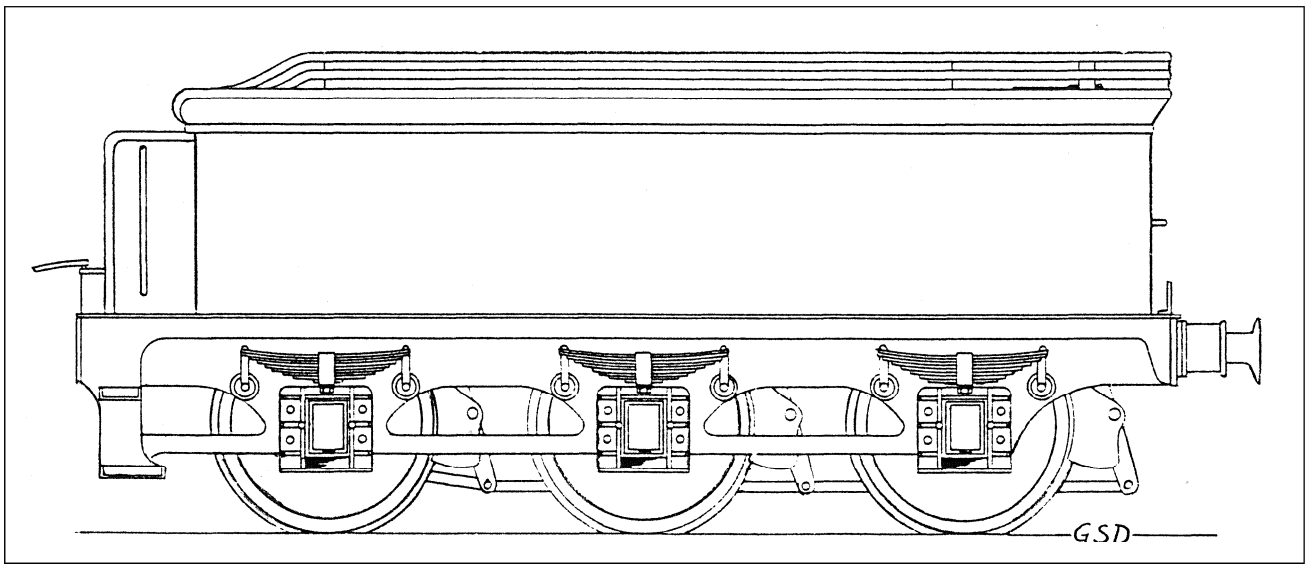
CONNOISSEUR MODELS

Claymore Kits
NBR/LNER 2500 Gallon Tender For Class J36



REQUIRES 4'0", 12 SPOKE WHEELS (Slaters Cat No 7848)

Like the loco I have reproduced George's instructions without alteration. I have included my general hints and tips instructions and I hope that they are helpful. The following notes are some things that I found when I built a tender for a J37.

The flared tops (parts 14) are easier to form than they look and fit very well. I formed the rear bend first and then the front. In this way you can adjust the front bend slightly to get them to the right length. I tack soldered the flared tops in place first, then soldered solid once I was happy with the fit, filling in any slight gaps with solder and blending in as I cleaned up.

I then fitted the half round beading into the half etch at the top of the flare. I fitted a piece from the front, along one side, around the back and then half way along the second side. I then fitted a second piece from the front, down this side to the first piece, blending in the joint with a generous blob of solder. I found this better than trying to fit it all in one length. I found it helpful to anneal the wire with the flame from a cigarette lighter before forming the curved ends.

I found that fitting the coal rails was the most difficult part of the tender construction. This was probably because I am not used to working with half round wire. Scratch builders will probably find this bit a piece of cake but I did things a bit different to George's instructions

I soldered the coal rail supports, parts 19, to the coal rails using 60/40 solder. This enabled me to solder the coal rail supports to the tender flare sides, using the lower temperature 145° solder, in this way there is less risk of the supports coming away from the coal rails. Once the etched coal rails were formed up and fitted with all the supports firmly soldered to the flares and the plated in section soldered to the top of the flares. I sniped out the half etched coal rails at the rear to leave just the supports standing up. I then straightened two lengths of half round wire about 7½" long. I formed these up and soldered them to the supports so that the two ends finished about half way down the etched grooves in the plated in section. I fitted the four lengths of half round to complete the front section. I formed the curved section at the front first and then worked back to a joint with the rear half round wire. Blending in the joint with a blob of solder. I found it a lot easier to fit the coal rails in these six separate sections rather than using two continues lengths.

Connoisseur Models, 1 Newton Cottages, Nr Weobley, Herefordshire, HR4 8QX, Telephone 01544 318263, Proprietor Jim McGeown

GENERAL INSTRUCTIONS

Please read this section carefully especially if this is your first etched brass kit. Many modellers fight shy of working in this medium but the basic skills are relatively easy to acquire. Once you've learned how to form and solder brass you'll find all kinds of modelling possibilities will open up for you.

Assembling an etched kit involves exactly the same skills that a scratchbuilder uses – the only difference is that the cutting out of the parts is already done for you. Some filing and trimming will be necessary from time to time. Where this is the case I have highlighted it in the instructions.

The main skill to master is soldering and I would recommend a Weller 40 Watt soldering iron. This has a 6mm diameter removable copper bit. The bit is shaped like a screwdriver and has a bright coating of solder (tinned). This combination of iron and bit shape is ideal for running fillet joints and has a good reserve of heat that is so necessary for soldering small parts onto large components. Note the shape and condition of a new bit as this won't last long and will need restoring back to this condition.

