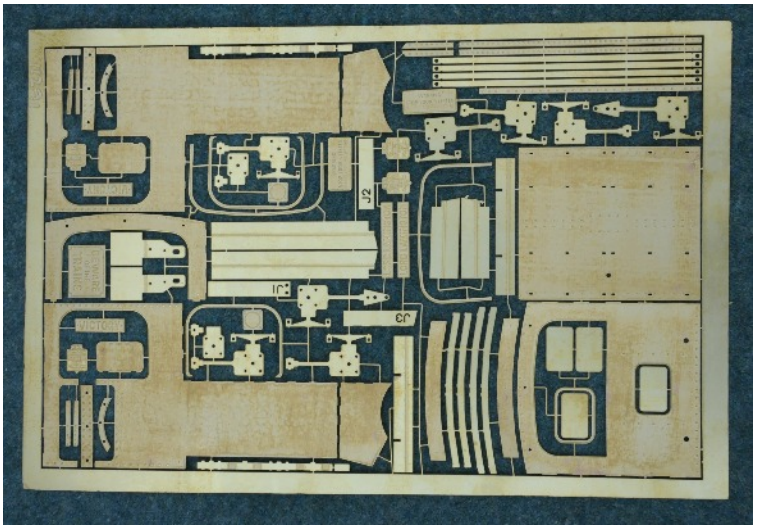
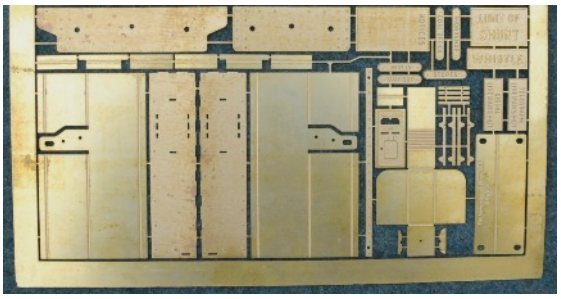
“ Victory” - assembling the etched parts made from 0.9 mm brass

This final chapter in the guide provides the instructions for assembling the etched brass parts forming the cab, water tanks and detail pieces. It also describes assembly of the dummy pony truck axle boxes, which you may have decided to perform during construction of the frames. The guide recommends soft soldering the body shell and, depending on your ability and confidence, applying the detail parts using soft solder, solder paste, epoxy, super glue or a combination.

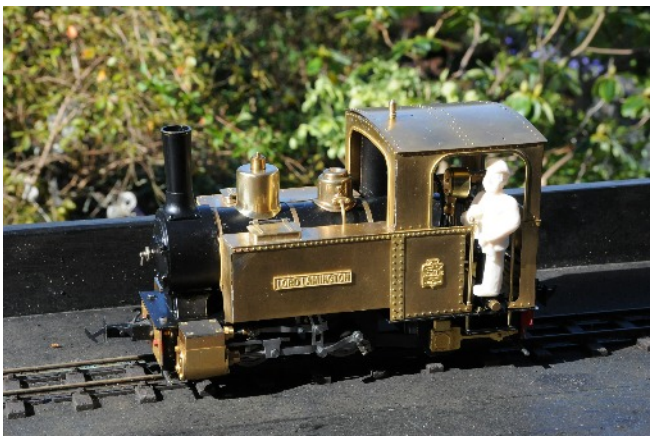
Wooden jigs to aid construction are also described; preparation to make one of the jigs was referred to in chapter 1 of the guide, covering assembly of the frames.



This shows the large sheet of etched brass parts.

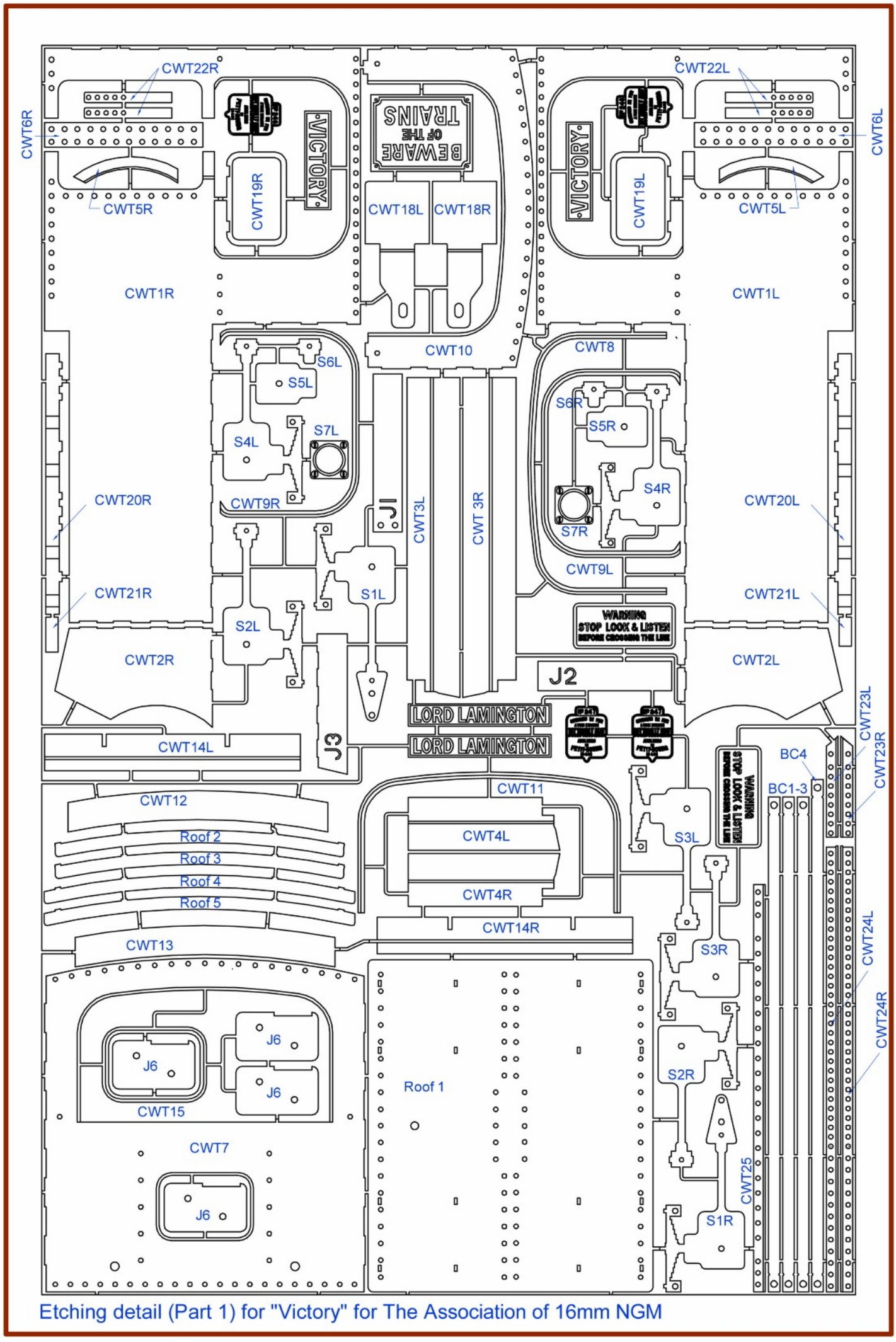


This shows the smaller sheet for the water tank parts, buffer beams, rear bracket and extra parts including the post box.



Note that parts have a left and right suffix identifying to which side of the locomotive they apply. Parts suffix “L” are on the left hand side of the loco looking forward and those suffixed “R” are on the right hand side. Parts lacking a suffix form a front or rear face, e.g. the cab front and back.

Before you start have a look at the three models. The top left view shows the model unpainted. Lower left is a finished model as “Victory” and a War Department version is on the right.


CWT22R
CWT22L
CWT6R
CWT6L
CWT5R
CWT5L
CWT19R
CWT19L
VICTORY
VICTORY
BEWARE OF THE TRAINS
CWT18L
CWT18R
CWT1R
CWT1L
CWT10
CWT8
S6L
S5L
S4L
S7L
S6R
S5R
S4R
S7R
CWT9R
CWT9L
CWT20R
CWT20L
CWT21R
CWT21L
CWT2R
CWT2L
J1
CWT3L
CWT 3R
S1L
S2L
J2
J3
LORD LAMINGTON
LORD LAMINGTON
WARNING STOP LOOK & LISTEN BEFORE CROSSING THE LINE
CWT14L
CWT12
CWT11
CWT4L
CWT4R
CWT14R
CWT13
Roof 2
Roof 3
Roof 4
Roof 5
S3L
S3R
S2R
S1R
CWT23L
CWT23R
BC4
BC1-3
CWT24L
CWT24R
CWT25
J6
J6
J6
J6
CWT15
CWT7
Roof 1
Etching detail (Part 1) for "Victory" for The Association of 16mm NGM

Part Lists from both sheets of etches.

Cab & water tanks

CWT1L & 1R	Outside
CWT2L & 2R	Front edge
CWT3L & 3R	Rear angle support, rear to sides of cab
CWT4L & 4R	Front angle supports, front to sides of cab
CWT5L & 5R	Front radius angle
CWT6L & 6R	Plate of rivets
CWT7	Rear cab
CWT8	Front frame to fit on CWT 7
CWT9L & 9R	Frame for cab sides
CWT10	Front cab
CWT11	Front frame to fit on CWT 10
CWT12	Front cab, inside plate above
CWT13	Rear cab, inside plate above
CWT14L & 14R	Location & stiffening on top of cab sides
CWT15	Frame rear cab
CWT16L & 16R	Top of water tank
CWR17L & 17R	Inside and underside of water tank
CWT18L & 18R	Cover / bracket on lower section on water tank
CWT19L & 19R	Water tank filler lid
CWT20L & 20R	Water tank filler frame
CWT21L & 21R	Water tank filler frame connector
CWT22L & 22R	Water tank filler lid "hinge"
CWT23L & 23R	Water tank front "angle"
CWT24L & 24R	Water tank & cab side "angle"
CWT25	Cab rear & edges "angle"
CWT26	Bracket, cab to floor
CWT27	Optional support for receiver if it is not fitted in the RH water tank

Roof

Roof 1	Roof
Roof 2	Roof stiffening - front (Inside)
Roof 3	Roof stiffening - rear (Inside)
Roof 4	Roof stiffening - front
Roof 5	Roof stiffening - rear

Buffer beams

B1F	Front buffer beam
B2R	Rear buffer beam
B3R	Rear buffer beam angle

Pony truck external parts.

S1L & 1R	Spring assembly first
S2L & 2R	Spring assembly second
S3L & 3R	Spring assembly third
S4L & 4R	Spring assembly fifth
S5L & 5R	Spring assembly first over bearing
S6L & 6R	Spring assembly near the rear assembly
S7L & 7R	Spring assembly over bearing

Boiler clamps.

BC1-3	Clamp for the first 3 locations
BC4	Clamp for the rear to the boiler to locate the cast mounting foot.

Jigs

J1	Jig to locate CWT24L & 24R (Cab)
J2	Jig to locate CWT24L & 24R (Water tank)
J3	Jig to locate CWT23L & 23R (Water tank front)
J4	Jig to assist hand rails
J5	Jig to assist hand rails
J6	Jig to assist water tank fillers.

Additional items

"Victory" and No 246 plates

"Lord Lamington" and No 247 plates

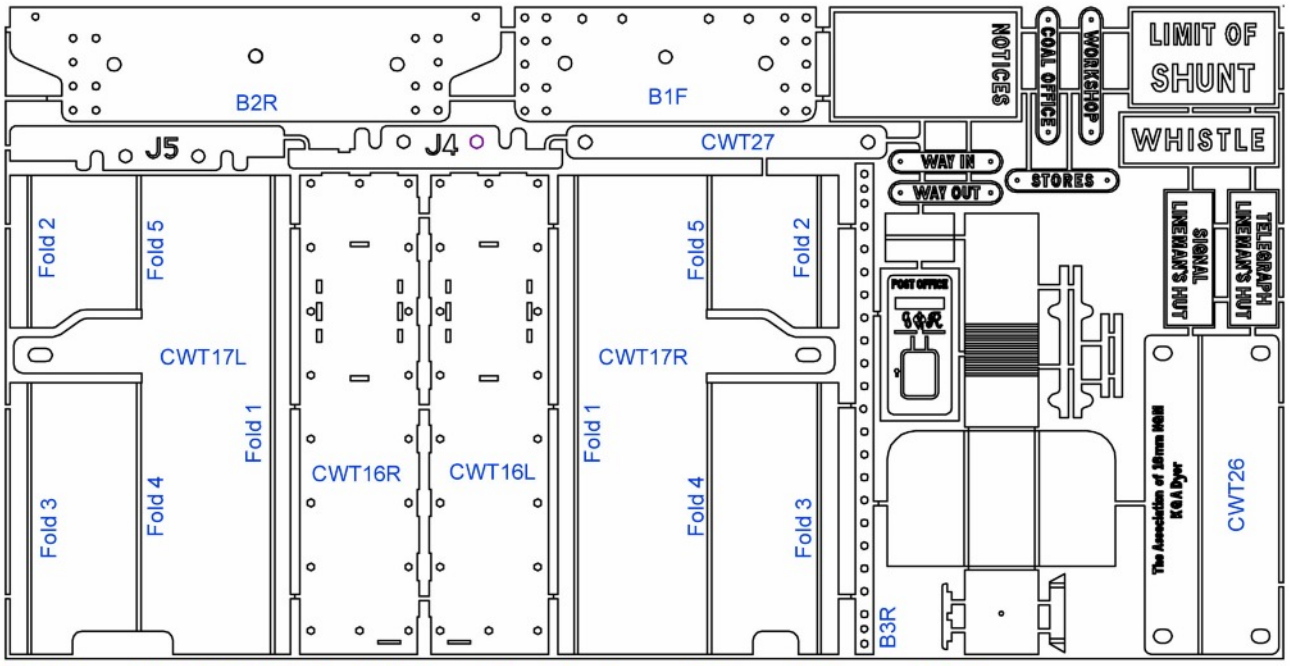
Kit to make a post box

The following plates:

Notice
Coal Office
Workshop
Way In
Way Out
Stores
Limit of Shunt
Whistle
Telegraph Lineman's Hut
Signal Lineman's Hut
Beware of the Trains
Warning Stop Look & Listen

Etched area is from a 0.9mm brass sheet (457.2mm x 304.8mm & 304.8 x 144)

Design - Keith G A Dyer Photo-Etching - Grain and Hodder Ltd



Etching detail (Part 2) for "Victory" for The Association of 16mm NGM

Before you start on the brass etched assembly here are the basic tools and items that I found very helpful.

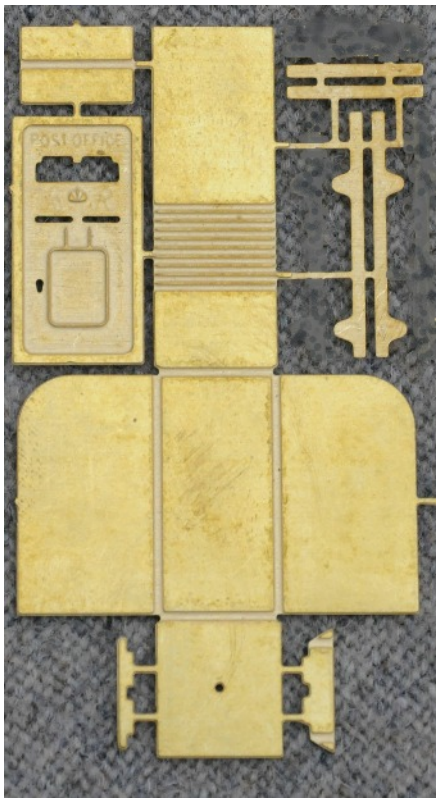
The pieces of wood are used to assist in soldering the joints. Try not to set them alight and make sure you have some spares in case you do.

The length of metal shown above is 25 x 10 x 150 mm and was very useful. It assisted when bending parts in conjunction with a vice. The hole and slot shown are not required as I had previously used this "tool" on a different project. An engineer rarely throws anything away!

The additional items that should be used are as follows:

Miniature files
Soldering iron
Solder (Multicore 60/40 Tin / Lead, 0.7mm or 1.0mm dia is ideal)
Bakers flux fluid
Sand paper
Miniature Gas torch (as shown) - at least one of the early builders used a Sievert gas torch with a fine flame, which was ideal when soldering the body shell
Super glue
2-part epoxy resin, ideally one which sets in 30 minutes, giving you time to position parts to your satisfaction
Emery cloth

Post Box

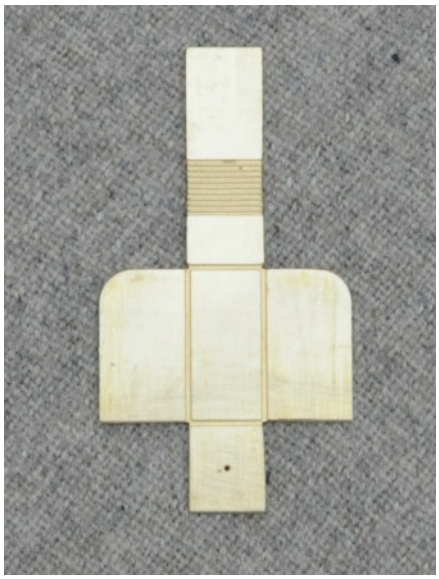


The post box is provided as a practice item in case you have never made anything like an etched assembly before. Completing this will give you confidence to assemble the cab/water tank successfully. On the left are the parts to make the post box. Each item should be carefully removed and the edges that join each item together gently smoothed. This will be required for other items as well.

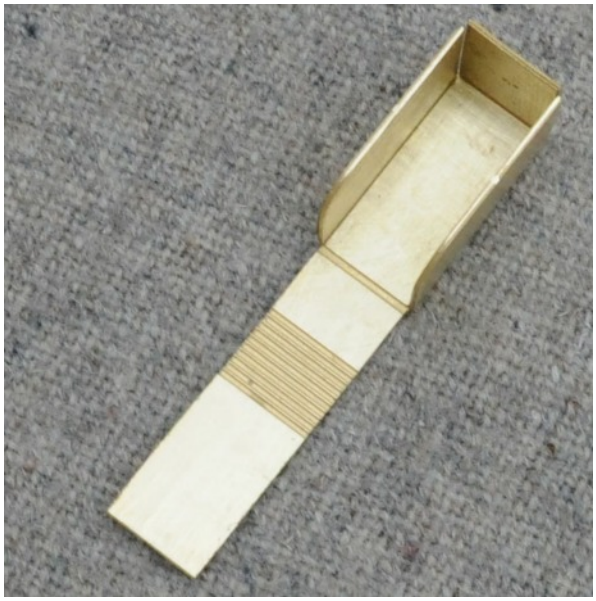
Fold the post box inwards along the etched fold lines as shown. Note the multiple fold lines on the longest leg of the etched part. These enable you gently to form an even curve.

Once the box has been formed, flux the junction between adjacent folded parts and soft solder together. The narrower the gap at the junction between adjacent folded parts, the more readily the solder will flow.

Once the box has cooled, clean the front face (the curved face is the back) and tin it so that the etch front can be sweated into place.



Select the post box as shown.



