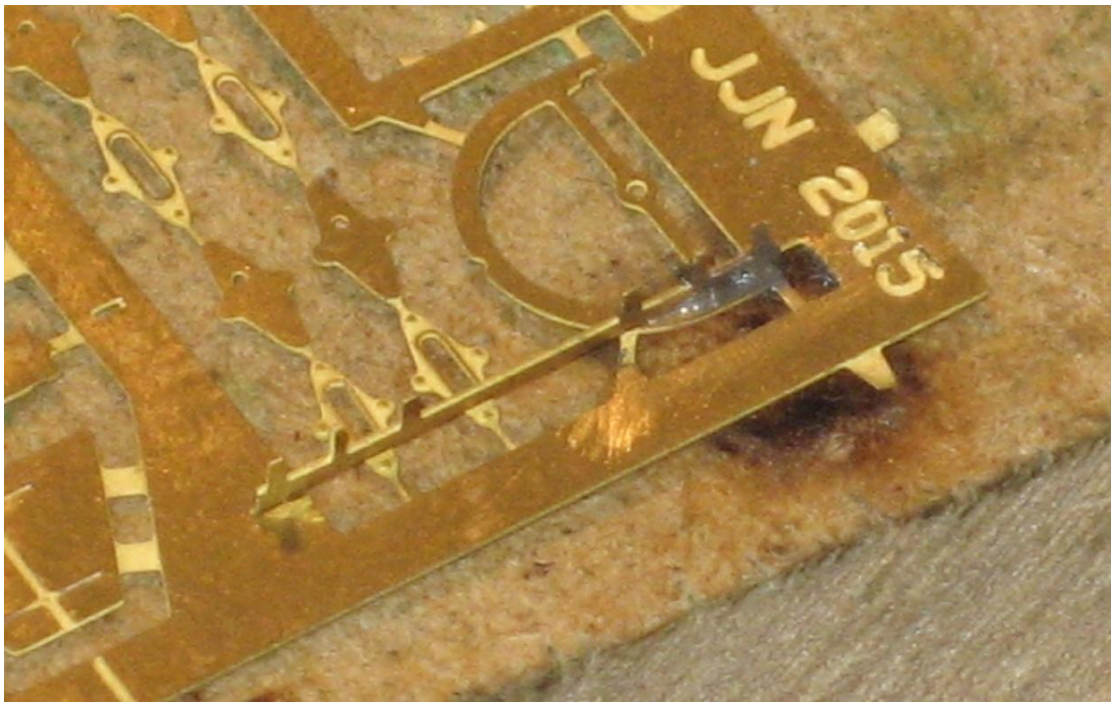


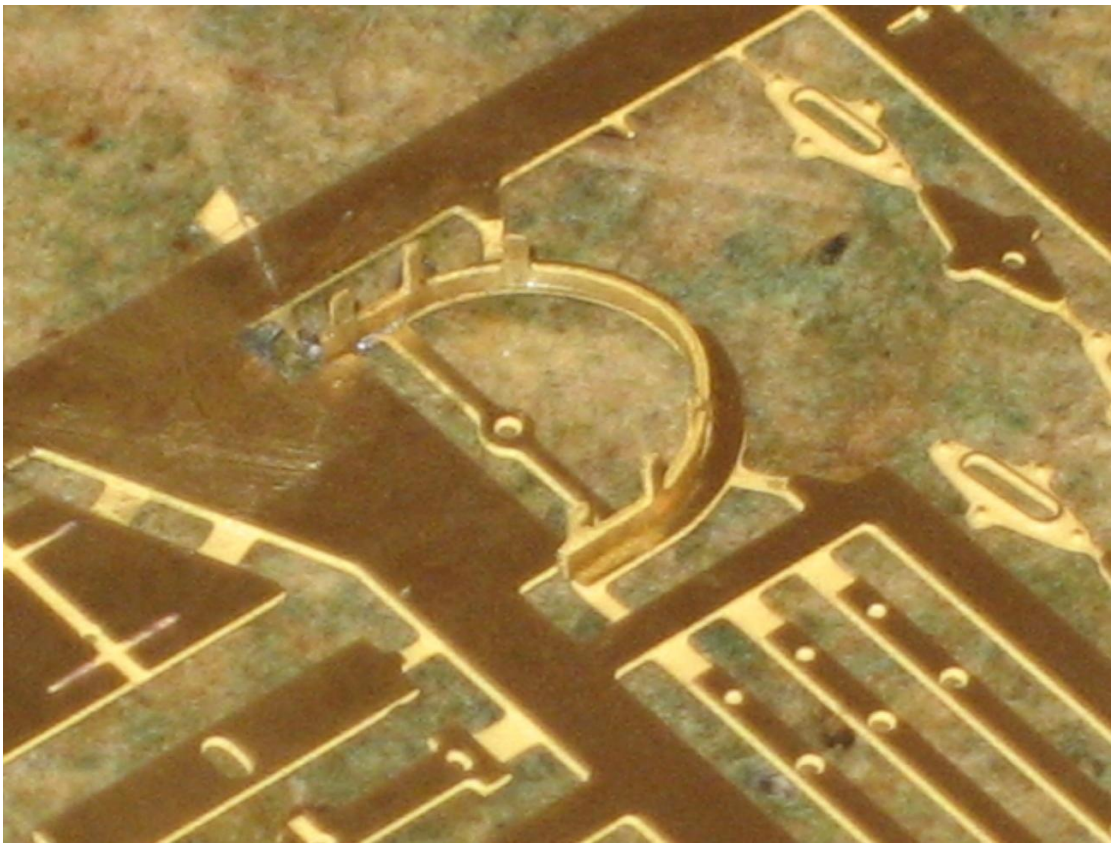
Hoops

The distinctive hoops that form part of the tarpaulin bar assembly are etched in two parts. There is the semi-circular hoop (2) itself and the hoop angle (3). This part is designed to be assembled with the semi-circular hoop still attached to the fret.

Remove the hoop angle from the fret and tidy up and connecting tags. Note that there are six tongues coming off one side of the hoop angle. Four of these little tongues are half etched and each has a rivet on them. These will represent the fixings for the hoop on the wagon end. The two other tongues are full thickness and will help locate the hoop onto the wagon end.

The hoop angle needs to be attached to the hoop itself. There are two small tabs at each end of the hoop angle on the opposite side to the tongues. One of these locates into a notch in the hoop and the other into a slot in the fret. The hoop angle can be tack soldered in place and then bent around the inside of the hoop until the tab on the other end locates into the notch on the other side of the hoop. Note that the rivets on the half etched tongues should be on the <u>inside</u> of the hoop. Make sure that the hoop angle isn't exerting any outward pressure on the hoop and solder in place. The following two photographs should make this paragraph a lot clearer!





Once the angle is soldered in place remove from the fret and clean up any connecting tags.

If you are constructing a set of early type brackets remove the connecting bar between the two sides of the hoop.

Fold over the four tongues that represent the fixing points for the hoop.

If you are constructing a later type bracket then use the drilling jig to drill holes into a piece of scrap wood. Insert the hoop into the two 0.4mm (0.5) holes created and then insert a length of 0.45mm (0.8mm) wire through the connecting bar and into the wood. Solder the wire in place. Trim at the back so that it projects about 1mm beyond the angle. Leave about 3mm (5mm) at the front for now.