It is important to keep the bit clean and in good condition as you work. Get a soldering iron stand containing a damp sponge as old oxidized solder is wiped off on this before picking up fresh solder for each joint. If you haven't made a joint for some time you may find that a hard black crust has formed on the bit. Remove this with a brass wire brush (suede brush) and then feed some multicore solder onto each side of the bit to restore a bright surface (referred to as wetting or tinning the bit). After about 8 hours use you will find the bit is in poor condition with holes and a ragged edge. File the bit back to its original shape using a hand bastard file and then polish the surfaces on emery cloth. Coat the bit with Fluxite Soldering Paste (traditionally used by plumbers) and this will prevent the bare copper oxidizing as the iron heats up. Then feed multicore solder onto the bit to form a generous coating and leave to bubble away for a couple of minutes before wiping the excess off to give a bit almost as good as new.

A smaller Antex 25 Watt iron with a 3.2mm screwdriver bit is very useful for small assemblies and detail work such as handrails, but will have insufficient heat reserve for main assembly work. The Antex has a plated iron bit and after a little use with 145° solder a grey oxide appears on the bit that will prevent you from picking up the solder. Touch the bit to some multicore solder and it will flash over the bit wetting it so that you can continue picking up 145° solder. I have found no problems with mixing the two solders in this way.

I use 145° solder for virtually all assembly work. I prefer it in wire form, available from many tool merchants, but it is also produced in stick form by Carrs. I find that its lower working temperature helps to give a quick clean joint and limits the build up of heat which may cause distortion in components. I find that I can hold parts together with my finger ends and make a joint before heat reaches my fingers or other etched parts drop off.

I use 60/40 tin/lead fluxed multicore electrical solder (melting point about 190°) mainly to keep the iron bits in good condition. As it gives a slightly stronger joint than 145° I sometimes use it for small spot joints on handrail wire, lamp brackets etc, but still use extra liquid flux.

For all brass and nickel silver work I use Carrs green label liquid flux. You will soon get the feel for how much to use but more problems are caused by too little flux than too much.

Before soldering components together thoroughly clean both surfaces along the join line with a glass fiber burnishing brush. Using your tweezers or a knife blade etc, hold the parts together in the correct position and with an old paintbrush run some flux along the area to be joined. Still keeping the parts correctly aligned, pick up a small quantity of solder on the tip of your iron and carry it to the joint (unlike electrical soldering when you feed solder into the joint). Hold the iron against the joint just long enough for the solder to flash between the parts. Don't let go of the parts until the solder has cooled – this takes from five to ten seconds. To run a fillet of solder along a joint, wait until the solder flashes between the parts and then pull the molten solder along the joint with the iron tip. Don't load the iron tip with a lot of extra solder work the joint in 1" lengths bringing in small quantities of solder.

Brass is a very forgiving material and if you get something out of alignment use heat from the iron to desolder the joint before starting again. For complicated assemblies it is a good idea to only tack solder parts together. You can then make adjustments by desoldering until you are happy with the location of parts and then solder solid.

When you need to laminate two or more layers of brass together align the parts then carefully clamp them together either in the vice or by holding them with miniature crocodile clips. Run flux around the edges and then go around with the soldering iron. Clean up thoroughly afterwards.

To fit small parts and overlays on to a larger assembly, such as strapping to a wagon side, when you need to prevent finely detailed areas such as planking becoming clogged up with solder tin the back of the small component first, then hold in place on the model and apply flux. Carefully wipe the tip of your iron on a sponge to remove any solder from it (dry iron), and then touch it against the parts to be joined. After a few seconds you'll see molten solder bubbling from the edges. Still holding the parts in place remove the iron and allow the joint to cool. An alternative is to use solder paint (I would recommend Carrs 188 solder paste). As the name suggests this is a flux and solder in one. Simply apply a thin coat of solder paint to the back of the component instead of tinning. Still apply a small amount of liquid flux before you solder the part into place.

Any surplus solder should be removed using a craft knife, I find No 10 curved scalpel blades ideal, then burnish clean with a glass fibre brush. With practice you'll learn how to use the minimum amount of solder to do the job. Flux is corrosive so after each soldering session give your model a good scrub with washing up liquid or Jif. After a day or two any remaining flux residues will show as a green film which should be washed away.

To cut parts from the fret use a sharp Stanley knife on a piece of hardboard or a pointed scalpel blade on a block of softwood. Remove tags and burrs with a fine file.

Three-dimensional parts are formed by folding. On an etched brass kit the fold lines are normally half-etched on the inside of the fold. You'll be able to fold most parts using smooth-jawed pliers. For longer parts folding bars are desirable.

Other useful tools include a bench vice, a good pair of tweezers, a set of Swiss files (get a full set of cheap ones and then buy quality replacements for the three that you use the most), a pin vice with a selection of drills from 0.5mm to 2.1mm plus a few larger sizes that you use regularly (2.6mm for axle bearings etc), some square-nosed pliers and some very pointed-nosed ones, preferably with smooth jaws. Buy cheap tools first and duplicate the most used ones with quality.

Try to complete all high-temperature soldering before attaching any of the cast whitemetal parts. These can be attached with two-part epoxy resin such as Araldite Rapid. Ensure the surfaces to be glued are clean and free of grease.

A better alternative is to solder your white metal castings using Carrs 70 degree low melt solder and Carrs red label white metal flux. The iron should be run at a much lower heat so that you do not melt the castings. I have a domestic light dimmer switch and plug socket fixed to a piece of wood, wired up with a lead and standard mains plug fused at 3 amps to the input side of the dimmer switch and the output of the dimmer switch into the plug socket (remember to continue the earth). Plug your 40 Watt iron (25 Watt iron won't work) with a clean and freshly tinned bit into this and experiment with adjusting the switch until you find the range of temperature at which the solder melts but a scrap casting does not. **Note** as the iron is running at a lower voltage it will take longer to heat up, so when you think the adjustment is correct do check a few minutes later on another scrap casting to see that it doesn't melt. Then scribe a mark on the switch knob to indicate this position.