Post Box

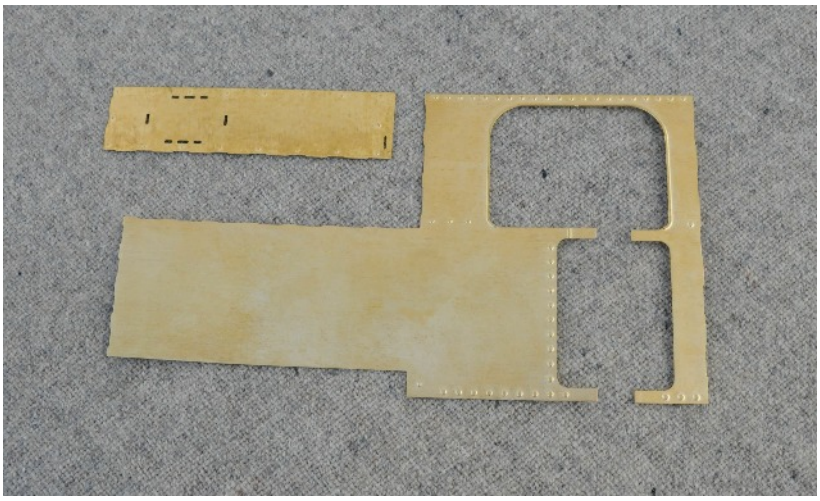
Locate the etched front of the post box and the two small parts which comprise the cover across the box's posting aperture and a second, smaller cover below the opening. The larger cover will need folding inwards along the fold lines and engages with the front using the two tongues on the cover. The smaller cover engages in the same way.

Before uniting the covers with the etched front, tin the rear face of the front ready to be sweated to the body of the box. When cooled, turn the etched front over, engage the covers via their tongues with the cover, flux the parts to be joined and solder in place. Resist the temptation to use a lot of solder, because more solder will flow into the tongues when the etched front of the box is sweated into place.

Finally when the etched front assembly is cool enough to handle, place it over the box and gently heat the assembly until the solder between the face of the box and the back of the etched front flow together.

Finally, clean off all traces of flux as its corrosive action will continue even after the assembly has cooled down.

The Cab and Water Tanks

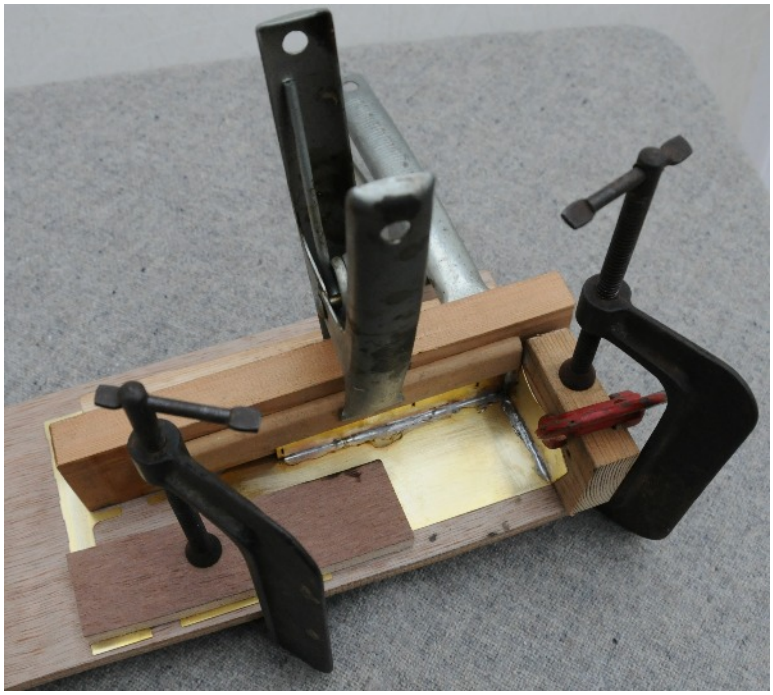


First of all, separate CWT1L & CWT16 for the left hand side of the cab and top of the water tank from the body of the etch. Carefully smooth the edges where the locating tabs have been cut away. This is applicable to all items as they are removed from the fret but will not be repeated.

Before soldering, clean the faces to be joined so that the solder is able to flow and successfully join the parts. You will not achieve a good soldered joint unless the edges to be joined have been cleaned very carefully.

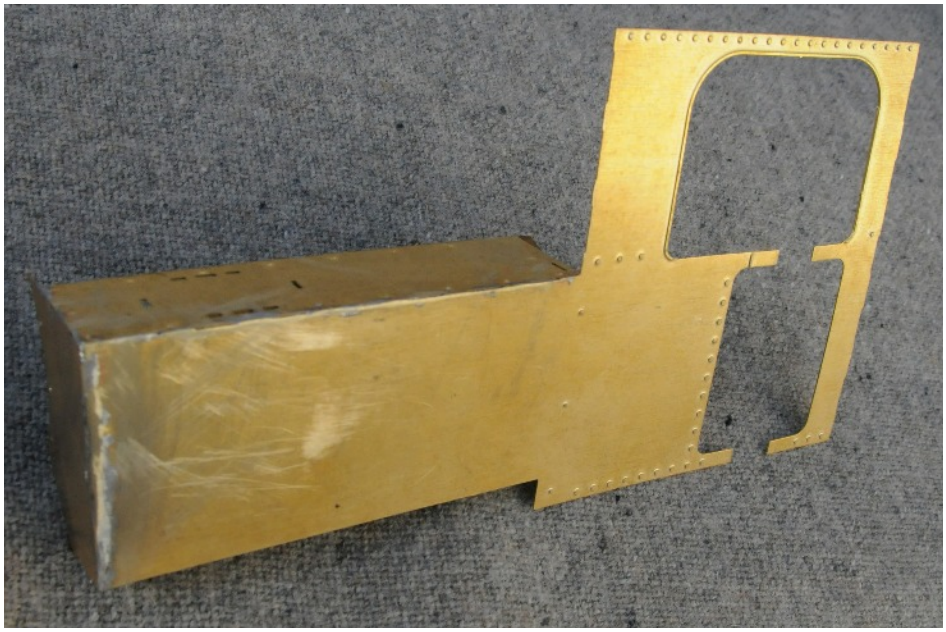
There are 2 ways to approach soldering CWT1L to CWT16L. The first method, shown in the picture on the left, is to clamp CWT1L & CWT16L using the locating tabs to ensure that they are positioned correctly and solder them together. Note the use of the wooden former to hold the clamped parts in place. Take care that the “bolts” on the top of the water tank are not lost by being flooded with excess solder.

Alternatively, as shown below, the water tank front, CWT2L, can be soldered to CWT1L & CWT16L in one operation. You will need to make a small jig, as shown below, to hold all three parts in place whilst you solder them together. The advantage of this approach is that all soldering can be done from the inside of the water tank, which will minimise the risk of getting solder on the fine detail of the tank top.

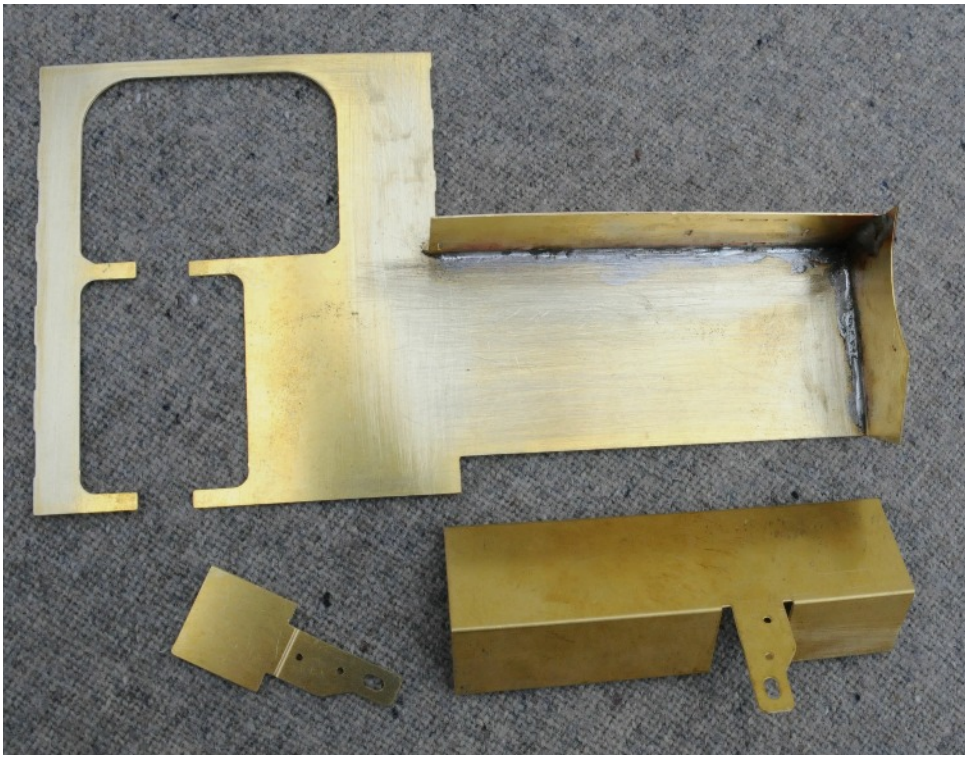


Regardless of which method you use, when soldering CWT2L to CWT1L & CWT16L, ensure that the locating tabs align. Note the use of scrap wood to hold the parts in place to be soldered. It will probably be easier using gas and a fine flame than using a micro gas burner or electric soldering iron as the heat will spread and the solder will run more readily. When the brass turns pale pink it should be hot enough for the solder to run. Use Bakers Fluid as a flux but do clean it off the work and your tools afterwards. Don’t worry if the wood burns a little - you will only use it once more at the most. If it gets burnt, and its edge is no longer true, throw it away and use a new piece.

CWT1L, CWT2L & CWT16L are now a completed assembly. I suggest that any excess solder is removed with emery cloth after the assembly has cooled and is completely rigid. Soft solder, as its name suggests, is soft, so a sharp, narrow wood chisel, scalpel or craft knife can be used with care to pare off any surplus. If done slowly and carefully this can be more effective that trying to sand a blob of solder away. If you have soldered the assembly together from inside the water tank then the opportunity for excess solder to have escaped will have been minimised.



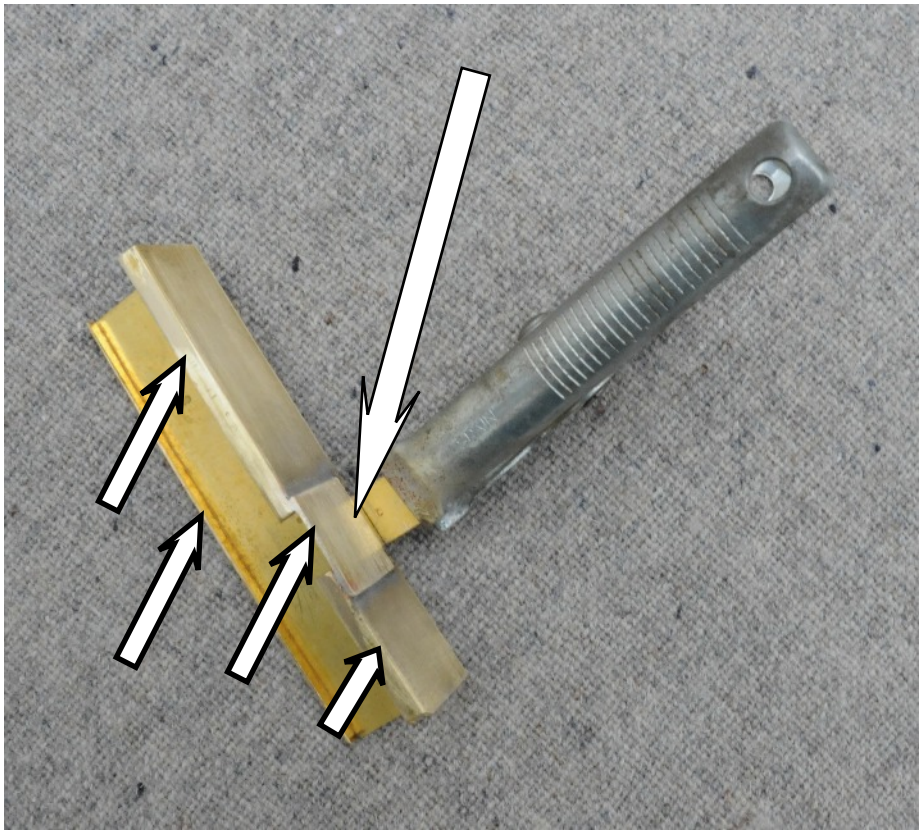
The next step is the preparation of the inside / lower water tank and its support bracket. This will provide the completed tank with a floor to support electrical items and will stiffen the water tank and its joint with the cab (CWT1L) when completed. This shows the additional items: CWT17L & CWT18L (CWT17L is shown already folded, which is covered on the next page).



CWT17L & CWT18L are best folded in a vice. Protect the jaws of the vice to avoid damage to the components being formed. Leave space for the bend to form - the etched fold line needs to be a little above the line of the jaws or protective material being used. CWT17L needs to be formed at a right angle. Once formed, offer it up to the water tank assembly to ensure that a square box is being created and, critically, the outside edge of CWT17L is flush with the inside edge of the water tank top, CWT16L. Failure to do so may make the aperture within the water tank too small to accommodate the battery pack (if radio control is being installed), which I recommend is fitted on the left hand side of the loco.

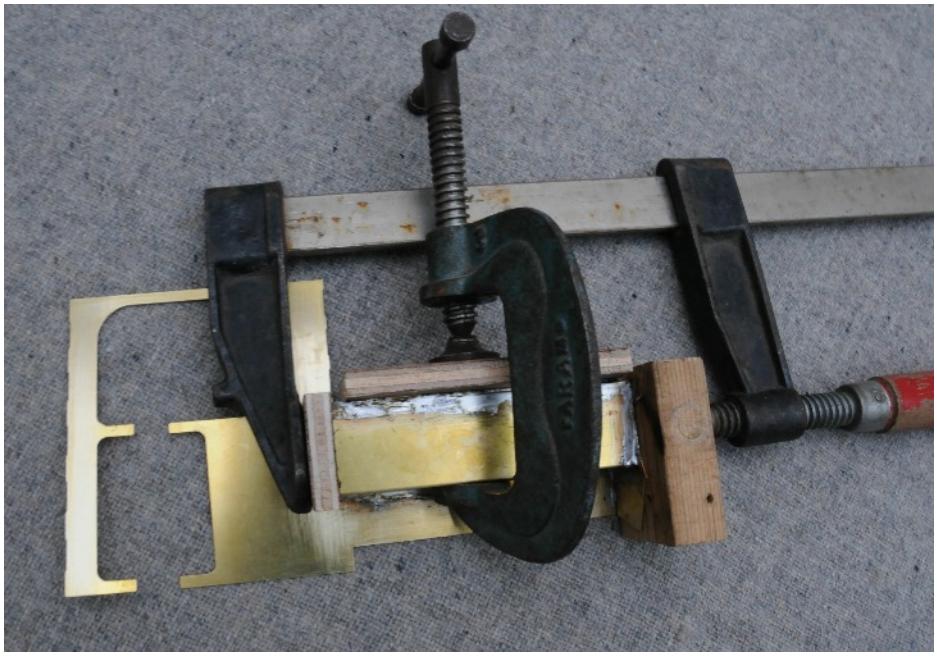
Although the water tank assembly is shown separated from the jig, used on the previous page during assembly, it can be left in place and CWT17L & CWT18L can be soldered to it. This has the advantage that all 5 pieces can be clamped in place and can be verified as being square before they are soldered. It also removes the risk that the assembly which has already been soldered together separates as additional items are soldered in place.

CWT17L & CWT18L are soldered together to increase the strength of the support bracket. They align at the support fixing hole, which cannot be seen in this picture as they are already clamped together. It is only necessary to solder the large, flat face of CWT18L to the lower face of CWT17L.

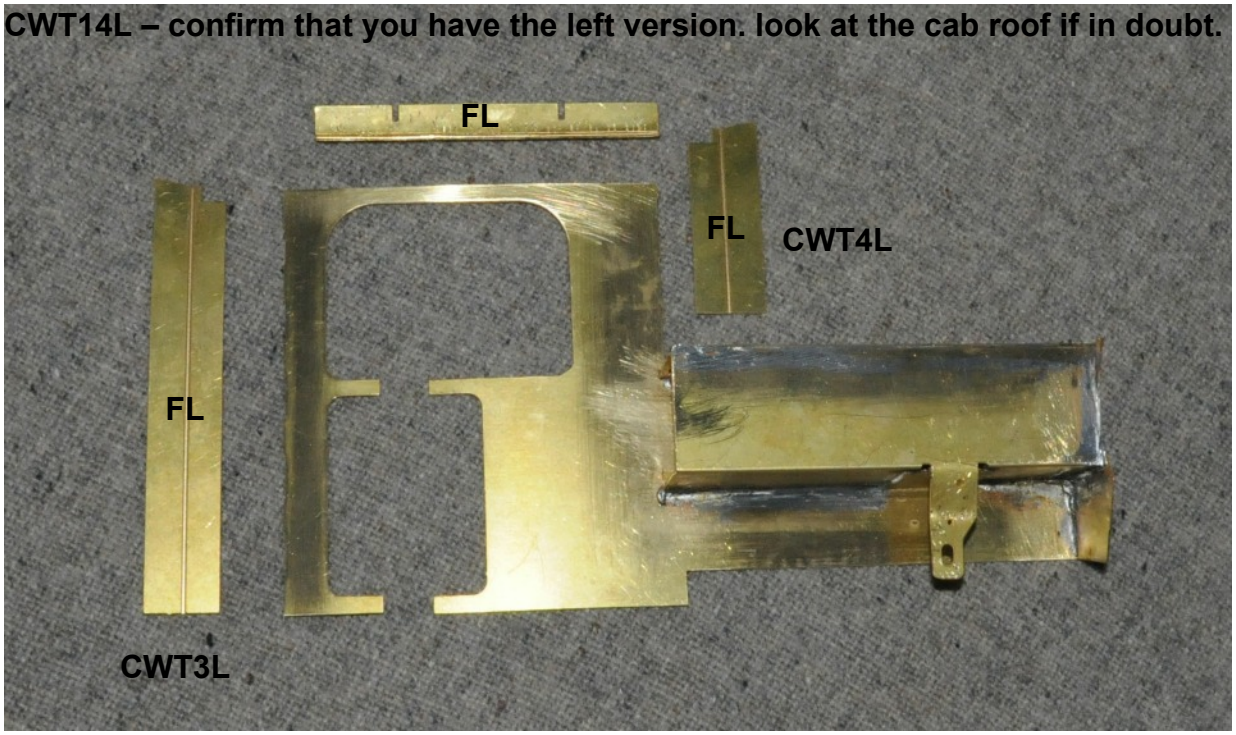


Take care when folding CWT18L to ensure that it is square and ready for soldering onto the side of the water tank.