Early Type

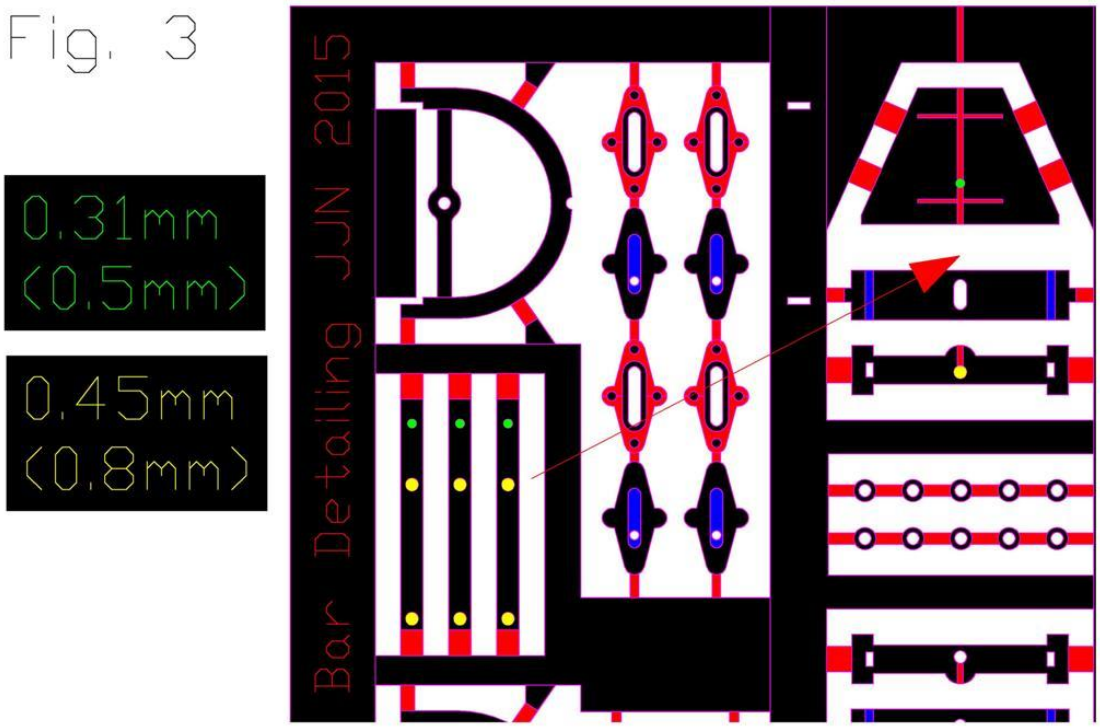
The first thing that needs to be done is to form the bar itself. This is made from a length of 0.8mm (1.5mm) wire. The magic recipe for the length of wire is as follows:

Length over body + 19mm (33mm)

So for a standard 17’6” long open wagon you will need a length of wire 89mm (155.5mm) long. This will obviously be shorter for Shocopens.

The ends will need to be carefully curved. There is a curved template on one corner of the fret. On the longest edge that joins this curve there are two half etched markers (these are shaded yellow on the parts diagram). For the early type the end of the wire should correspond with the marker nearest to the corner. Repeat for the other end.