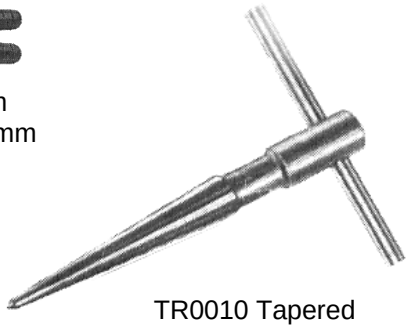
When attaching white metal fittings to brass the surface of the brass must be tinned with 145° solder to allow the solder to grip. The surface of the casting at the joint should be burnished bright. The casting can then be soldered into place with 70° solder and fillets of solder run into any gaps with no risk of melting the casting. Virtually all castings will be improved by a little extra fettling work. Flash can be cleaned out using a sharp pointed knife blade, part lines removed by scraping back with a curved blade and then blending in using a fibreglass brush. The casting moulds tend to distort when metal flows in so check castings for square and even thickness.

SPECIFIC INSTRUCTIONS FOR LOCOMOTIVE KITS

Hole Sizes. Because of the etching process holes will normally be found undersize, for example the turned brass bearings will not fit holes in chassis sides, and a simple fitting operation is required. The best tool for opening up holes of this size is a cheap tapered reamer available at most model railway shows from tool suppliers. By rotating this gently in the hole you quickly open holes to correct size, without risk of tearing the metal. By trial and error on the first hole you will soon establish how much material requires removal. For smaller holes, such as those for the location of casting's etc these are best opened up using a set of cheap tapered broaches, or by twisting a small round file in the hole.

BRC250 6 Piece Cutting Broach Set 0.7-2mm
BRC300 12 Piece Cutting Broach Set 0.65-4mm

TR0005 Micro Drill Reamer 1mm-5mm



TR0010 Tapered Reamer 3mm-12mm

Three very useful tools purchased from SQUIRES, 100 London Road, Bognor Regis, West Sussex, PO21 1DD, Telephone 01243 842424.

Forming Parts. While the boiler in this kit is pre-formed, other forming is best achieved as construction progresses as this enables the parts to be adjusted to each other. To make a tight curve at full metal thickness, such as tank front, bunker rear etc, take a piece of rod slightly under size of the curve required (a drill shank is ideal). Place roughly on centre line of bend, holding in place with thumbs and pull upwards with fingers, forming approximately 30 degrees of the bend. Check with eye and adjust if necessary before forming 60 degree of bend then offer part to model. Final adjustment of fit is easily made on last stage of bending.

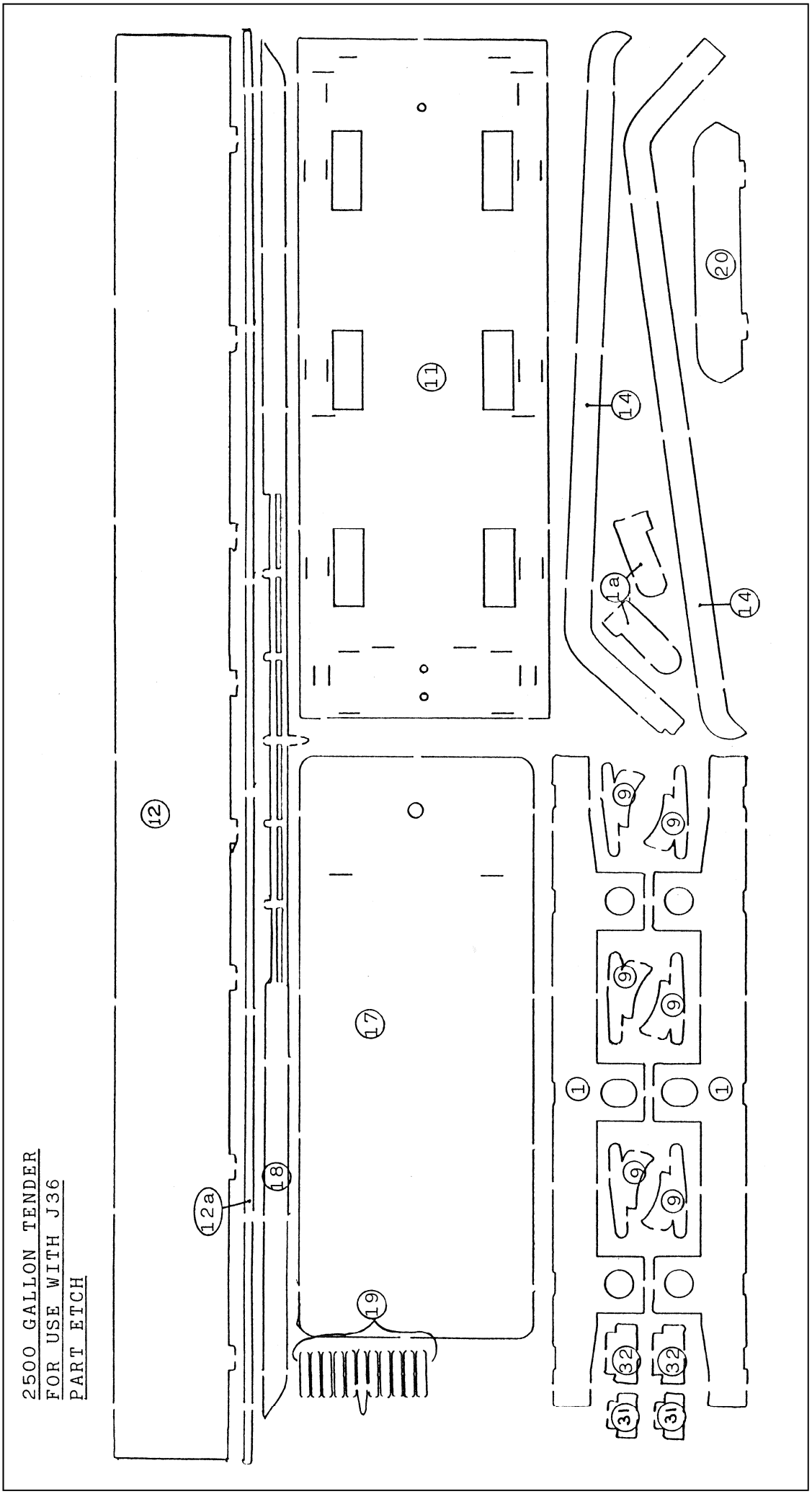
To form shallow curves, splasher tops, smoke box wrappers etc, use a piece of pipe or broom handle. Diameter is not crucial, a piece of one-inch water pipe covers cab roof to smoke box wrapper. Place part over tube and hold in place with finger and thumb of one hand. Work the metal in stages over tube with finger and thumb of the other hand until correct radius is formed.