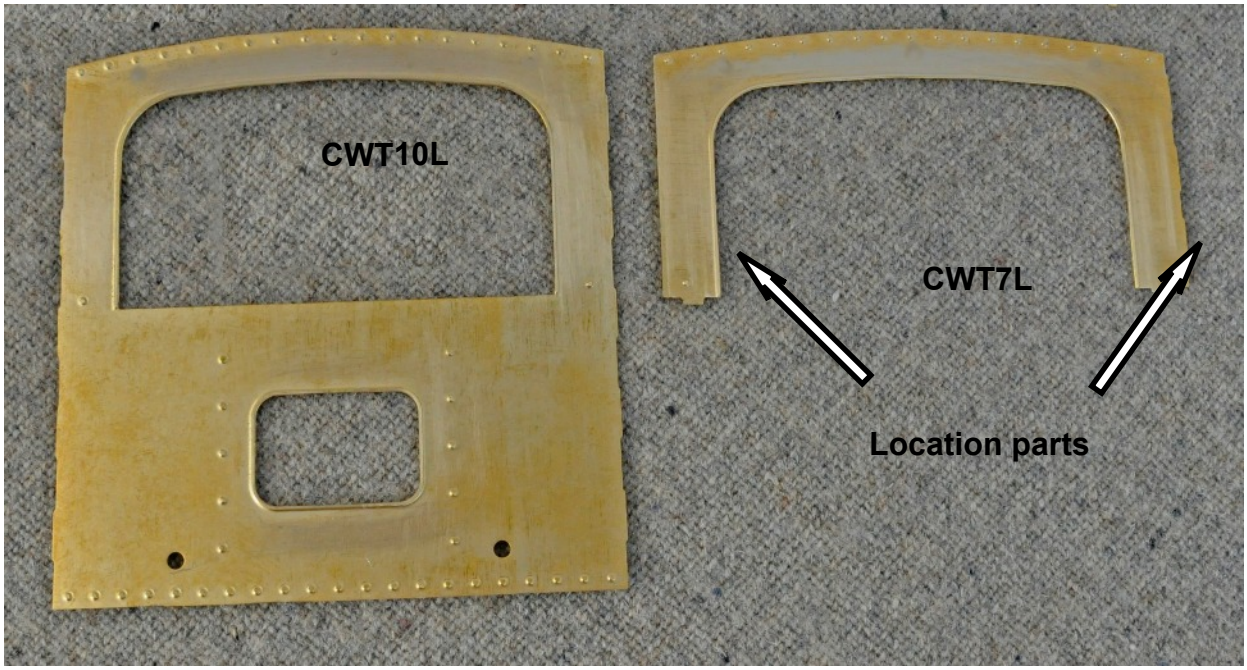
As shown below, clamp the parts CWT17L and CWT18L to assemble CWT1L, CWT2L & CWT16L. Clamp the assembly as shown ensuring that the items are square. Flux the parts and flood solder into the joints. Note that the side of CWT17L should be flush with the edge of CWT16L, which will ensure that there is space for the battery.



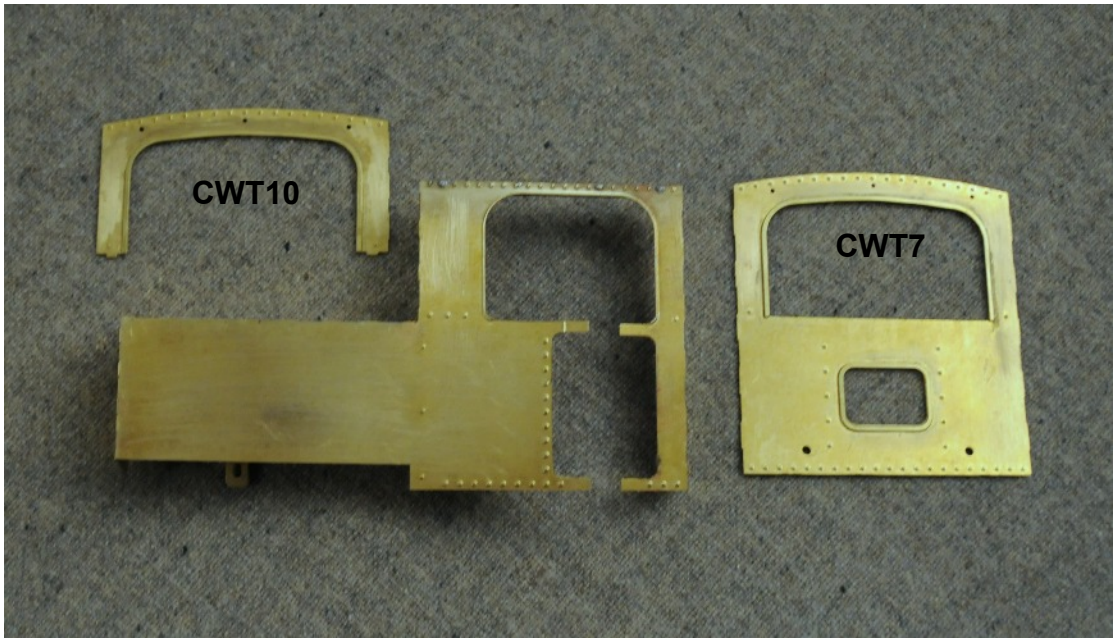
The water tank is now completed and the cab is ready for CWT3L & CWT4L to be soldered on. These form “corners” to attach the cab front and rear and need to be folded to 90° along the folding lines (FL in the picture below). These parts reinforce and stiffen the cab and provide the attachment points for the front and rear cab, CWT7 and CWT10. These will be positioned using their locating tabs. Item CWT14L should be folded to 100° ±.1° to locate the roof in position. Remember that parts with “L” suffixes are intended for fitting on the left.



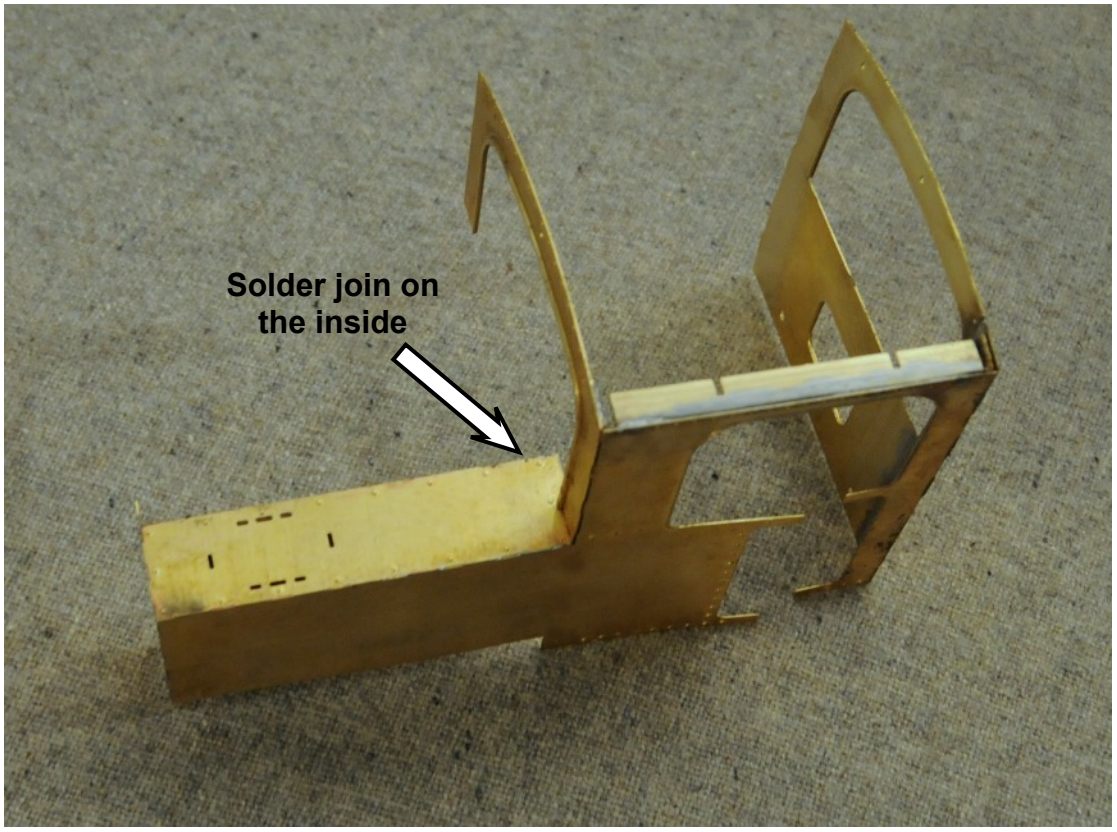
CWT10 and CWT7 can be soldered in position after CWT3L and CWT4L are in place. Equally they can be soldered in position at the same time as CWT3L and CWT4L are soldered to the water tanks. See section 4, Early Builder Experience, for a description of the latter method. If soldering CWT3L and CWT4L separate from CWT10 and CWT7, make sure that the “corner” parts will allow for the front and rear cab sections to align with the notched edges in place. To do this, clamp CWT3L and CWT4L to the cab side and confirm that CWT10 and CWT7 will fit into their respective alignment tabs before soldering CWT3L and CWT4L in place. Solder CWT14L in place after CWT3L and CWT4L, but leave the latter parts clamped whilst you do this.



This shows CWT7 and CWT10 ready for soldering onto the left hand assembly. Again clamp these parts in place ensuring that the locating tabs are in line. Keep CWT3L and CWT4L clamped in place and solder from the inside the body. Bakers Fluid, applied with a small brush, can be used to “draw” the solder along the joint once it is hot.

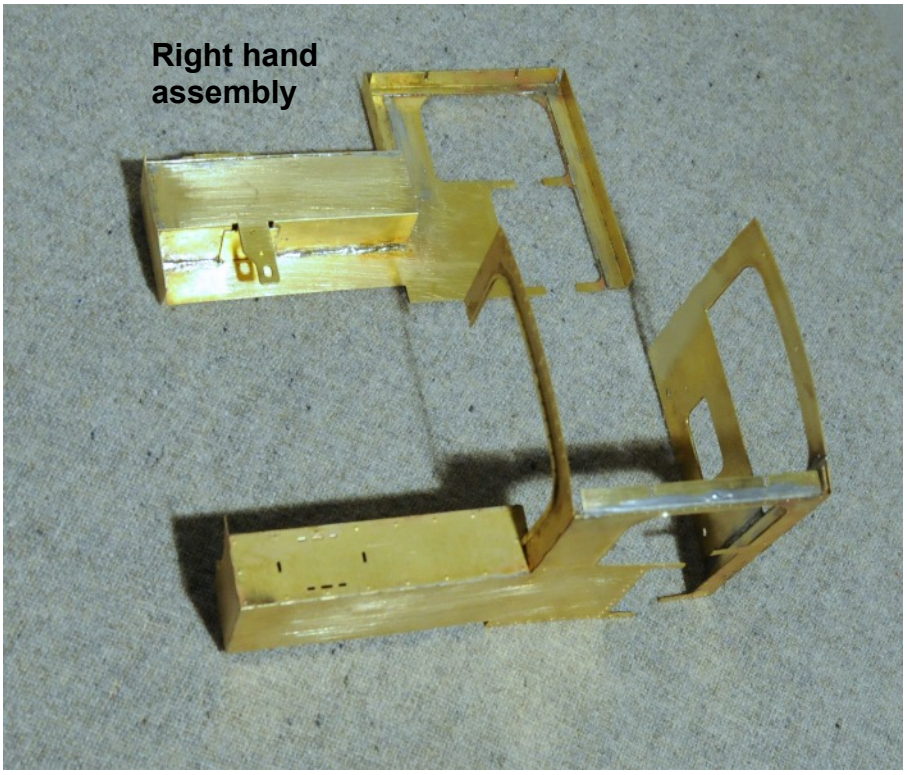


This shows the progress to this point. The highlighted joint is between the corner strap CWT4L and the cab front CWT10. It is better to solder from the inside so that it flows under the parts being joined, in order to keep the outside clean. This also applies to soldering the corner strap CWT3L to cab rear CWT7.



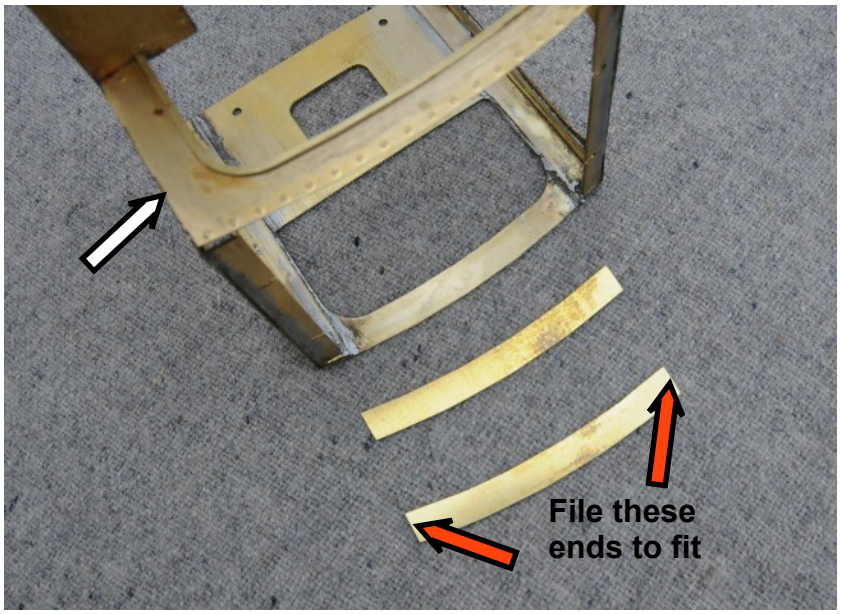
Repeat the steps from page 7 to page 11 to assemble the right hand cab side assembly. Remember that the right hand side parts have the same number as left hand side parts, albeit it are suffixed "R" instead of "L".

Once complete, the right hand assembly is a **mirror** copy of the left hand tank assembly. Clamp it in position to the left hand tank assembly and ensure everything is parallel and square. Clamp the corner parts CWT3R and CWT4R to the right hand cab side as these are the most likely parts to move during soldering.



This tanks and cab assembly is nearly complete and should look as shown below.

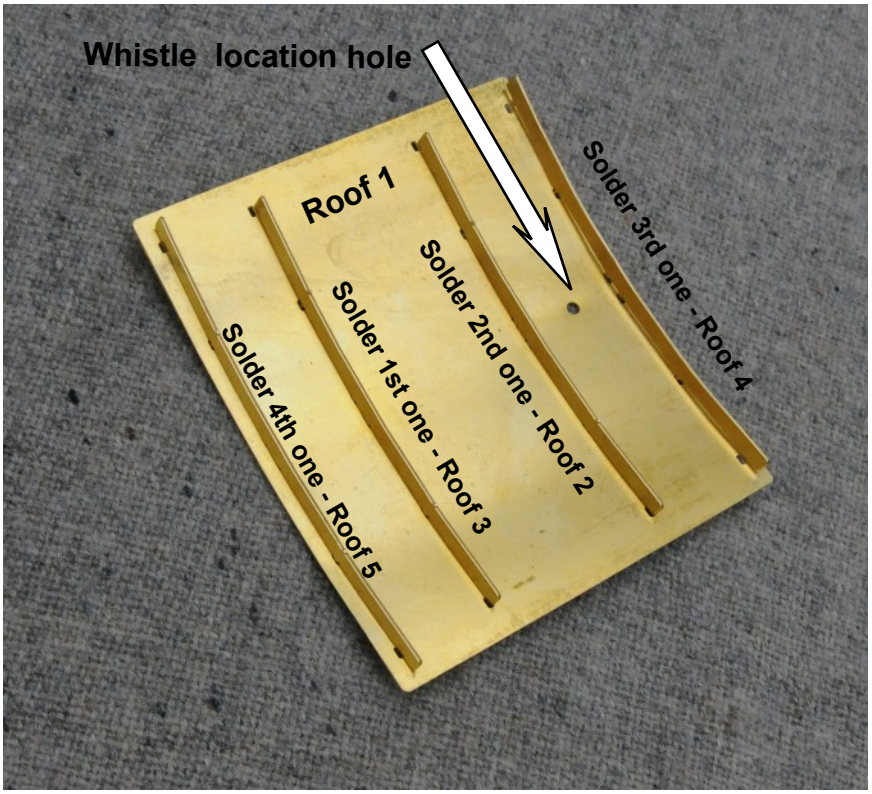
CWT12 and CWT13 can now be soldered in position on the inside of the front and rear part of the cab. The inside plates may need to be shaped at each end so that they fit in place, depending on how much solder is around the joints between the corner parts and the cab.

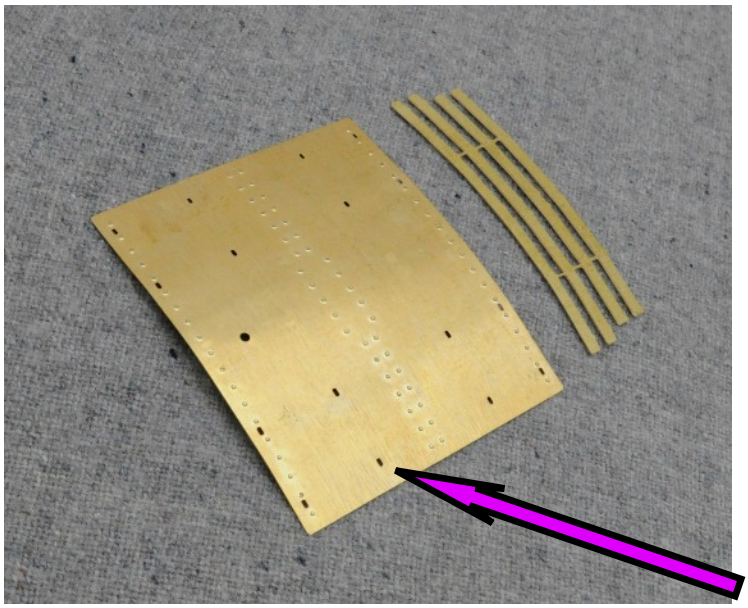


As shown (white arrow) the corners will be filed very gently to create a radius as shown in the real loco. This is described fully on page 18.

The Roof

The next step is the assembly of the roof. The roof ribs are shown located in position and in the order in which it is recommended that you solder them in place. Note Roof 4 and 5 are to be located at the front and rear with 2 and 3 in between. Please however read the instruction on the next page as the roof needs to be bent prior to soldering the roof ribs in place.

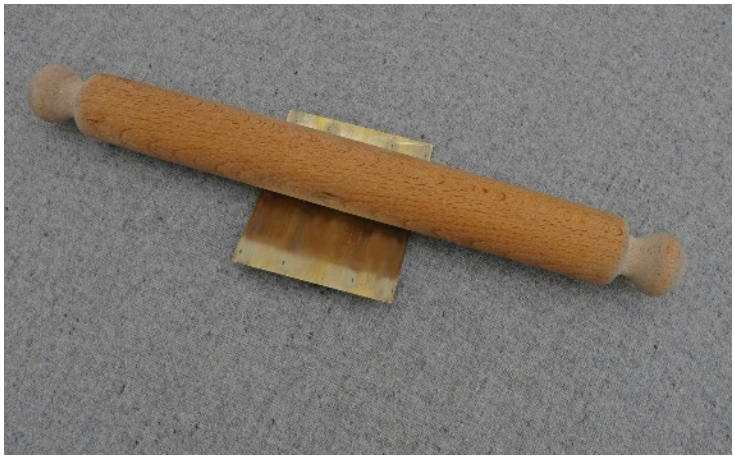




Although the previous picture shows the parts located in position for soldering, the first step is to roll Roof 1. Rolling the roof is described in the next paragraph.