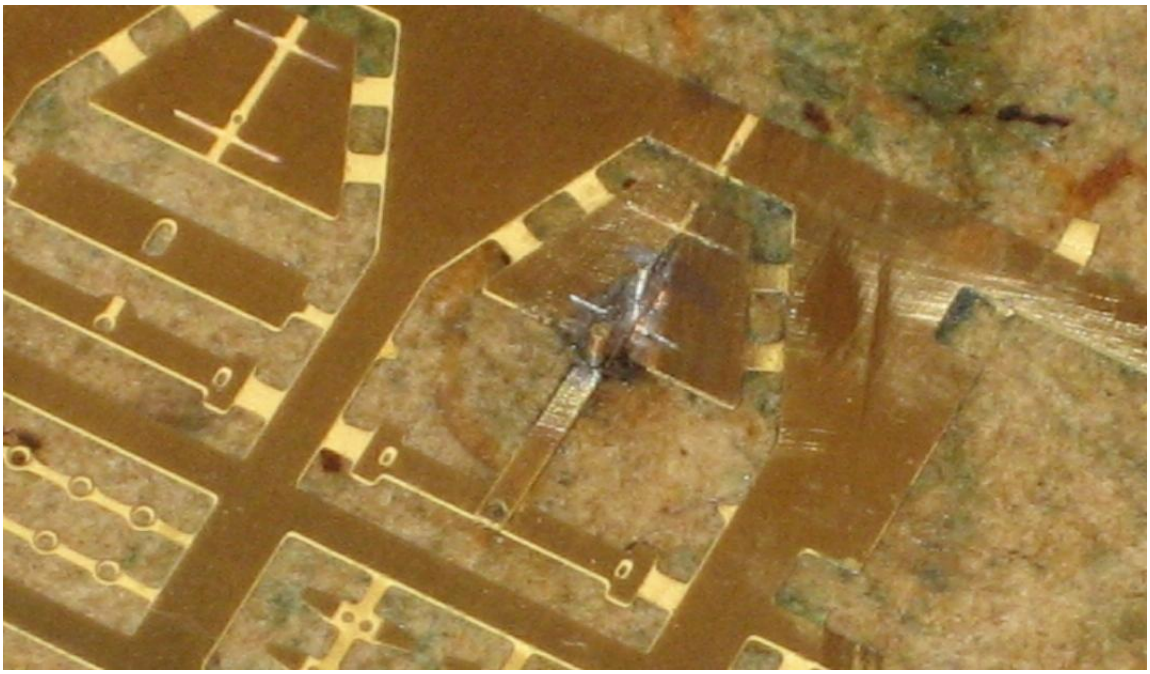
The basic idea for attaching the ends to the bar is to place the fret on a piece of wood so that one of the longer edges of the fret is near the edge of the wood, drill appropriate holes through the trapezoidal board and the later type hoop bracket (6) (see Fig. 3), solder the early type bar extension (5) to the trapezoidal board along with the tarpaulin bar and finally add the fiendish trapezoidal board fixing straps (8). The whole thing can then be removed from the fret and cleaned up.



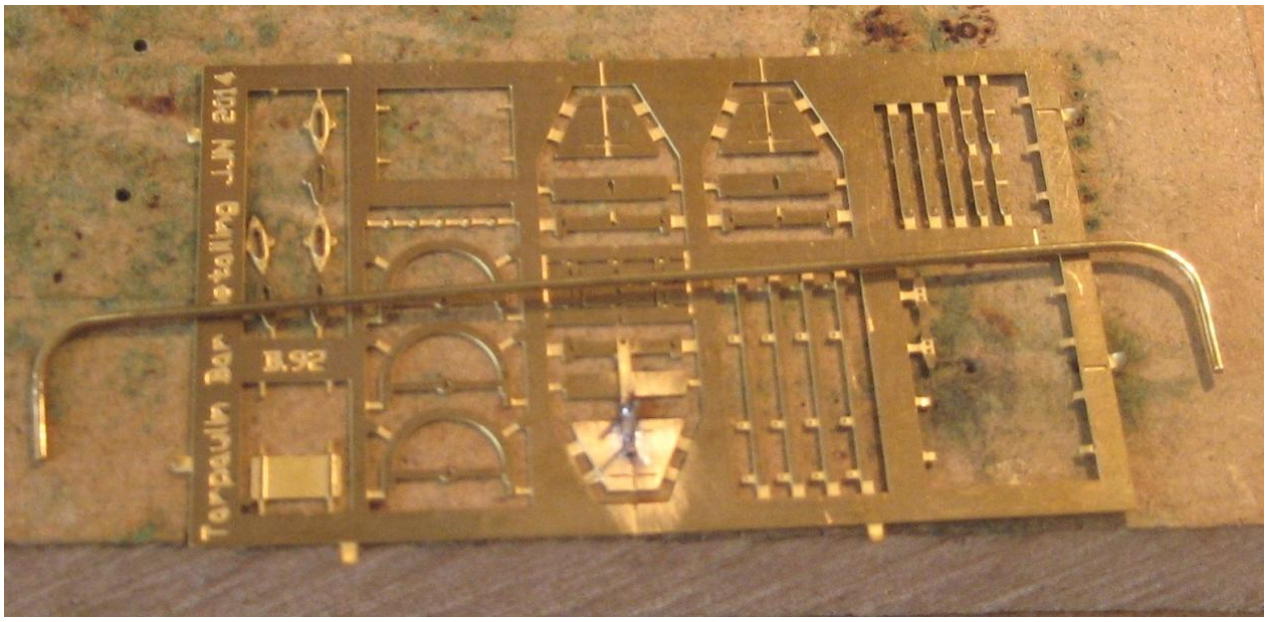
Make sure the early type bar extension (5) can accept the wire sizes shown in Fig. 3 then remove from the fret and clean up the connecting tags.