A technique you may find useful in working metal is to soften and remove the spring from the metal by heating (called annealing). The part is held with pliers and heated in a gas flame. (The gas cooker is ideal). Alternatively use a pencil torch that runs off lighter fuel. Heat part until a purple band appears close to the edges and then remove from heat. Do not overheat part as it will then become too soft and unworkable. Remember you can reheat if not workable. Allow part to cool naturally in the air.

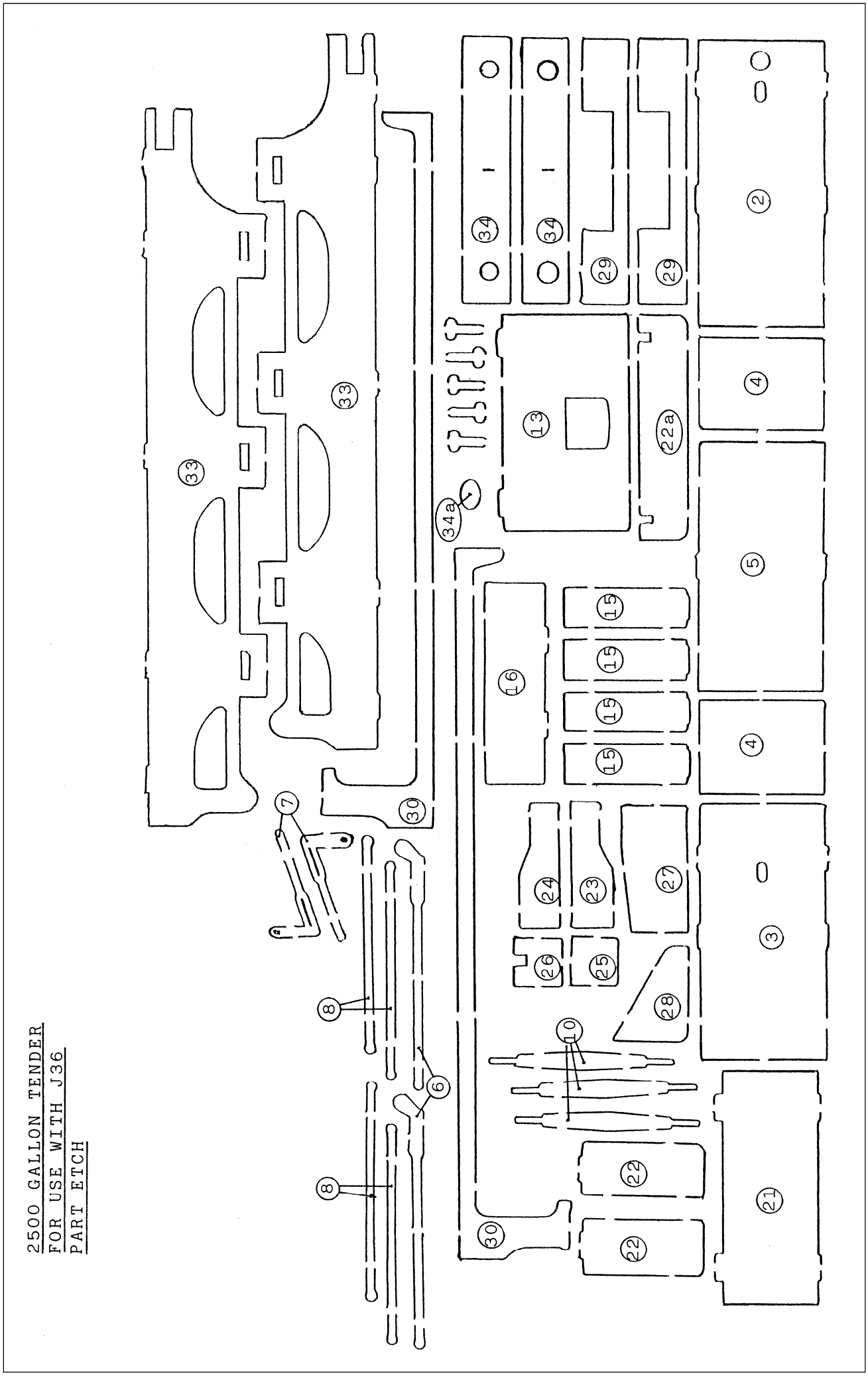
Damaged Parts and Shortages. If you damage an etching during construction it is not possible to replace individual pieces, but I am quite flexible in providing at minimum cost replacement frets (this will contain all the brass or N/S parts). Where a casting is damaged individual items can be replaced as I have full control of production. Because of the complexity of the product, combined with the low volume way it is produced, I try to exercise a high degree of quality control in production and packing but if you find you are short of an item or find a sub standard part please approach me for a replacement.