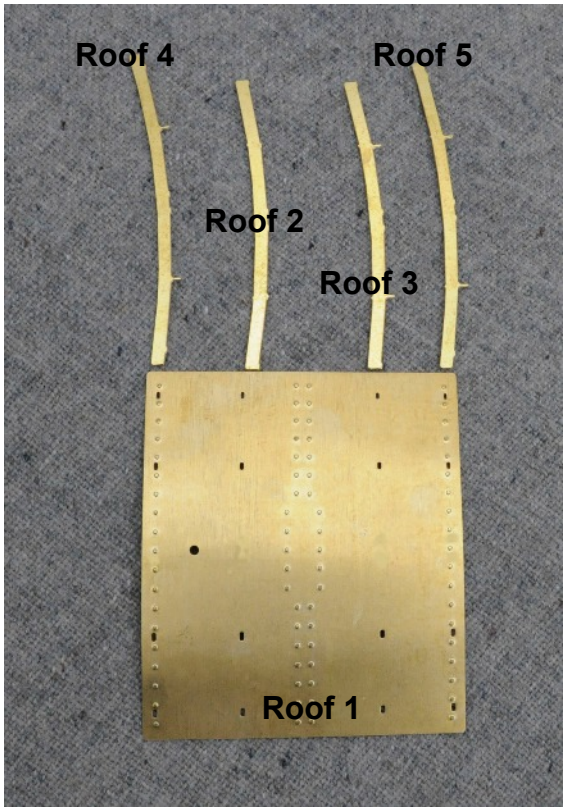
Rolling the roof should be done very gently, a little at a time. Test the roof after each pass of the rolling pin to check whether it aligns with the radius of the four ribs Roof 2 through Roof 5.

Careful rolling ensures that no creases form around the location points (slots).



This shows a rolling pin being used to shape the roof. The rolling pin is on the inside of the roof and is being done on a carpet so that gentle, uniform pressure can be applied. Keep testing to match the radius of that of parts Roof 2 to Roof 5.

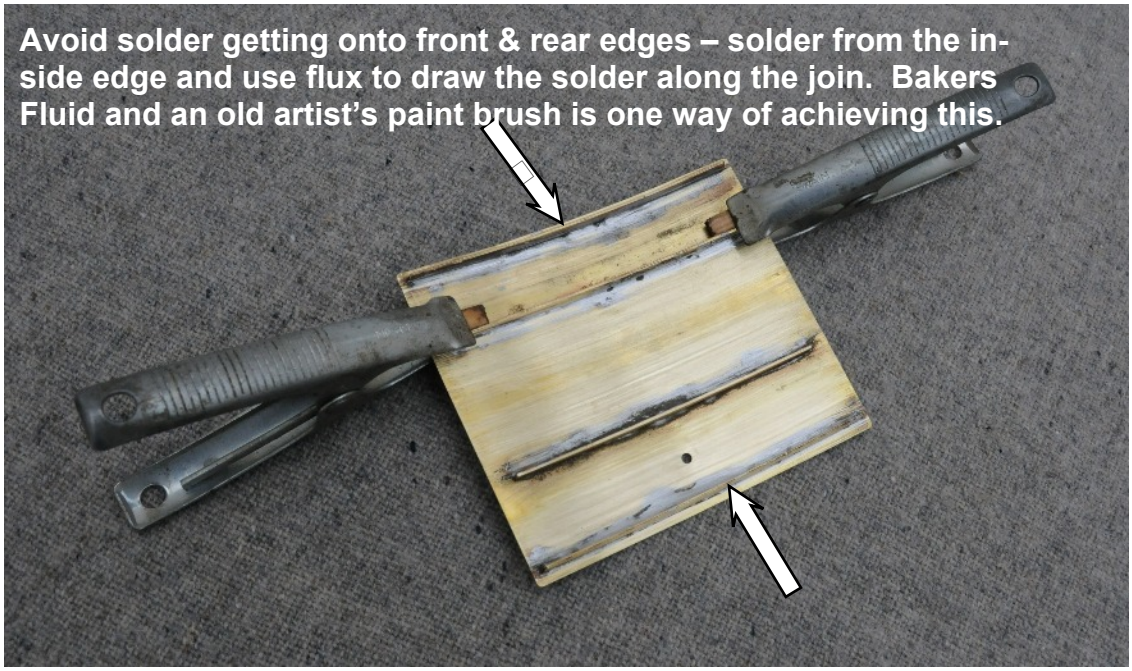
If a rolling pin is not available then another former can be used providing it does not exceed 370mm diameter. Equally, if you have a rolling tool then you can use this instead.

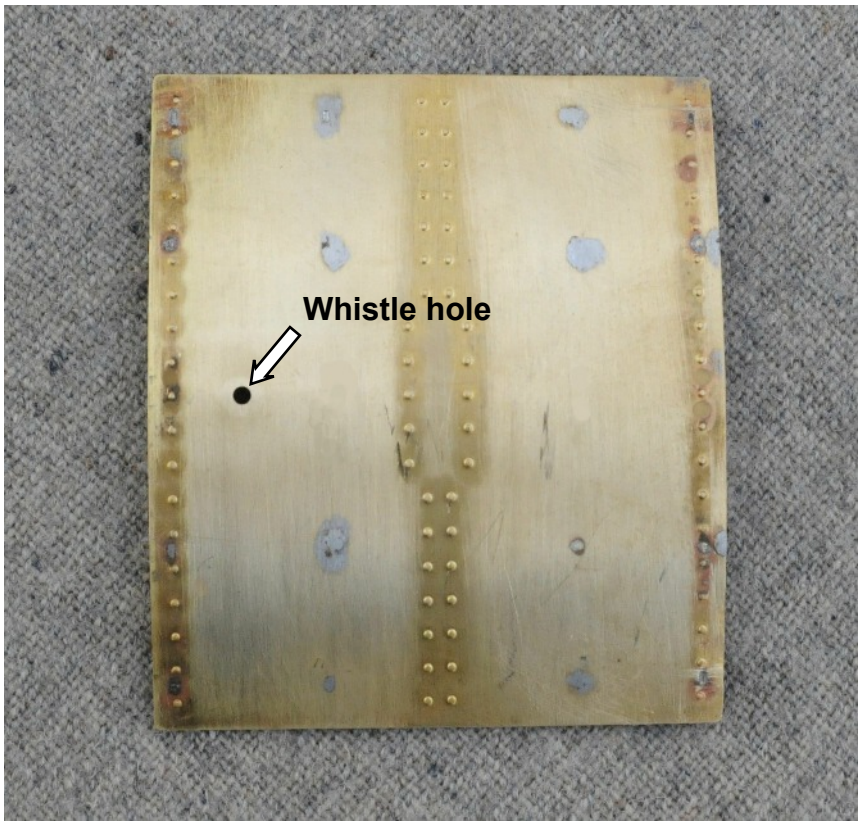


The position of the Roof parts is shown again so that they are not incorrectly positioned.

The roof can now be soldered. Roof 2 & 3 should be done first and held in position with clamps and small pieces of wood to ensure the ribs are held vertical. Try to avoid burning the wood. If, however, you do use a fresh piece of wood for the next joint. The accuracy of this work will ensure that the roof fits snuggly in place on top of the cab and that the whistle will be correctly positioned at the front.

The roof is designed so that it can easily be removed when the the loco is being prepared for use.



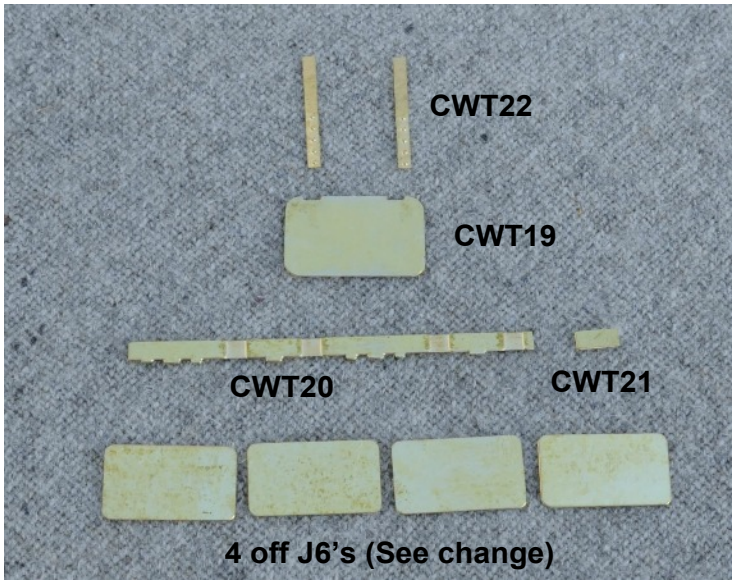


The roof is now completed and any excess solder should be removed from the upper (outside) surface of the roof.

The Water Tank Fillers

The water tank fillers are identical, left and right, and are assembled in the same way.

I did not solder these items as I found that Permabond 731 cyanoacrylate was extremely good. However, the brass must be completely clean and you should wear suitable gloves to prevent your fingers sticking to the parts. The brass should preferably be sanded to roughen the area to be joined in order to ensure a good key.



If you use solder there is a risk that parts will move as adjacent parts are being soldered in place.

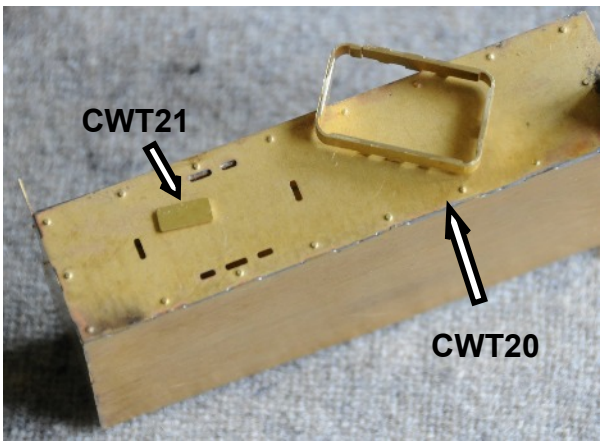
I have checked a number of super glues and would suggest that if you use another type you first test it using scrap pieces of brass and that you confirm that it is suitable for use above 120°C.

First to be assembled are the raised sides of the filler apertures. The four items J6 are glued or bolted together and then used as a former around which part CWT20 is bent. Once correctly formed the ends of CWT20 are linked using strap CWT21.

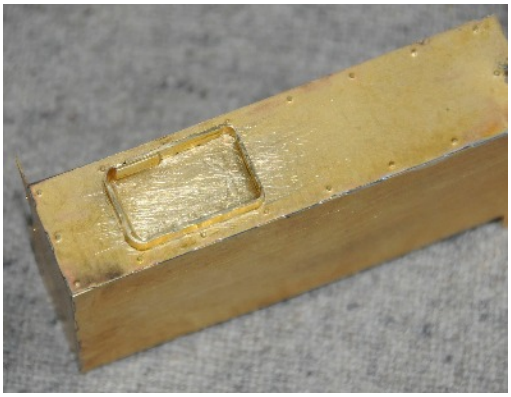
CWT20 and CWT21 are now ready for forming into place around the J6 jigs.

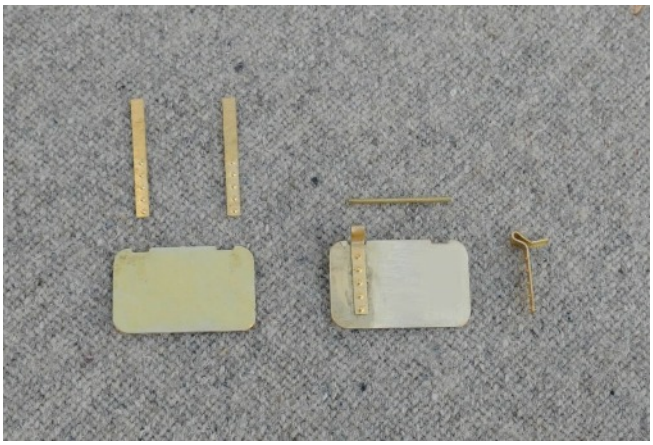
When assembling CWT20 and CWT21 check that CWT19 will fit later on. Ensure that CWT21 is firmly in place and not proud of the upper edge of CWT20, to allow CWT19 to fit in position.

CWT20 is now formed and CWT21 is ready to be glued in place. The jigs, J6, will confirm that the assembly will fit into the water tank.



CWT20 and CWT21 should now be fitted in place in the tank top. Check with jigs J6 but ensure that they are not glued (or soldered) in place as they will be used for the opposite side.





Once the raised sides of the filler apertures are in place CWT19 can be fitted and it is then ready for the “hinges” CWT22.

The pin which goes between each hinge can be any suitable thin steel or brass rod of Ø1.2mm diameter or even a straightened paper clip.

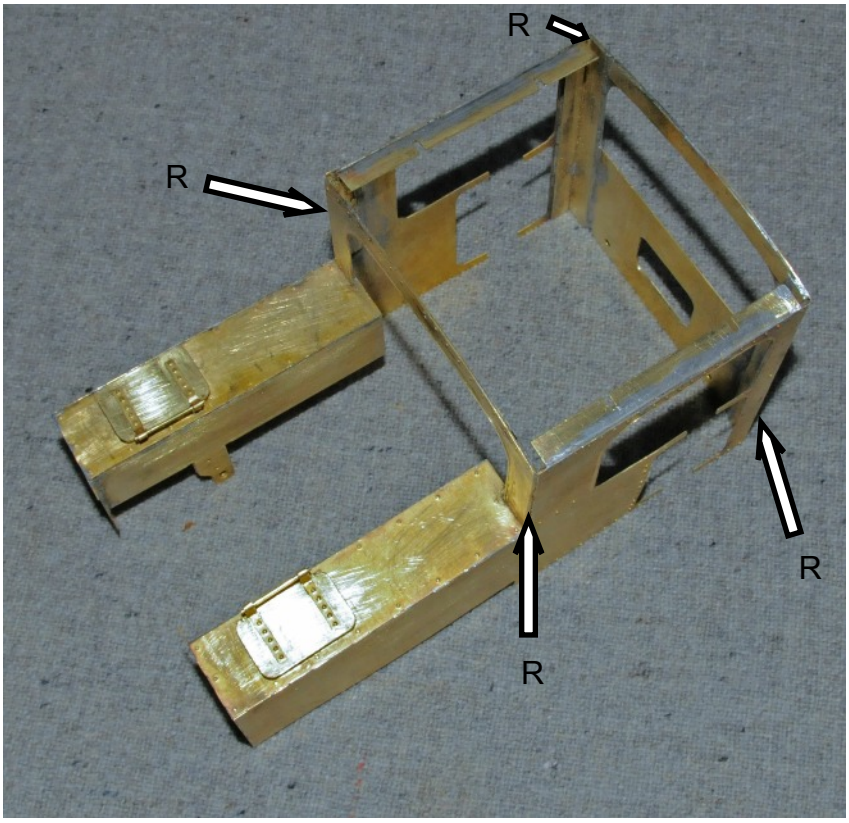
Each hinge needs to be formed as shown. The dimensions are shown to the left. Each pair should be identical.

Both hinges can now be fitted by locating them squarely to the lid and rear face of the filler lid.

Next fit the hinge pin.

I left some protruding each side to allow for final adjustment.

The lid should be located centrally on top of the filler aperture.

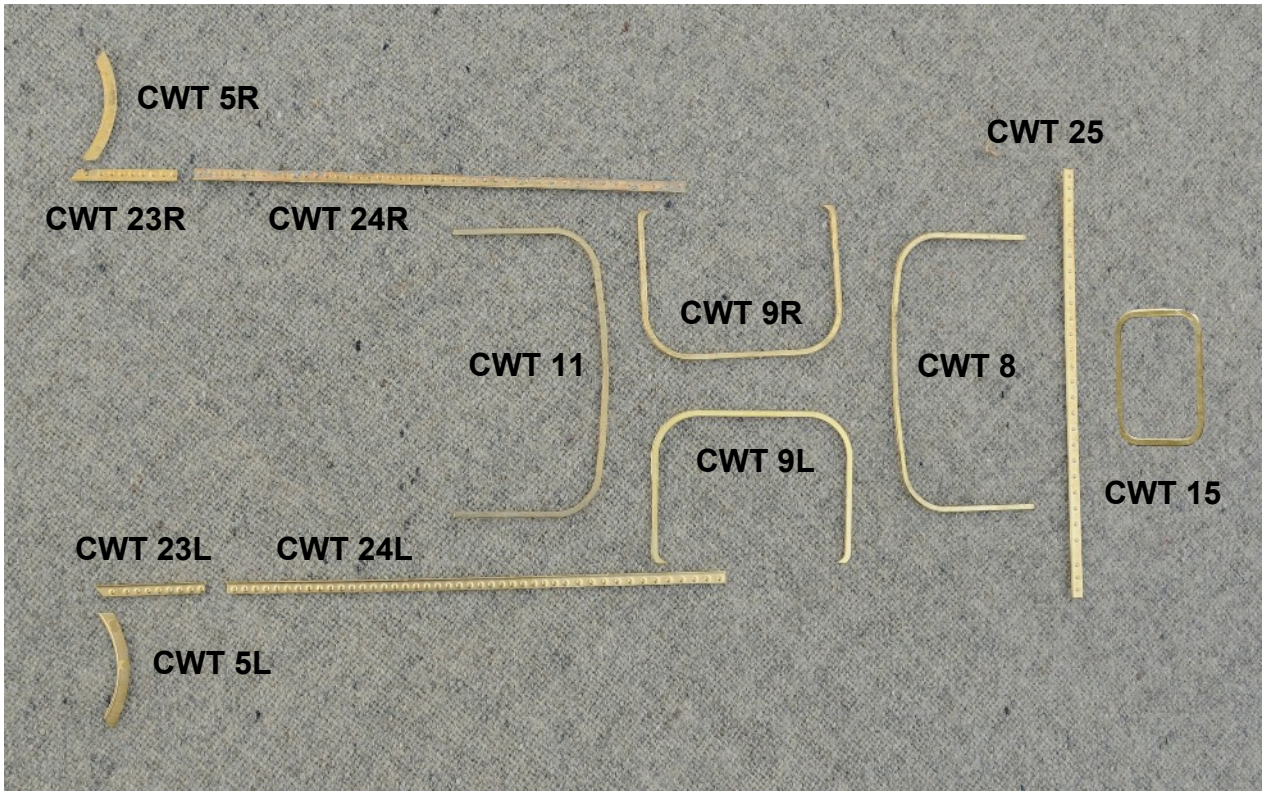


This shows the assembly ready to form a curved edge at each corner of the cab. The internal straps fitted whilst assembling the cab will ensure no weakness to each corner. All the other corners and edges should be square and the areas cleaned and made ready for fitting additional parts.

To form the curved edges, carefully file with a “hand smooth” grade file. The curve should not be too pronounced, just enough to convey a difference between the corners of the cab and the corners and top edges of the water tanks. Do not try to take off too much at once and remember, you can always take more off but you can’t put any back!