Place the fret near the edge of a piece of wood and drill 0.3mm (0.5mm) and 0.45mm (0.8mm) holes into the wood using the trapezoidal board and later type hoop bracket as a drilling jig as shown (see Fig. 3).

Use short lengths of 0.31mm (0.5mm) and 0.45mm (0.8mm) wire and the holes just drilled to pin the early type bar extension to the trapezoidal board. Solder together as per the photo below.

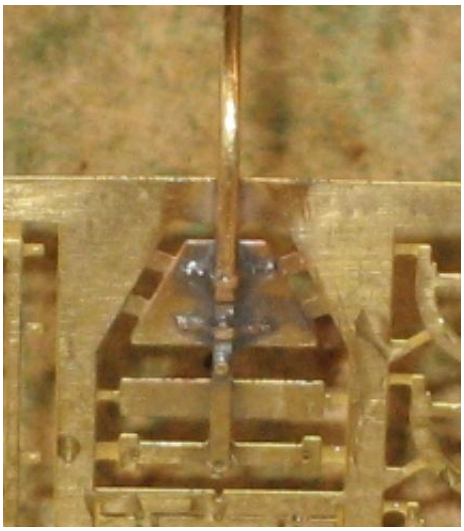


Trim the wire back so that it protrudes approximately 0.25mm (0.4mm) from the bar.



Solder the tarpaulin bar to the trapezoidal board using the half etched lines to locate it. Make sure that the bar is at right angles to the etchings. Time taken to make sure this is the case now will easily be saved later trying to adjust it when the two are firmly attached.

The trapezoidal board fixing straps (8) can now be soldered in place. For the early type brackets use one short and one long. The long strap goes over the wire bar and the short over the etched extension. There are half etched lines on the trapezoidal board to aid alignment. I found using a paste flux useful here. It would hold the strap in place sufficiently while forming it around the wire and etched bar. Use the tiniest amount of solder.



Once everything is soldered in place the whole affair can be removed from the fret and any connecting tags tidied up. Repeat for the other end.

The early type fixing brackets (9) need to be assembled. There are two parts to this with two brackets in each ‘strip’ on the fret. Fold them double so that the half etched side with the raised detail on is on the outside. Drill a 0.45mm (0.8mm) hole into a piece of wood and insert a length of 0.45mm (0.8mm) wire into it. Place the bracket onto wire and solder everything together. You will need to trim the wire so that there is approximately 1mm (1.75mm) on the back and 2mm (3.5mm) on the front. These brackets can then be glued onto the ends using the central hole to align them.

The hoops can now be fixed onto the ends. Use the two long tongues to locate them into the two predrilled holes either side of the central bracket.

The tarpaulin bars can then be fitted onto the brackets. They may well need tweaking to get a good fit against the hoops. I found a pair of round jawed pliers helpful for this. If you want to be prototypical put a couple of bends into the tarpaulin bar!

Later Type

As with the early type you need to form the bar itself. This is made from a length of 0.8mm (1.5mm) wire. You will need to drill a 0.45mm (0.8mm) hole through the wire in order to get the bar to pivot. To do this you need to flatten out the ends using a pair of sturdy pliers or a vice before drilling through.

The following recipe for the length of the bar is measured between the hole centres so the total length of wire will need to be about 3mm (5mm) longer.