Fibreglass Scratch Brush. The scratch brush is like a propelling pencil holder into which a fibreglass refill is fitted and which will give a vigorous abrasive action. I find this tool indispensable for cleaning up and removing solder. One very useful tip is to soak the refills in dilute PVA glue (Evostick resin W wood glue let down 50/50 with water and a spot of washing up liquid) and then drill holes in a block of wood and stick the ends of the refills in the holes while they harden off. This will make the refills much more abrasive and longer lasting and also stops the fibres breaking off and ending up in your fingers. You will need to give the refill a good rub to get it started but if you use green label flux you will soon have plenty of rusty tools that need cleaning.

A fibreglass brush and most other general modelling tools can be obtained from Squires Model and Craft Tools, 100 London Rd, Bognor Regis, West Sussex, PO21 1DD, Tel 01243 842424. They do a free catalogue and a very good mail order service.



***Page 2**, Digital scan of page from original paper, J36 tender instructions, created March 2017.*



***Page 3**, Digital scan of page from original paper J36 tender instructions, created March 2017.*

NBR 2500 GALLON TENDER (HOLMES) FOR USE WITH LNER J36.

CHASSIS ASSEMBLY.

1. Inside Frames. Remove from etch.

1a. Brake Rod Brackets. Solder to the half etched section at the inside/front of frames.

2. Front Stretcher. Cut out and fold to right angle @ half etched line.

3. Rear Stretcher. Cut out and fold as 2.

Solder 2. & 3. between the frames, locating tabs and slots, the verticals will lie between the frames to the dotted lines.

4. Axle Stretchers. These fit inside the front and rear axle holes to the dotted lines.

5. Centre Axle Stretcher. Fold to form a "U" and fit between the frames in the remaining top slots, again with the verticals to the dotted lines. Make sure the stretchers are not proud at the top edges. Fit bearings, axles and wheels at front and rear to check there is no rock, if all is o.k., solder these four bearings in position, the centre bearings are left loose to slide in the holes. Now you can turn to the brakes. Cut 3 pieces of 0.9mm wire and 1 length of 1.2mm, all about 2" long. The 0.9mm is for the brake hangers so can be threaded into their respective holes and soldered, leaving an even overhang. DO NOT solder the 1.2mm yet.

6. Front Pull Rods. Remove from etch.

7. Brake Standard Rod. (One will suffice). Remove from etch.

Thread the 1.2mm wire into one frame, add one pull rod (6), the brake standard rod (7) then the second pull rod (6), now thread the wire into the second frame and solder to the frames but DO NOT solder the fittings.

8. Rear Pull Rods. Remove from etch.

9. Brakes. Remove from etch.

10. Brake Cross Beams. Remove from etch.

Temporarily insert the wheels. Insert one cross member (10) between the front pull rods into the holes at the rear end, next fit a rear pull rod to each side. Assuming you have two pairs of hands, slide a brake onto the 0.9mm wire and line up with the wheel, do likewise on the other side. Hopefully, this will stay tight enough for you to fit the other rods and brakes. When all the brakes are on , you can secure the three cross beams and the bottoms of the brake hangers. The front pull rods (6) can now be sodered at the 1.2mm wire about 2mm from each frame, i.e. 20mm apart. Push the standard rod (7) up to the right hand pull rod and, with the rod vertical, solder to the base of the stretcher (2), a little trimming may be needed to attain the vertical. This should be under the position of the brake standard, when fitted. Trim the 0.9mm wire back to the brakes but leave the 1.2mm to overhang by about 6mm each side. You can now put the chassis aside for a while.

MAIN BODY ASSEMBLY.

11. Footplate. Remove from etch and note top and bottom. Solder an 8BA nut over each of the fixing holes. The most forward of the holes is for the drawbar and will need a peg of some form later but BEFORE the floor (21) is fitted. (An 8BA screw will suffice as a peg).

12. Main Body. Carefully form the corners, this can be done over a screw driver, bear in mind they should be 3 1/2mm (6") radius. Make sure the front ends are at right angles past the curves. Fit into the footplate (11). Form a handrail from 0.7mm wire to fit into the two holes at the back and solder .

12a. Top Strip. Represents flaired top base. Solder to top / side edge of main body.

13. Front Coal Plate. Fit into the body between the ends, note the half etched edges of the plate fit behind those of the body ends.

14. Flaired Top. You will see this comes in two halves and needs joining. Now comes the awkward bit - it must be shaped before fitting . Use the same screw driver as before but possibly in a vice this time as you will need both hands. The trick is to have the bottom edge only at the screw driver as this edge needs to be the shape of the body but the top edge of the flair needs a larger radius at the curves. This is easier done than described!

TENDER BODY ASSEMBLY Cont'd.

14 (From previous page).The two back corners are quite simple but you will need more care (and patience) at the front, these will (and should) look as though they are turning in on themselves. When you are happy the corners are not "dipping" at sides or rear, solder to the top edge of the body, edge to edge and remember the top strip(12a) represents the base of the flair. Any difficulty usually comes at the back join which can separate if you let the iron dwell too long.Now turn to the half round wire, to straighten this,place one end in a vice, hold the other in pliers and pull, not too hard though, as it can snap. Take a length and solder into the half etched top edge of the flair, this wire has been annealed so you will find it easily bends against its axis.