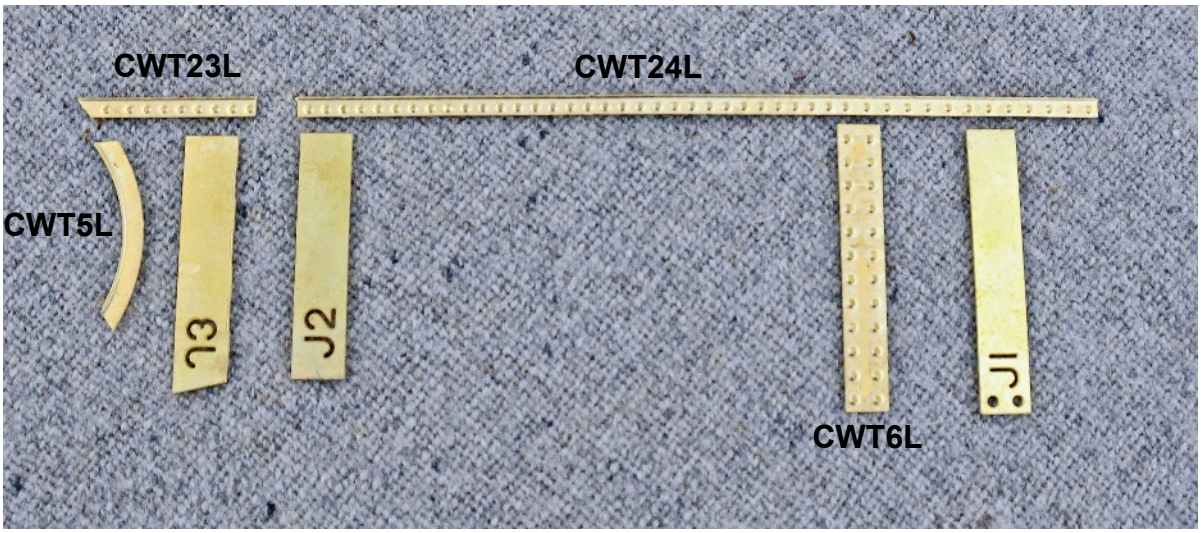
R = The curved corners

The “Angle Irons with rivets” and cab frames.



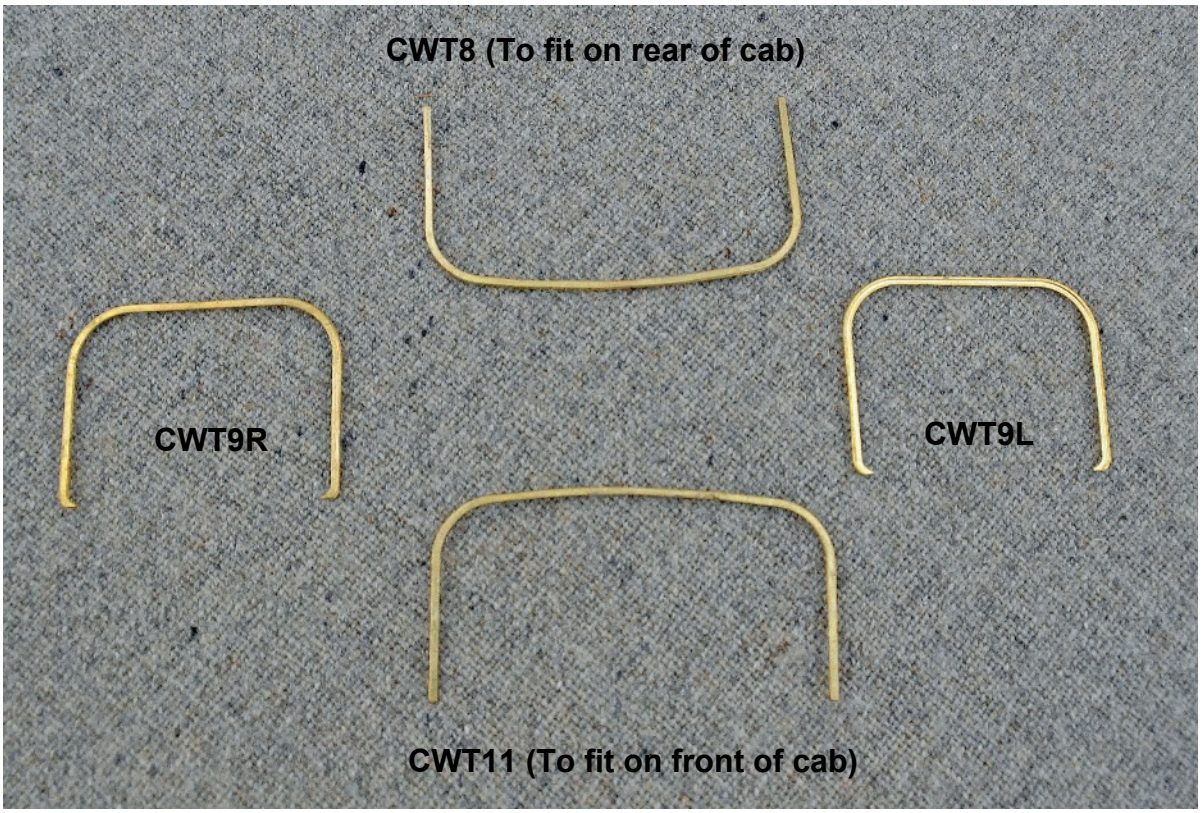
The picture above shows all the additional items needed to edge the cab and water tanks. CWT 6L & CWT 6R are also used and shown in the next picture.

Ensure you prepare the brass parts as explained previously, so that they are a close fit to the cab / water tank and are ready to be glued in place.



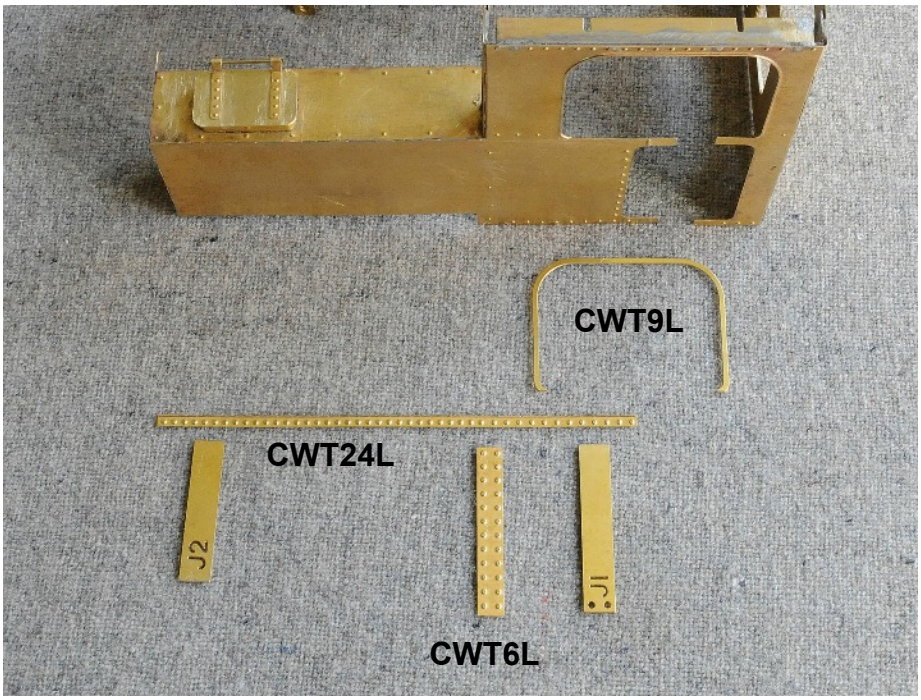
CWT5L, CWT23L, CWT24L and CWT6L will be located in line using jigs J1, J2 and J3. Note: J3 to be used **reversed** when building the right hand side of the body.

Note: All “angle irons” are to be positioned with the “angle” at the top, including CWT25.

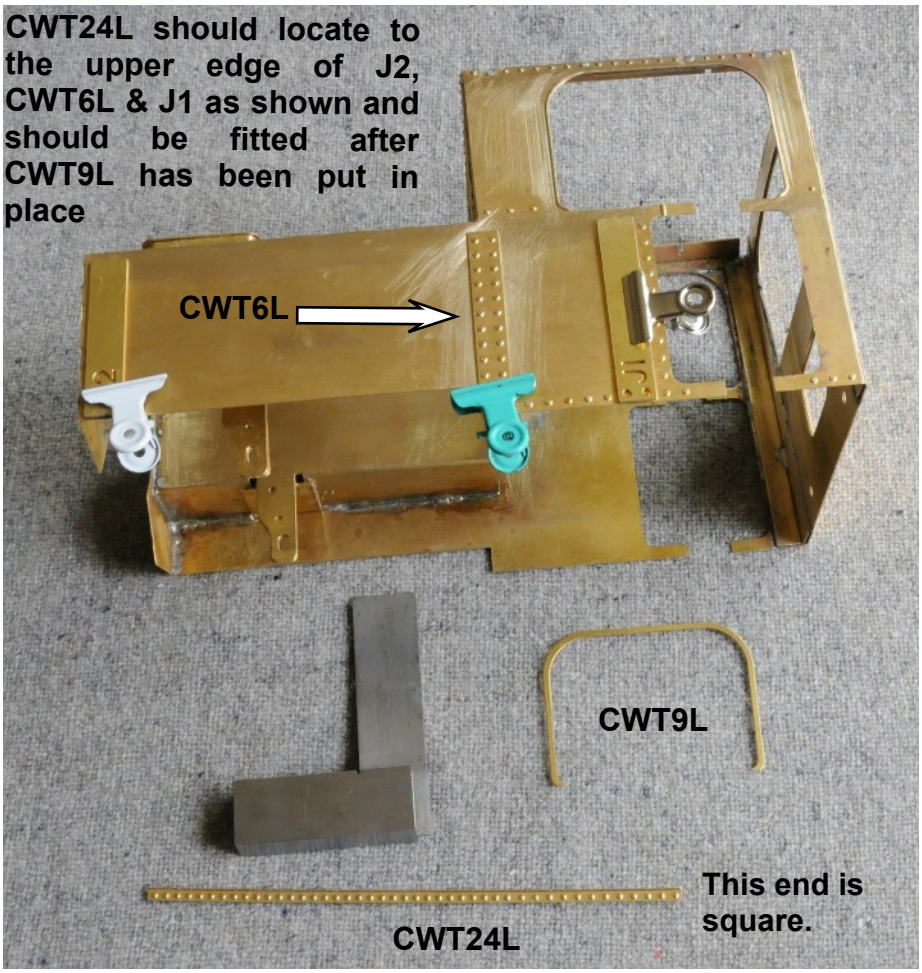


The items shown above increase the thickness of the cab’s apertures to emulate the look of the real locomotive. Try and create a gentle radius, but be careful. You may wish to tackle this after the parts have been fitted and the glue has cured fully.

Verify that each item is fitted as per the part number and description shown in the picture.



The items shown above are fitted as below.



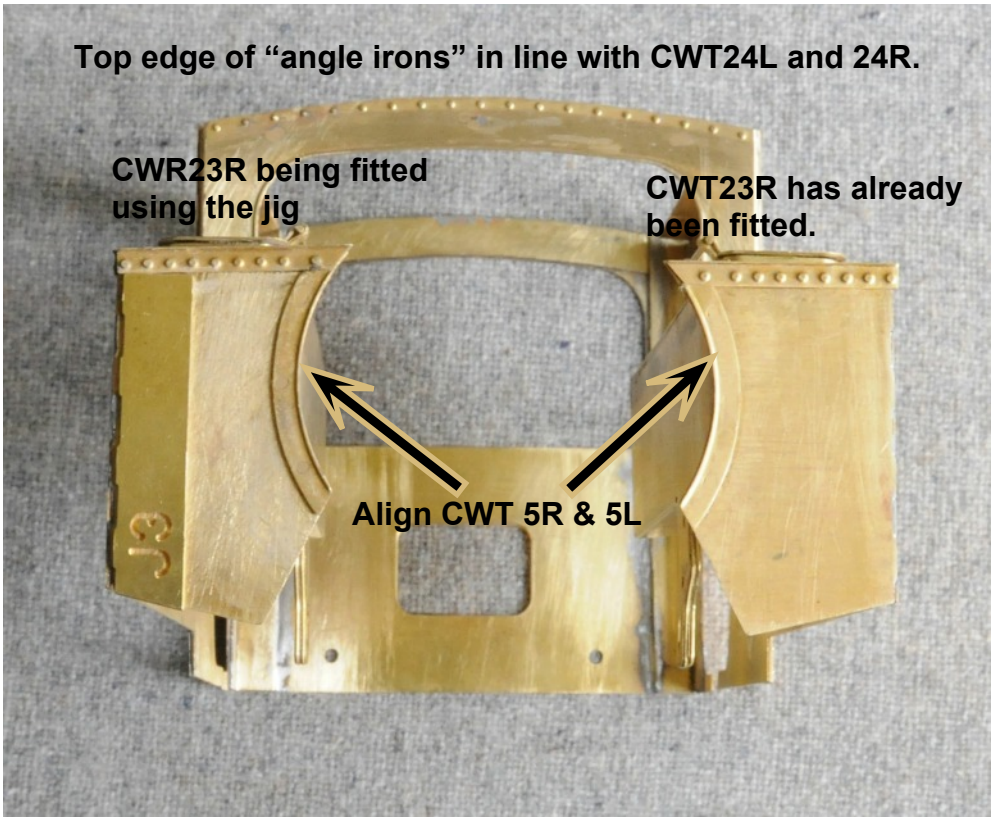
Fit CWT9L in place ensuring that you leave space for CWT24L to be fitted. Then clamp J1, J2 and CWT6L as shown so that CWT24L can be placed in the correct position. The top edge is like an “angle iron with rivets” and should be a little bit higher than the edge of the water tank. Before fitting CWT24L ensure that all the clamped items are square and that their edges and the items’ ends are flush with the cab / water tank lower edges. The last check is to make sure that CWT23L (Shown on the next page) will be able to be located in place.

Now fit CWT24L in place and make sure that the clamped jigs do not become fixed to the tank/cab side in the process.

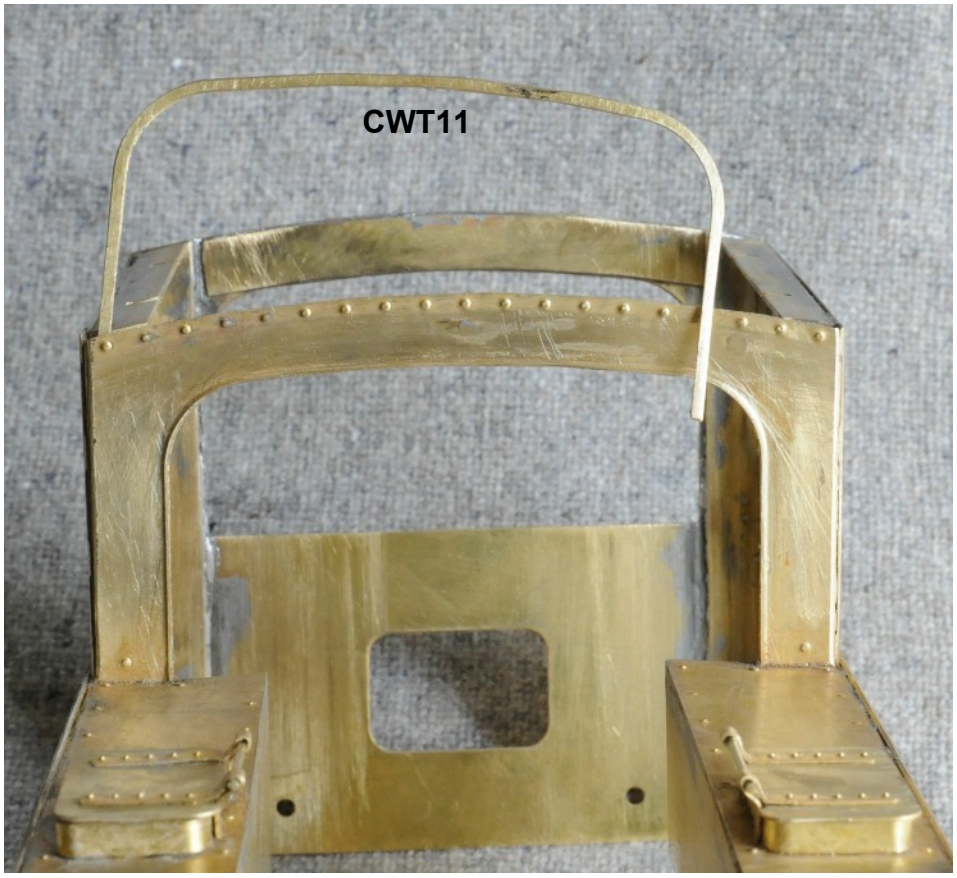
CWT6L can now be fitted in the area shown. Square and align It with the front and lower part of the cab

.

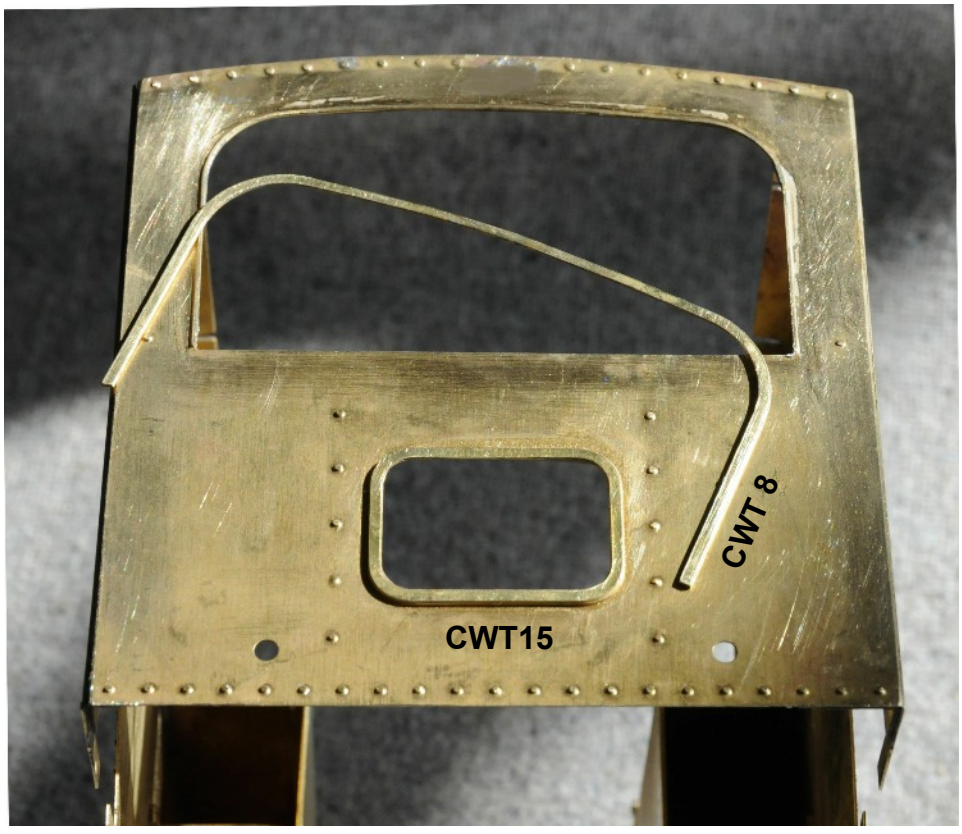
The parts above should be checked and laid out as shown so that they will fit the water tanks. It would be easy to mix them up.