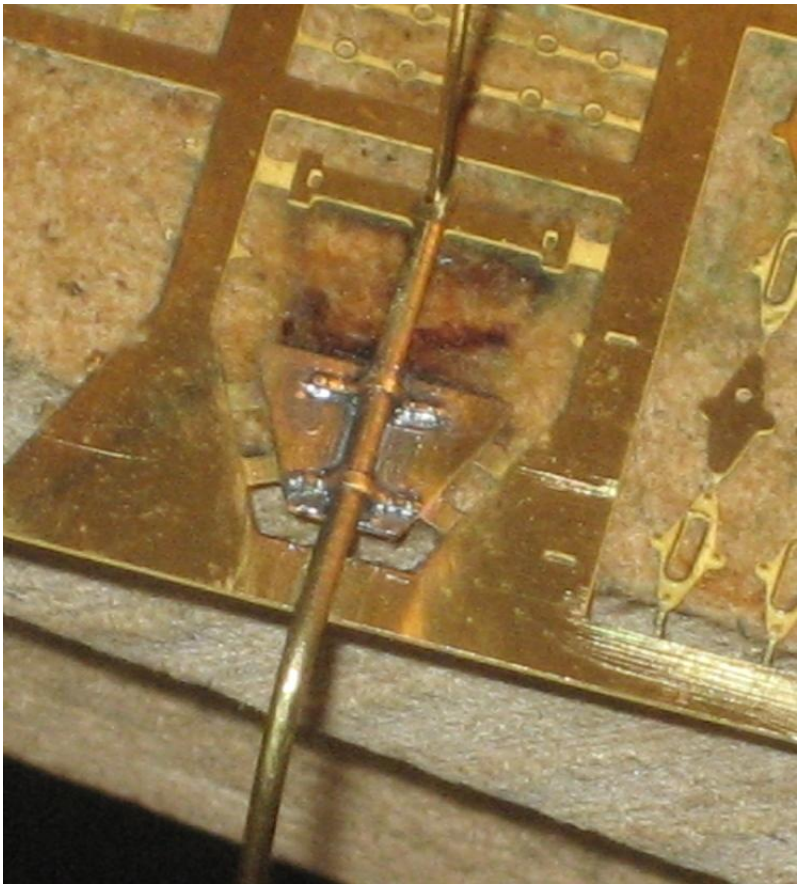
Length over body + 35mm (61mm)

So for a standard 17’6” long open wagon you will need a length of wire 105mm (183.5mm) long. This will obviously be shorter for Shocopens.

The ends will need to be carefully curved. There is a template on one corner of the fret. On the longest edge that joins this curve there are two half etched markers (these are shaded yellow on the parts diagram). For the later type the hole in the end of the wire should correspond with the marker furthest from the corner. Make sure that hole in the wire is aligned correctly before making the bends. Repeat for the other end.

Place the fret on the edge of a piece of wood and drill a 0.45mm (0.8mm) hole through the later type hoop bracket (6). Insert a length of 0.45mm (0.8mm) wire through the bracket and into the hole. Feed one end of the tarpaulin bar onto the wire and solder onto the trapezoidal board using the half etched line to locate it making sure that the tarpaulin bar is at right angles to the fret. Time taken to make sure this is the case now will easily be saved later trying to adjust it when the two are firmly attached. Don't solder the bracket to the wire used to locate the bar in place.

The trapezoidal board fixing straps (8) can now be soldered in place. For the later type brackets use two of the longer ones. There are half etched lines on the trapezoidal board to aid alignment. I found using a paste flux useful here. It would hold the strap in place sufficiently while forming it around the wire and etched bar. Use the tiniest amount of solder.



The whole affair can be removed from the fret and any connecting tags tidied up. Repeat for the other end.

The later type hoop bracket (6) can now be removed from the fret and soldered in place over the connecting bar.

Once this is done fit the hoops to the end of the wagon using the two long tongues to locate them into the two predrilled holes either side of the central bracket.

The tarpaulin bars can then be fitted onto the wire extending from the hoops. They may well need tweaking to get a good fit against the hoops. I found a pair of round jawed pliers helpful for this. If you want to be prototypical put a couple of bends into the tarpaulin bar!