15. Coal Plate Supports (Rear). Solder into the slots at the rear of the footplate and those just in front of the centre wheel space.

16. Coal Plate Front Supports. Solder into the slots immediately behind the front coal plate (13).

BEFORE PROCEEDING - have you soldered the 8BA nuts in?

17. Top Coal Plate. Bend to shape, note the front half etched line is opposite to the norm. Fit into the body, onto the supports, the front level with the base of the coal hole.

18. Coal Rails. As before, I know this is the later version but it is a lot easier. Lay face down.

19. Coal Rail Supports. Note the longer one! Solder this over the rails at the centre and it will form a lamp bracket as well. The other positions, I think, should be obvious.

Now turn the rails face up and take another length of half round wire and form one end to fit the front/top of the rails and solder down, then work along the full length but form the other end before getting too far. Do likewise with the second rail. I should point out, here, that it is essential these two rails are soldered down solidly or they may kink during the next operation, which is to bend them to the shape of the top of the flair and soldered at the supports (19) inside the flair top.

If you haven't yet fitted the drawbar peg, you should now, before the hole is covered. If you are content with an 8BA screw it should be at least 1/2" long. Temporarily insert the chassis to be certain the screw goes through the larger, front, hole. Remove the chassis.

20. Rear Division Plate. Solder into the slots towards the rear of the coal plate (17). Depending on the way the flair was formed, this may require slight filing.

21. Floor. Bend to right angle at the half etched line ON THE BACK. Do not fit yet.

22a. Fall Plate. Put a slight curve in this, lengthways. Cut a piece of 0.7mm wire, about 2" long and solder at the rear edge of the fallplate, accross the two openings. Push split pins over the wire, through the openings then secure into the front edge of the floor making sure it hinges. Fit the floor into the footplate in the slots at the front edge and those in the front coal plate (13)

22. Side Plates. Bend a short piece of half round to fit into the half etched front edges and solder in position. Next take some 0.7mm wire and form handrails to fit into the holes, when soldered in, the bottom wire end can be ignored but the top end must be filed flush. Secure into the slots at the floor sides and up to the body front corners.

23. L.H. Tool Box. Bend to shape and secure in left hand corner of floor.

24. R.H. Tool Box. Bend to shape and secure in left hand corner.

25. L.H. Tool Box Lid.

26. R.H. Tool Box Lid. Make sure cut out is to the coal plate.

27. Coal Space Tool Box.

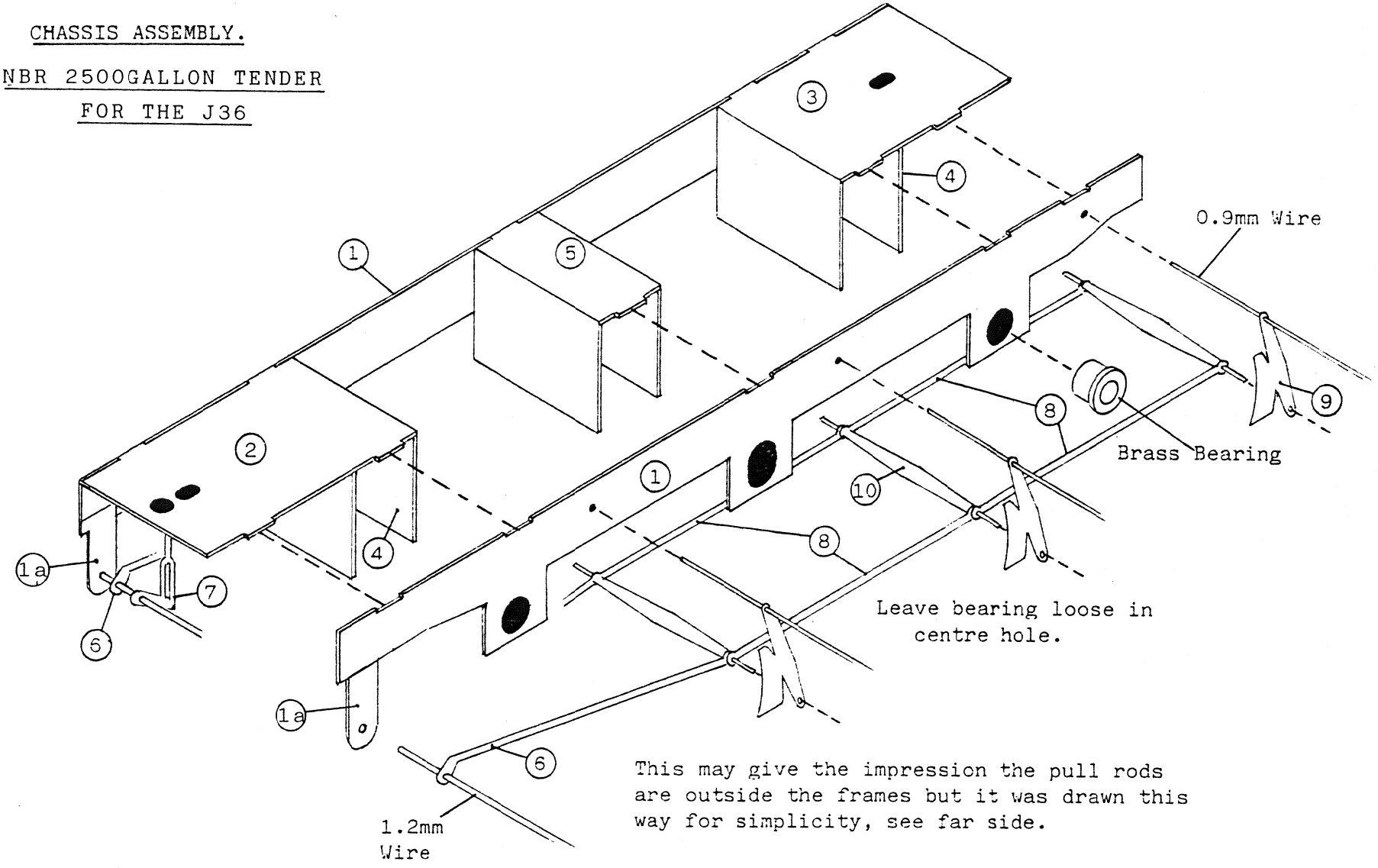
28. Coal Space Tool Box Lid. Curve 27 to shape using lid as a template, solder the lid on and secure into the left hand corner in the front of the coal space, up to the rear of 13.