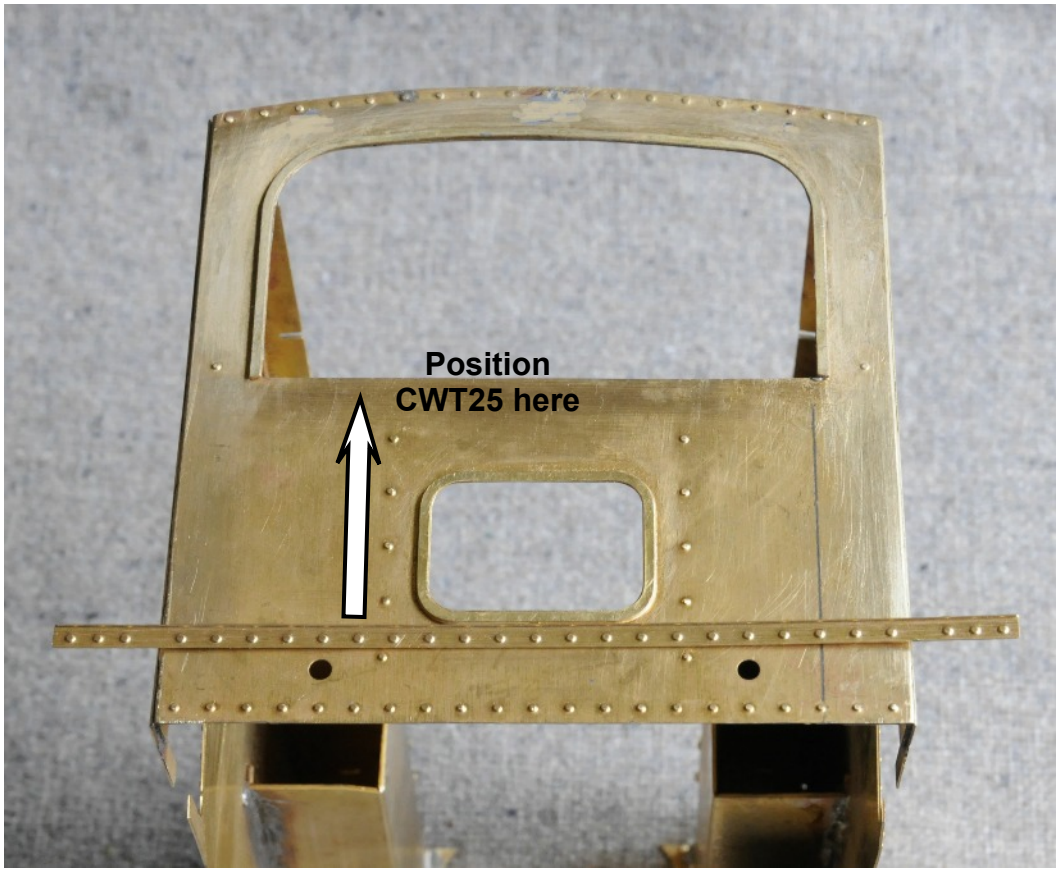
J3 should be positioned at the outer edge, as shown, so that CWT23L & 23R can be positioned checking that the “angle irons” are parallel with CWT24L & 24R. Fit CWT23L & 23R and then prepare to fit CWT5L & 5R so that the inside radii align and that the lowest edges to the “angle irons” are in line with the edge of the front of the water tank.



CWT11 & CWT8 can also be shaped as per CWT9L & 9R. However these items are slightly different in height. CWT11 at the front of the cab is slightly higher that CWT8. So fit CWT11 in place first to avoid mixing them up.

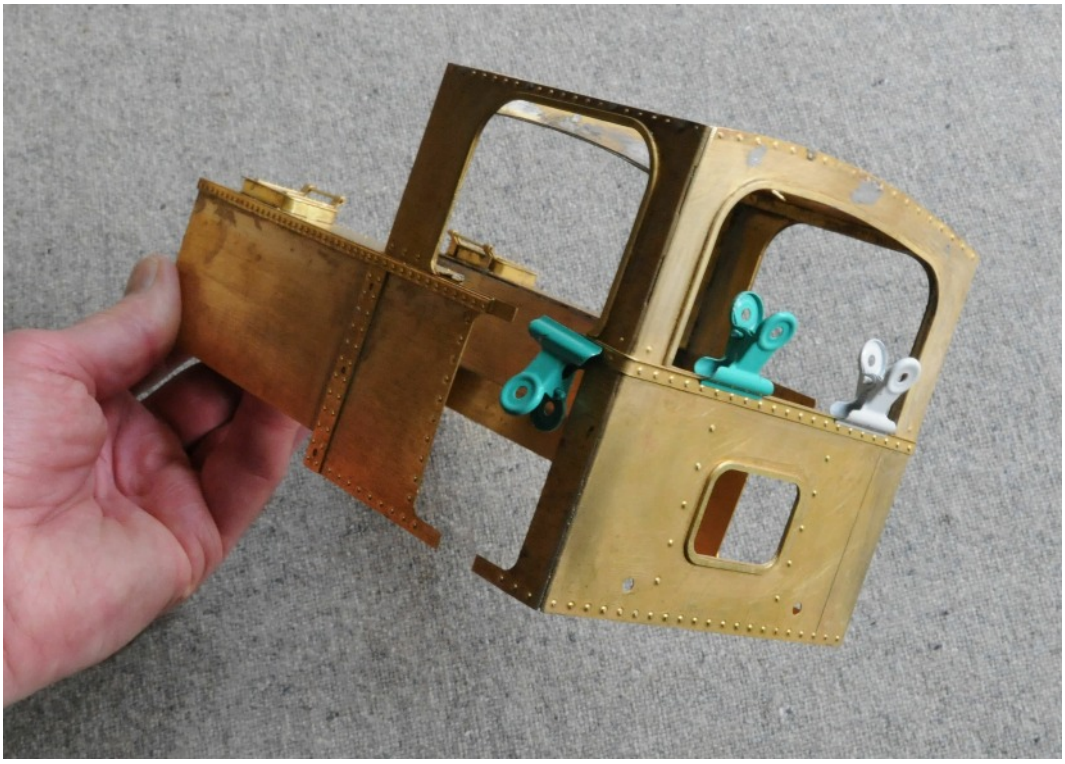


Now fit CWT8 as per CWT11. CWT15 has been fitted as shown.

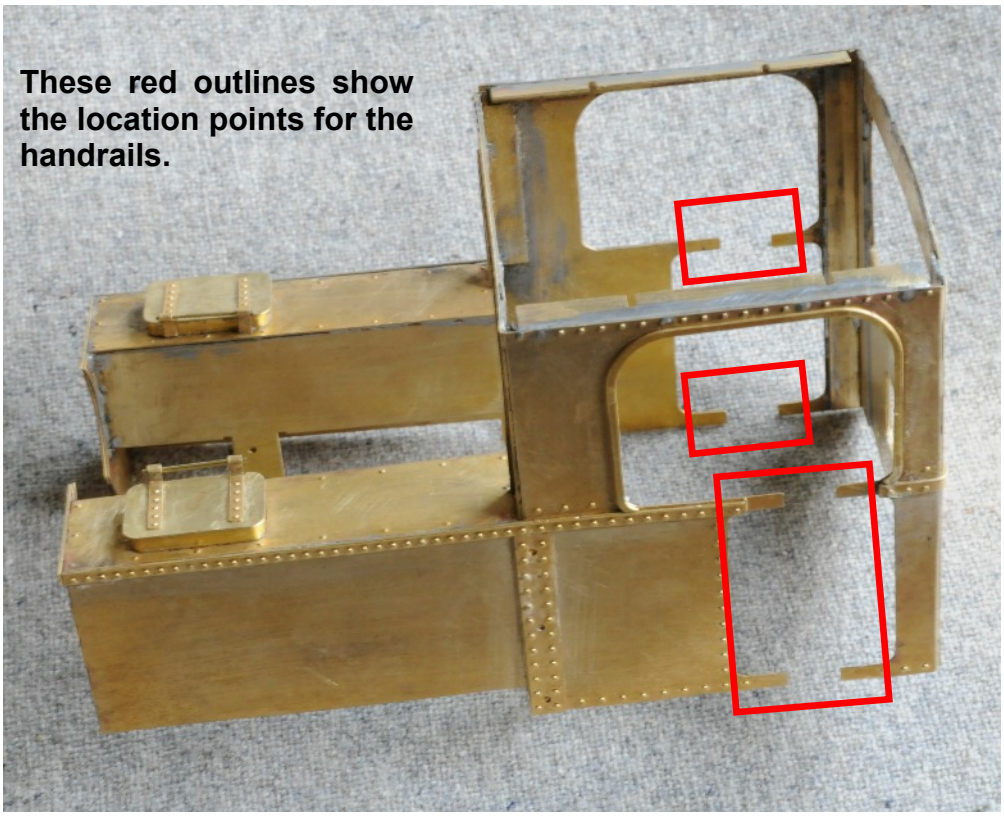


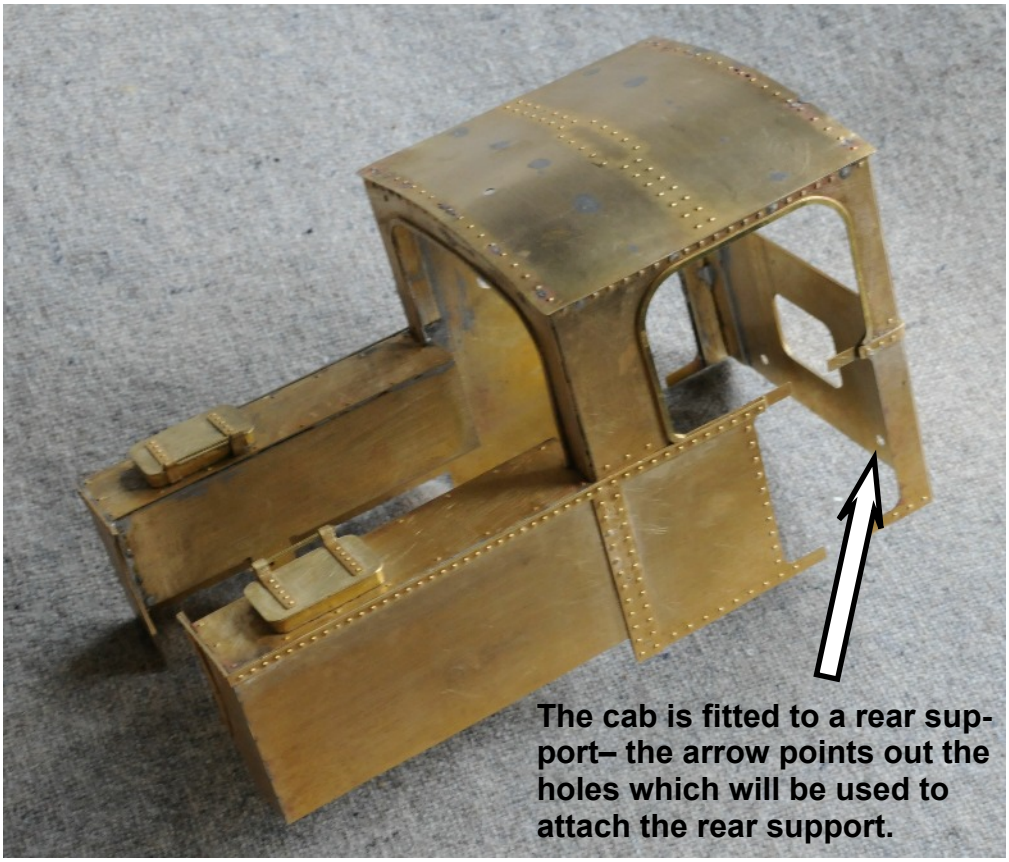
The pictures on this page show the “angle iron” on the rear of the cab. Draw a line at 90° from one of the lower “rivets” at the rear of the cab. This shows the line at the right side. CWT25 can now be located and positioned so that the “angle iron” can be formed around the sides of the cab. The “angle iron” should be flush to the bottom of the rear cab aperture. Clamp and glue in position as shown below and form the left and right ends. That on the left hand side is shown below.

If everything is in line fix CWT25 to complete.

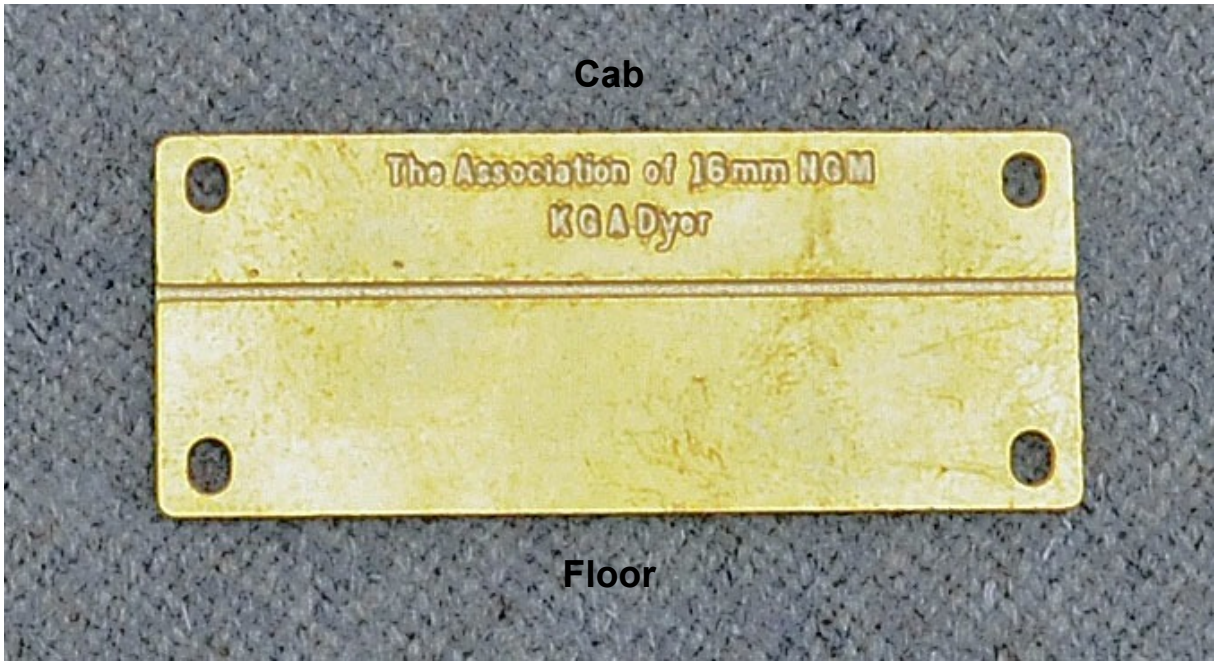


Having got to this point, but before you paint the assembly, the cab handrails (4 off castings) need fitting. This is described on page 26.



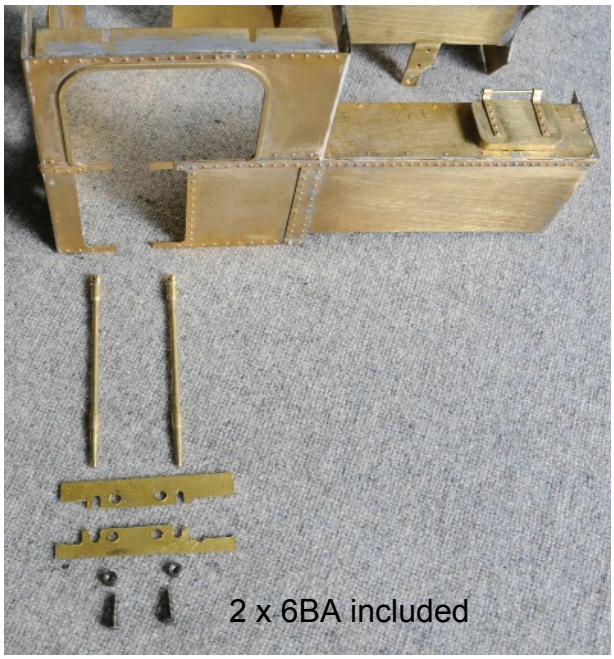


This picture shows the roof fitted.



CWT26 is folded as shown so that the cab can be located to **the** floor.

An optional support bracket , CWT27, can be fitted under CWT26 and under the floor to hold an R/C receiver inside the right hand water tank.

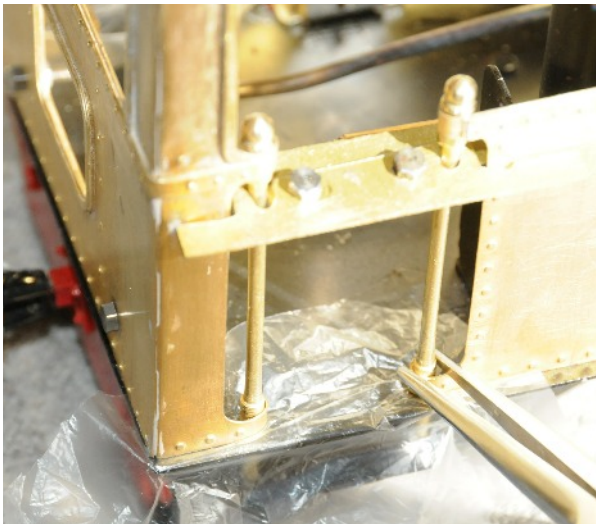


The cab handrails for the RH side are shown with jigs J4 & J5. The cab / water tanks should be fitted onto the cab floor and frames prior to fitting the handrails.
.

The jigs are located as shown below and the handrails pushed into the cab floor with the length cut to touch the top of the cab step.

Put a piece of thin material between the cab and the floor so that no adhesive goes onto the floor during assembly. I found epoxy resin ideal for this step. But before gluing the handrails in place, roll the cab extension around the handrail as shown to retain the handles in their correct position.

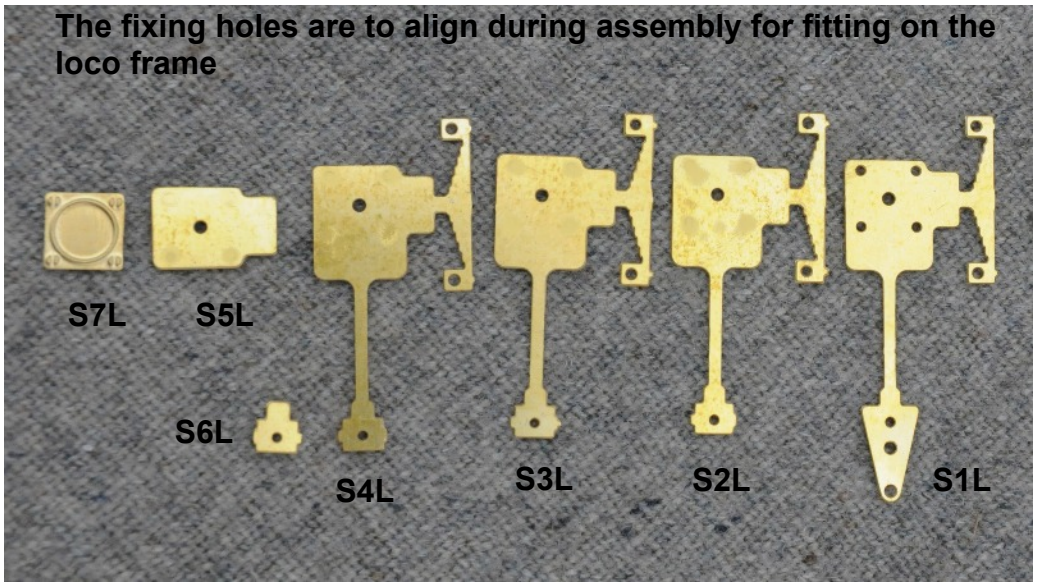
You may wish to polish the top section of the cab handrails before fitting them in place.