Once happy with the fit the later type hoop bracket covers (7) can be removed from the fret and soldered in place. They will need folding up at the ends and there are slots and tabs to aid alignment. Once fitted the wire extending from the hoop can be trimmed back leaving approximately 0.25mm (0.4mm) extending from the hoop bracket cover.

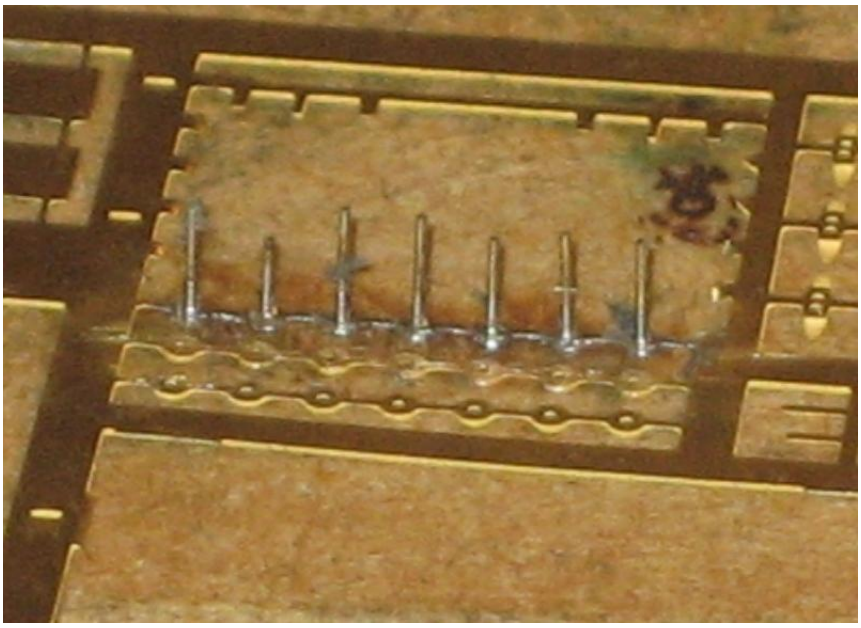
Detailing

Lamp Irons

Lamp irons (10) are included. Use one whilst still attached to the fret to drill a pair of 0.3mm (0.5mm) holes into a piece of wood. Make sure that the lamp irons can accept 0.31mm (0.5mm) wire, remove from the fret and fold up. Insert two lengths of wire through the holes in the lamp irons and into the holes drilled into the wood. Solder together and tidy up the front so that the wire represents bolt heads. Trim the back so that there is about 0.75mm (1.3mm) of wire protruding. These can then be glued in place. The wire pins will result in a strong joint to the body.

Rope Fixings

There are two sorts of rope fixings included a butterfly type cleat (11) and a round one (12) that was used for winding rope around. The butterfly type was quite common on later builds and the round type (which had its origins at Ashford works) could be found on later built Shocopens often used in conjunction with the butterfly type. Both are designed to be fixed on using 0.31mm (0.5mm) wire. Use the parts whilst still attached to the fret to drill a series of 0.3mm (0.5mm) holes into a piece of wood. Short lengths of 0.31mm (0.5mm) wire then be fed into the holes in the wood and soldered to the rope cleats. The wire can then be tidied to represent bolt heads. Leave about 0.75mm (1.3mm) protruding from the back. Holes can then be drilled into the wagon using a 0.3mm (0.5mm) drill bit and the cleats glued in place (there is a drilling jig for the butterfly type on the fret. This is shaded green on the parts list).



Label Boards

Label Boards (13) are also included. These can simply be removed from the fret and glued in place. I did solder a short length of 0.5mm (1mm) wire to the back of them to give a greater gluing area. You may think this unnecessary. If constructing in 7mm check the depths of the grooves in the corrugations to check the wire size needed.

Painting

I 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.

Finally

Thanks must go to Tony Comber and the Dean Forest Railway for letting me measure up some of the wagons in their care which have greatly helped in the preparation of these kits.

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 - Revised February 2017