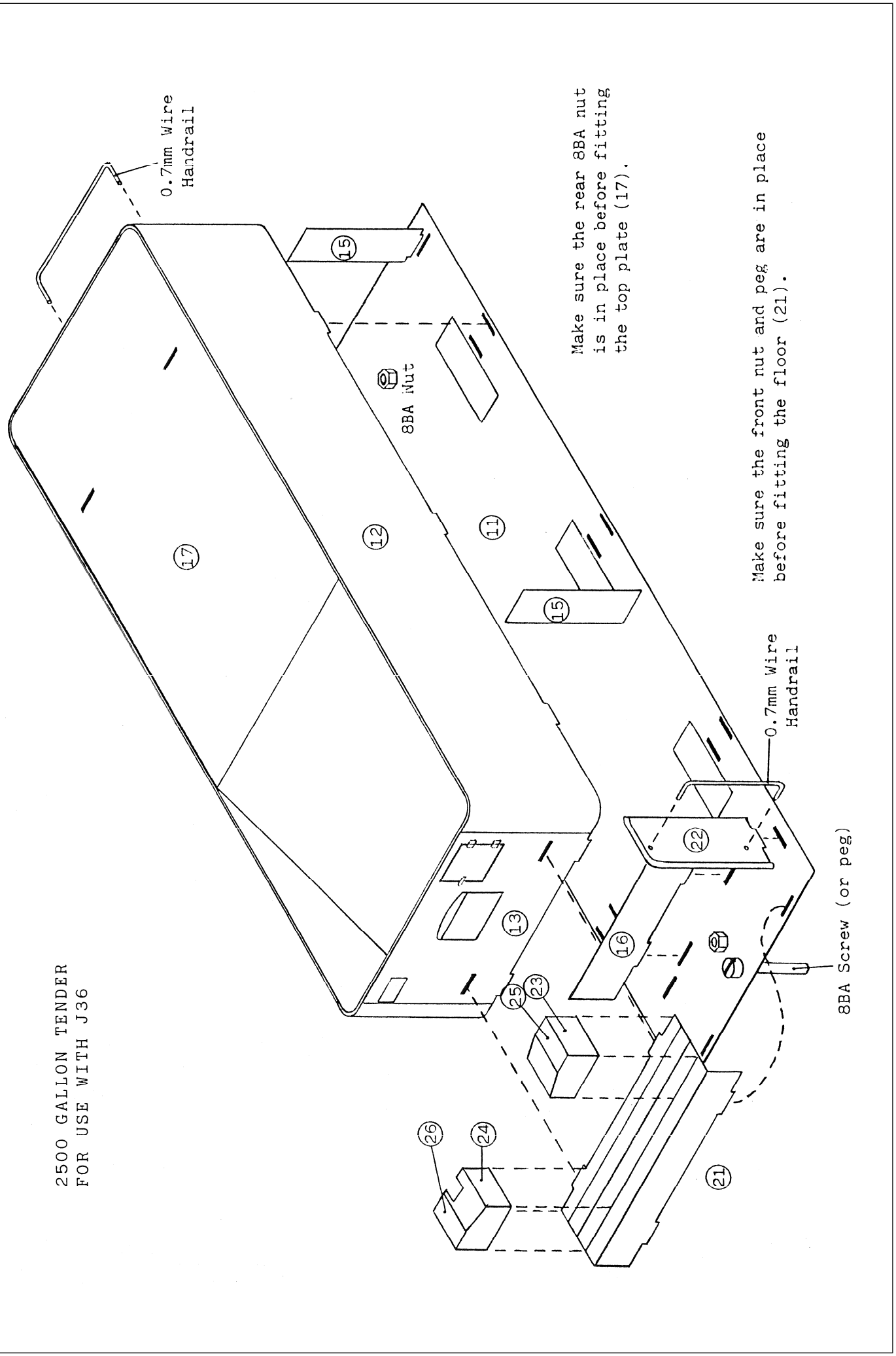
The tender top should now be complete.

CHASSIS ASSEMBLY.