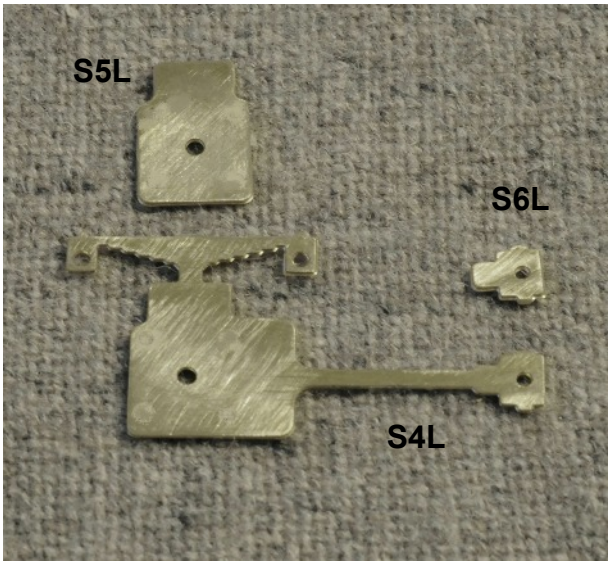


Forming the cab extensions by gently rolling around the handrails. A small set of pliers was used for this step.

Pony Spring / Bearings

There are seven parts for each side to make a pony spring/bearing assembly. . This provides a visual representation on the outside of the frame and is not functional. They are assembled as a sandwich to provide depth, with successive layers of the sandwich being glued or soldered together. The items shown form the left hand assembly. The items for the right are identical but assembled in mirror image.

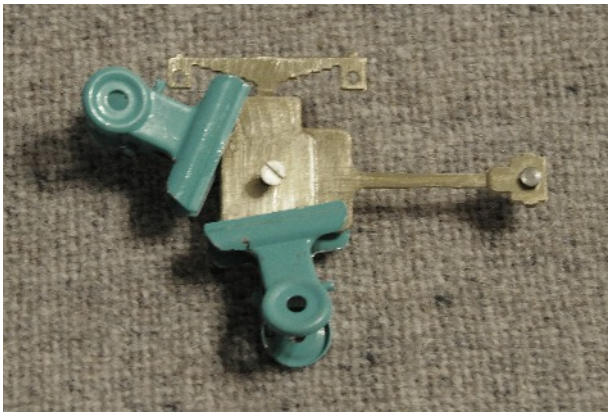




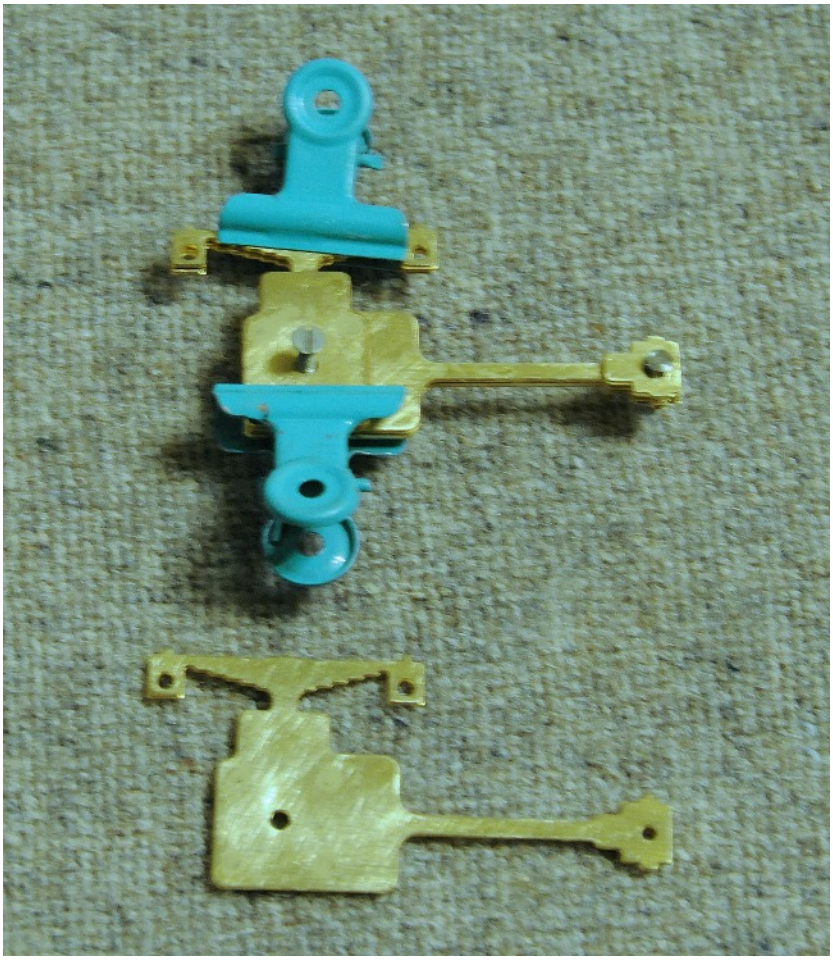
Shown are S5L, S4L & S6L.

Note: S2L & S3L are identical as S4L.

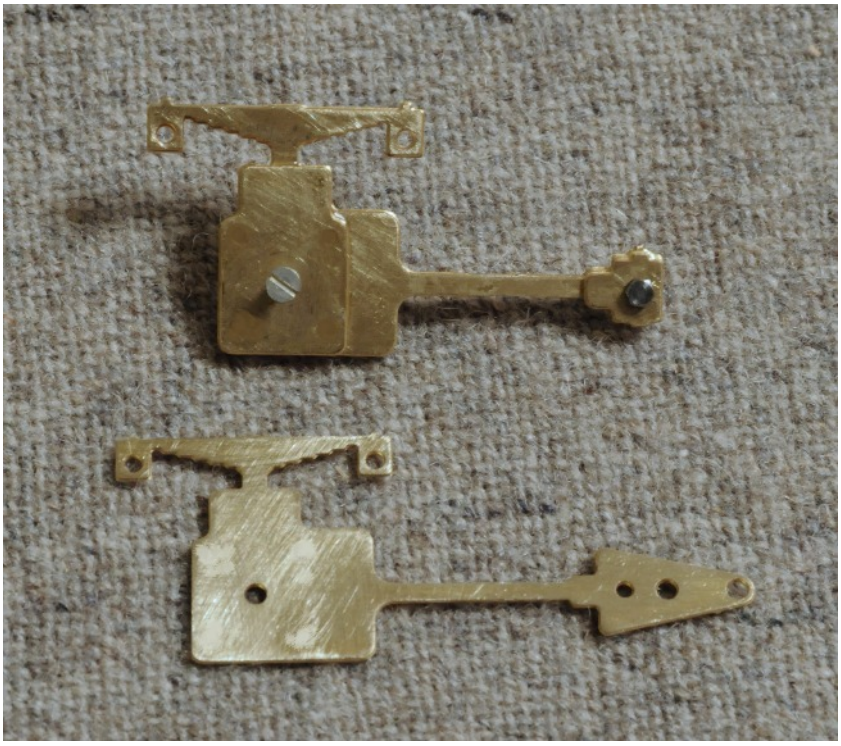
Ensure that all fixing holes align as each item is assembled onto the chassis.



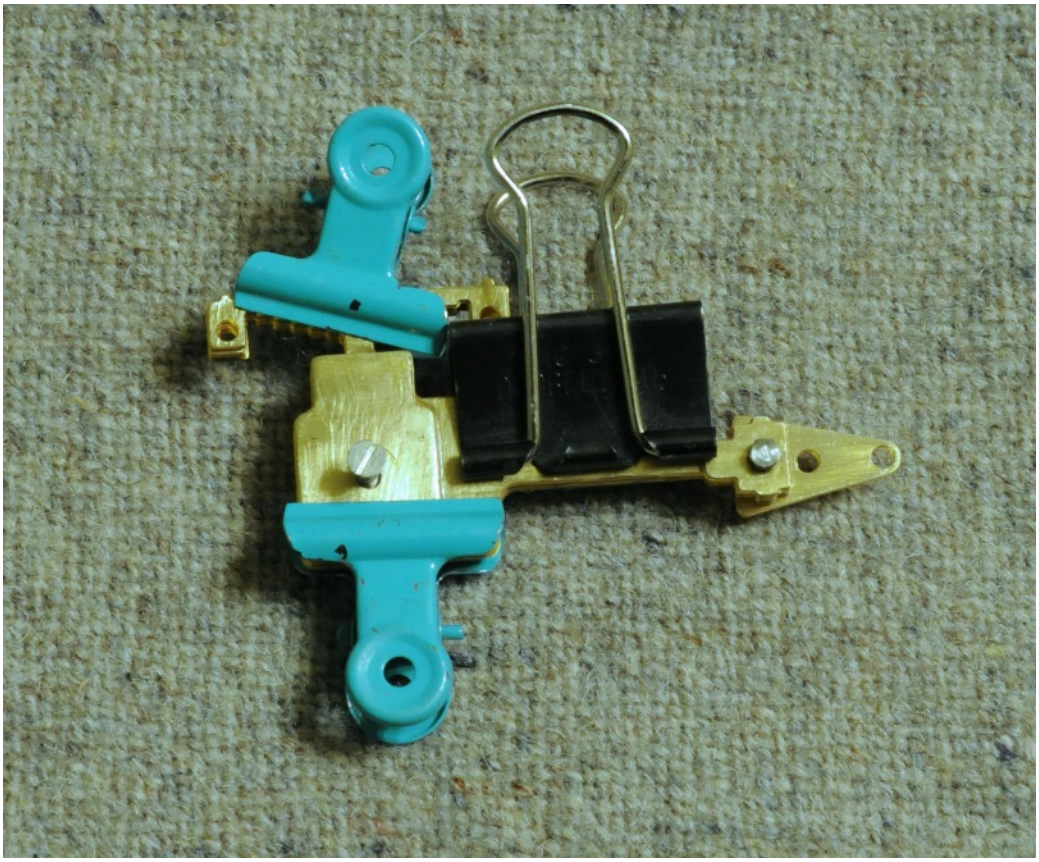
Using bulldog clips position the 3 items shown using the screw and bolt to achieve alignment. If you are gluing the individual pieces together it may be wise to use a quick setting epoxy, as this gives time to align the parts before the glue sets. Clamp the items together and then remove the screw before the glue sets. Ensure that the items remain in line with each other but leave the bolt in place so that it also is glued in place.



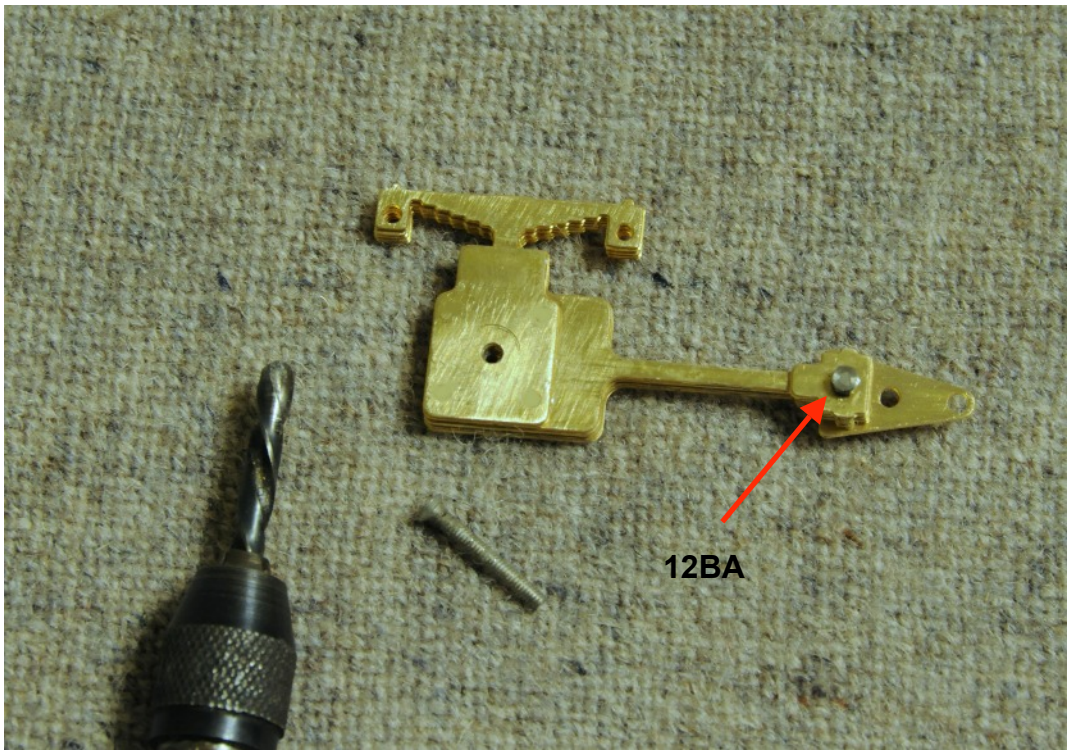
Now add S3L behind S4L, removing the screw before the glue sets.



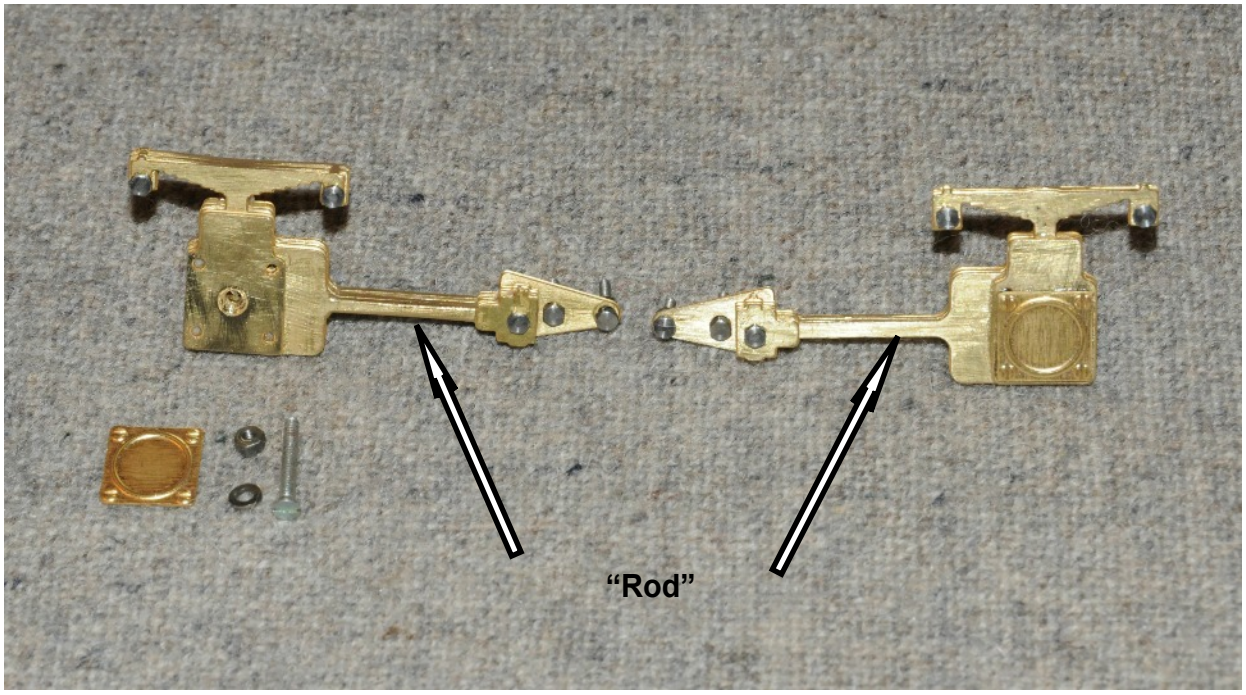
Now add S2L behind S3L, again removing the screw before the glue sets.



Now add S1L as shown. Note the countersunk screw shown; the hole in S5L will be countersunk to allow the screw to sit flush with S5L and allow it to be covered by S7L later on.



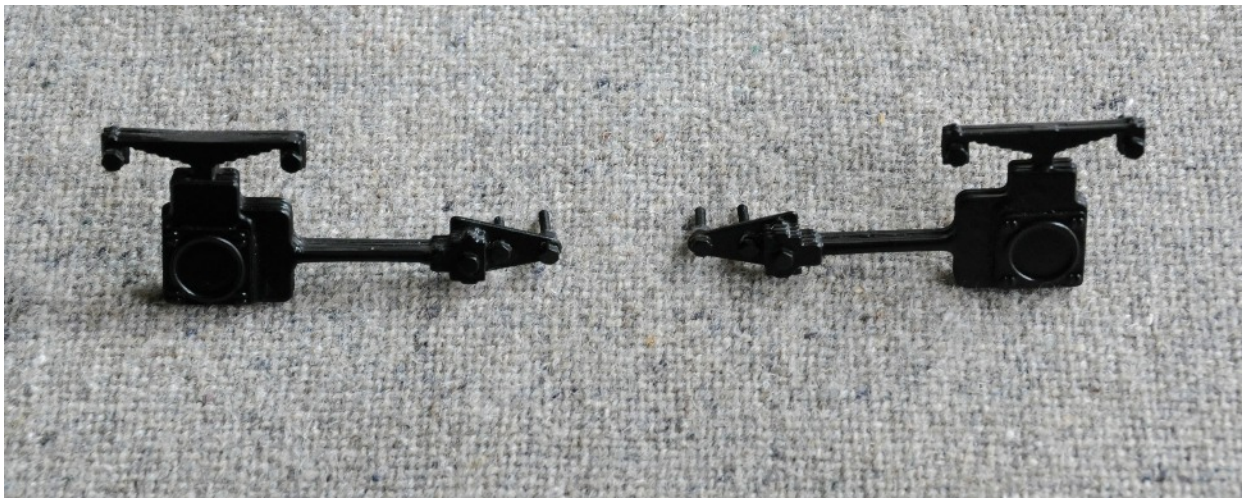
Countersink so that the screw is flush with the surface of S5L and that S7L can be fitted later. Use a countersink bit if available, otherwise use a drill but very carefully. The **10BA** bolt, which should have been secured with glue in the steps above, should be left in place, cut off at the rear and filed flush to the back of S4L as it is cosmetic.



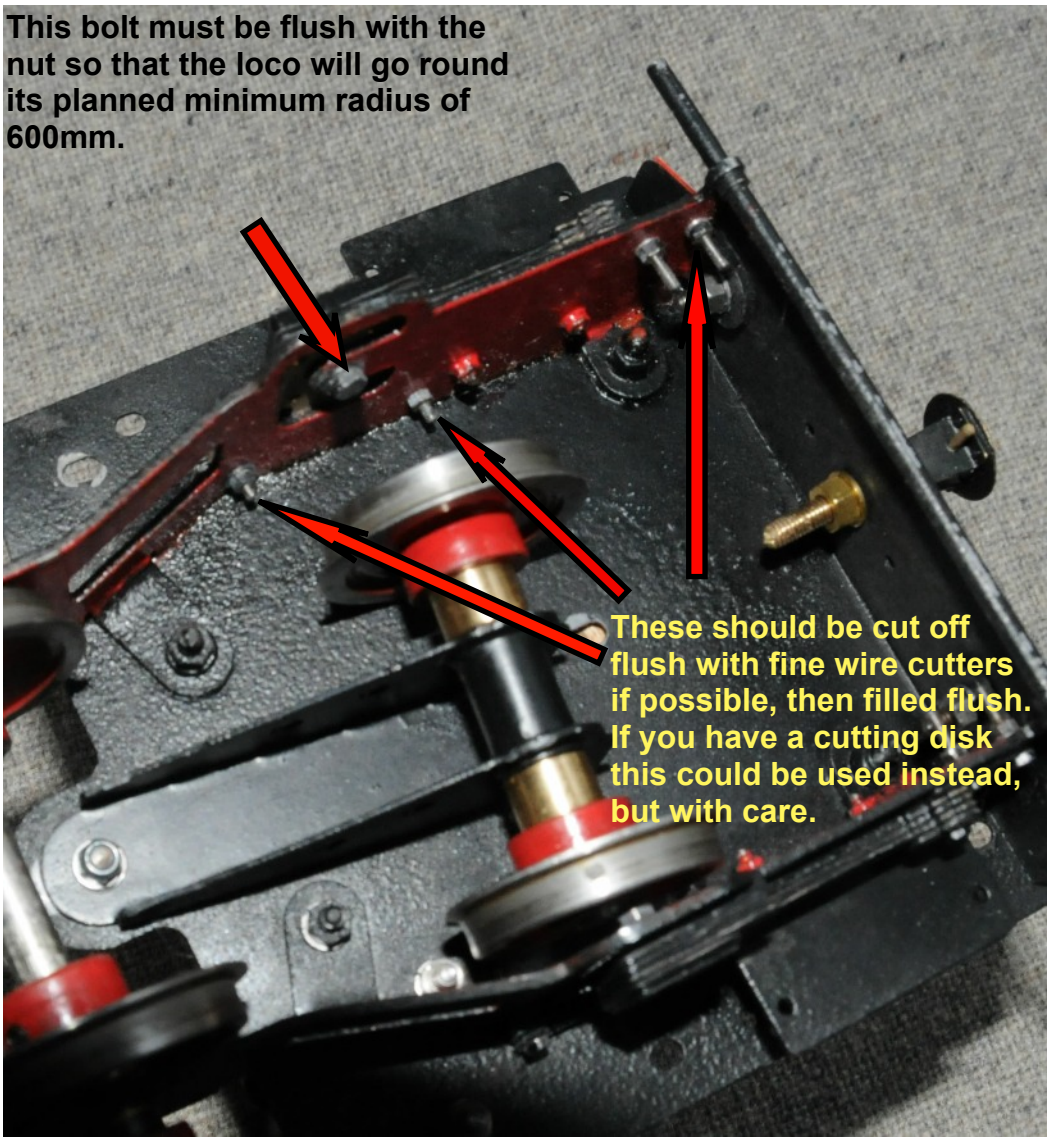
The countersunk screw is now in place and fixed with adhesive so that S7L can be glued over the top, ensuring that it is parallel to the complete assembly.

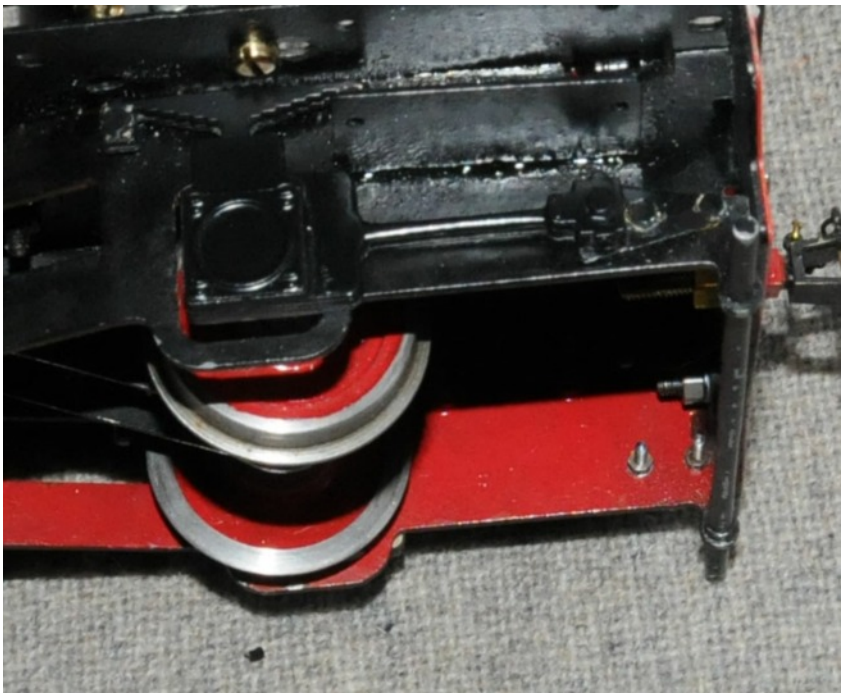
The right hand assembly is made in the same way as the left hand assembly, but remember that it is a mirror image version.

The “Rod” should be gently filled to create a radius so the finished item looks more like the prototype.



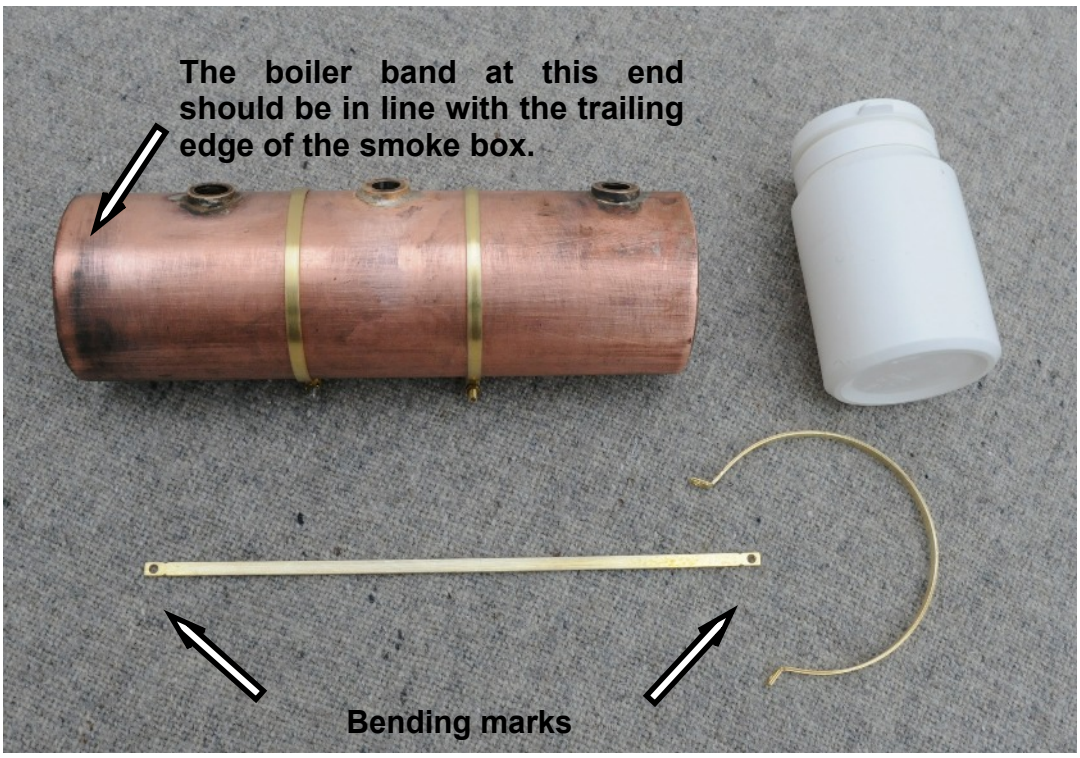
Now paint / spray the assembly and they are ready to fit to the chassis.





This shows the left hand side fitted.

Boiler Assembly



As you can see there are four boiler bands from the etched assembly, BC1-3 and BC4. Note that BC4 is slightly longer and should be placed to the rear so that it surrounds and clamps to the Roundhouse foot. Do not over tighten as the band could break.

I used a plastic bottle of slightly smaller diameter than the boiler to form the boiler bands. This made it easier to clamp the bands in place. There are small marks on the boiler bands to show where the bend should be made so that the fixings can be placed correctly.

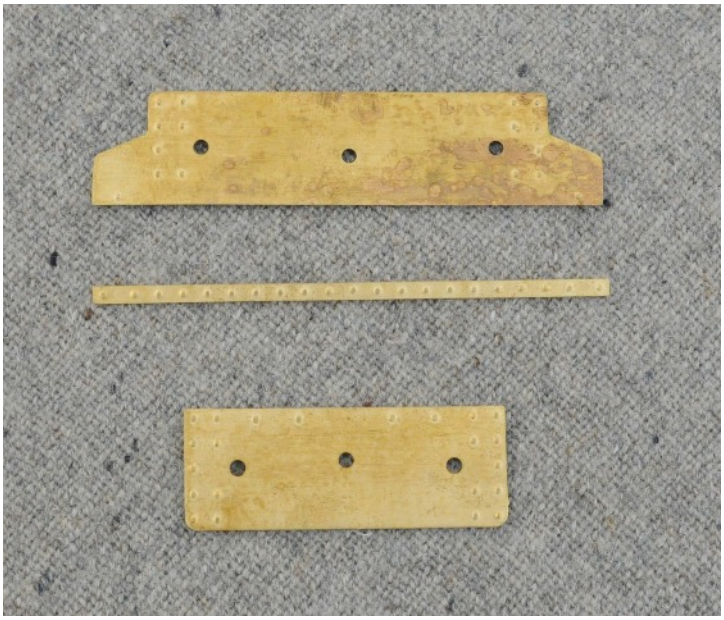
The boiler should be cleaned thoroughly prior to painting.

Note a certificate for the boiler is supplied by GB Boilers, which should be retained.

Note also that the underside of the sand dome may need to be cleaned up so that it fits snugly to the boiler. You may wish to verify this before the boiler bands are fitted and the boiler is attached to the chassis.

The Roundhouse “foot “ is shown, with the boiler band in position. The two screws are used to fit the gas burner.

Buffer Beams

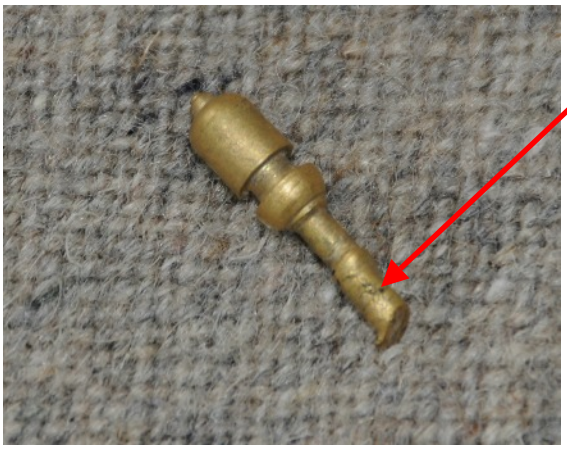


The buffer beams are shown with a single hole for the coupling fixing through the laser cut buffer beam. However if you are using Swift Sixteen or Accucraft couplings that use two fixing points, the holes in both the brass overlay and the laser cut buffer beam will need to be marked and drilled.

The strip of the “rivets” is fitted above the rear of the buffer beam. It should be fixed in place using double sided tape or super glue. Don’t forget that the surfaces must be cleaned thoroughly in advance.

I recommend painting the etched overlays before fitting them to the laser cut buffer beams.

Preparing and fitting the whistle



Remove the excess part of the casting as shown on the left.

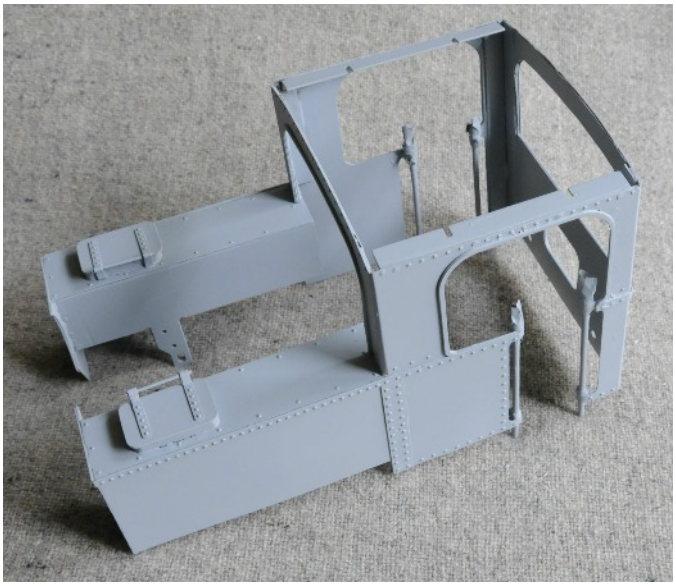
Then gently polish the whistle.

I used a 6BA die to thread to the end of the shaft. The lower section of the whistle was then attached to the roof using a nut and washer.

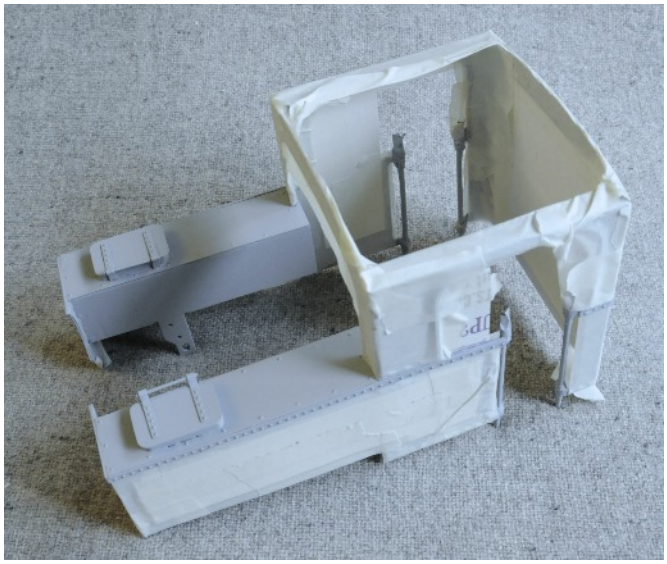
If you cannot use a die then fit the whistle and glue it onto the roof.

Painting

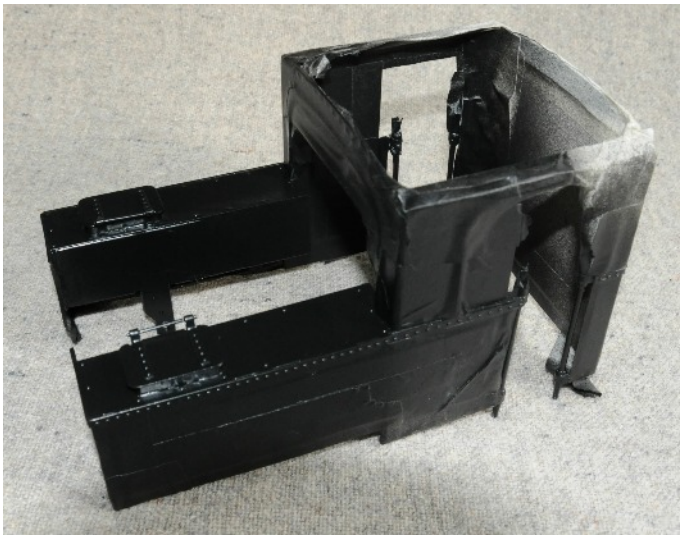
The etched parts are ready for painting but make sure that the brass is thoroughly cleaned and prepared. After each coat of paint, I used very fine emery paper and rubbing compound to smooth out any slight run or imperfection. I used Acid#8 as a base coat as shown. All assemblies can be sprayed with Acid#8 but if you want the top of the cab handrails polished make sure that they are masked before painting.

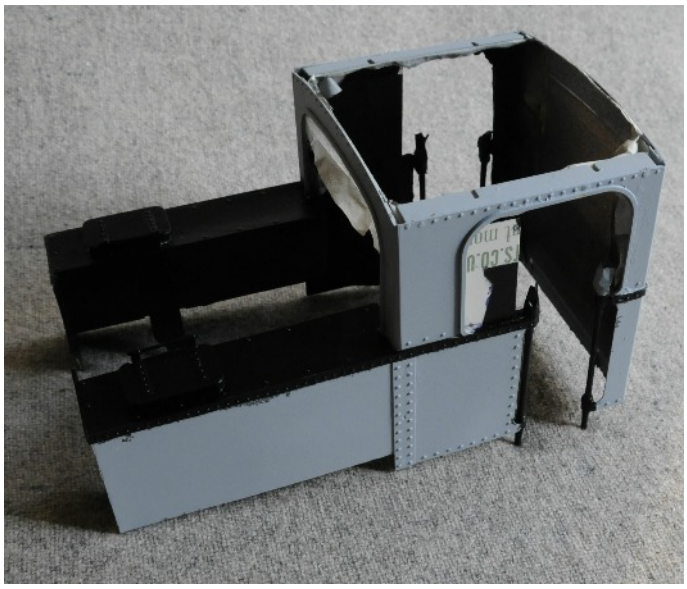


At this point the body was masked to apply black in the required areas.



A satin finish is shown below.





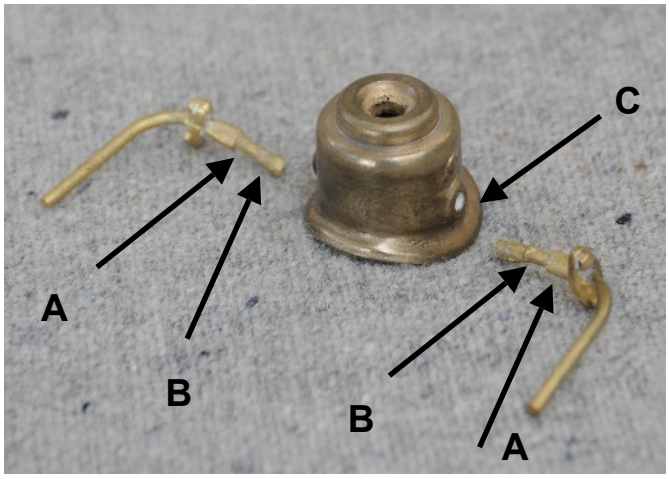
I used Humbrol paint with a very soft brush and applied further coats as required after having gently sanded between the coatings. The masking inside the cab has not yet been removed as I painted it a different colour. Generally, cream is used.

If using radio control parts place all the items in the water tanks.

For manual and R/C the cab is fixed with two nuts and bolts (CWT26) to secure the rear section.

The front is held in position through the frames with a 6BA stud cut to 65mm, which has two nuts and washers on either side to clamp the water tanks brackets.

Arrangement of the sand pipes and their attachment to the sand dome



The sand box is made from three castings. The two pipes are identical. Smooth the sand box casting on the radius, which will then sit on the boiler. Using fine sand paper, gently rub the outside of the casting so that it is smooth and ready for painting.

Cut the ends of the pipe to retain section (A) but remove (B), leaving a small amount for fixing.

Drill the sand box at point “C” so that the pipes can be fitted.

Solder the items in place ensuring that the pipes are vertical and that the “Clamp fittings” are horizontal.