NBR 2500GALLON TENDER

FOR THE J36




2500 GALLON TENDER
FOR USE WITH J36
0.7mm Wire
Handrail
8BA Nut
Make sure the rear 8BA nut
is in place before fitting
the top plate (17).
Make sure the front nut and peg are in place
before fitting the floor (21).
0.7mm Wire
Handrail
8BA Screw (or peg)
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12
13
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17
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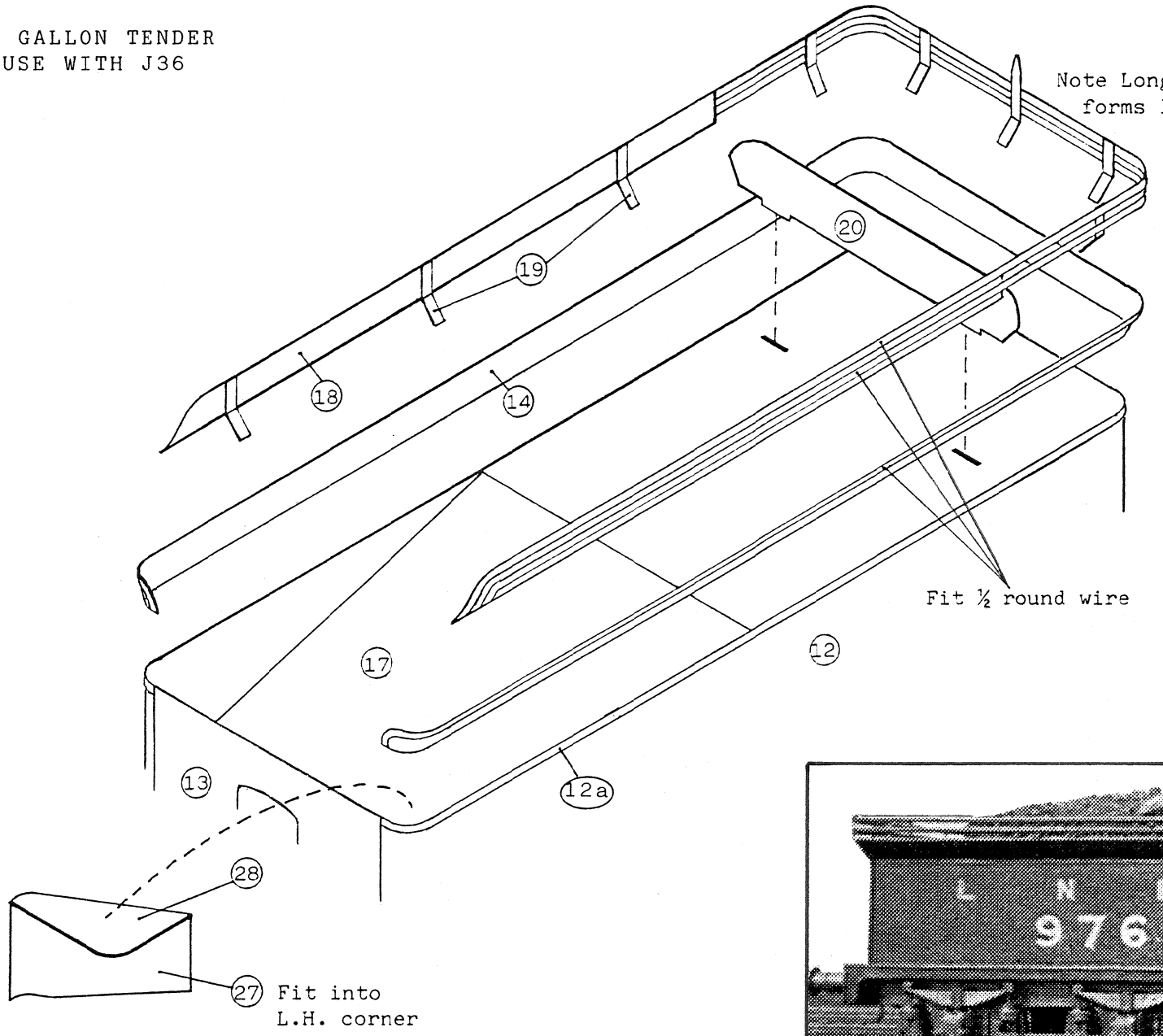
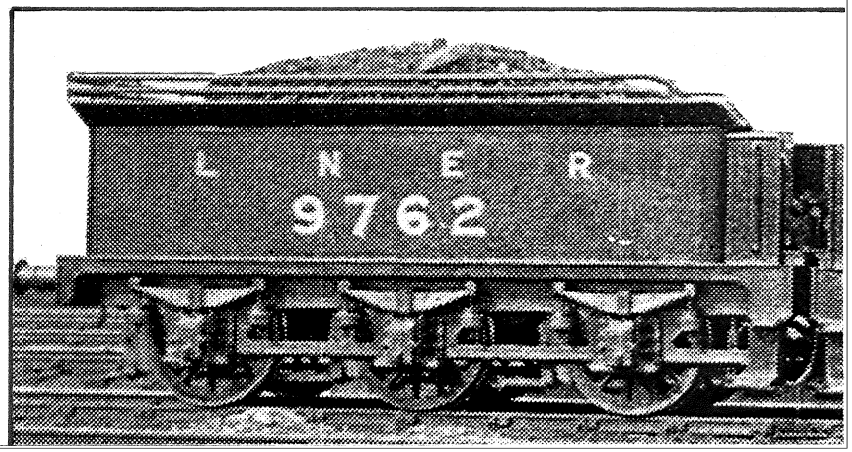
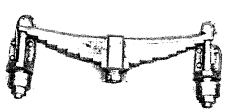
2500 GALLON TENDER
FOR USE WITH J36

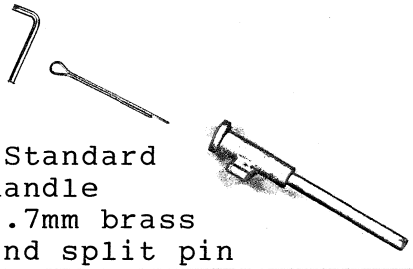






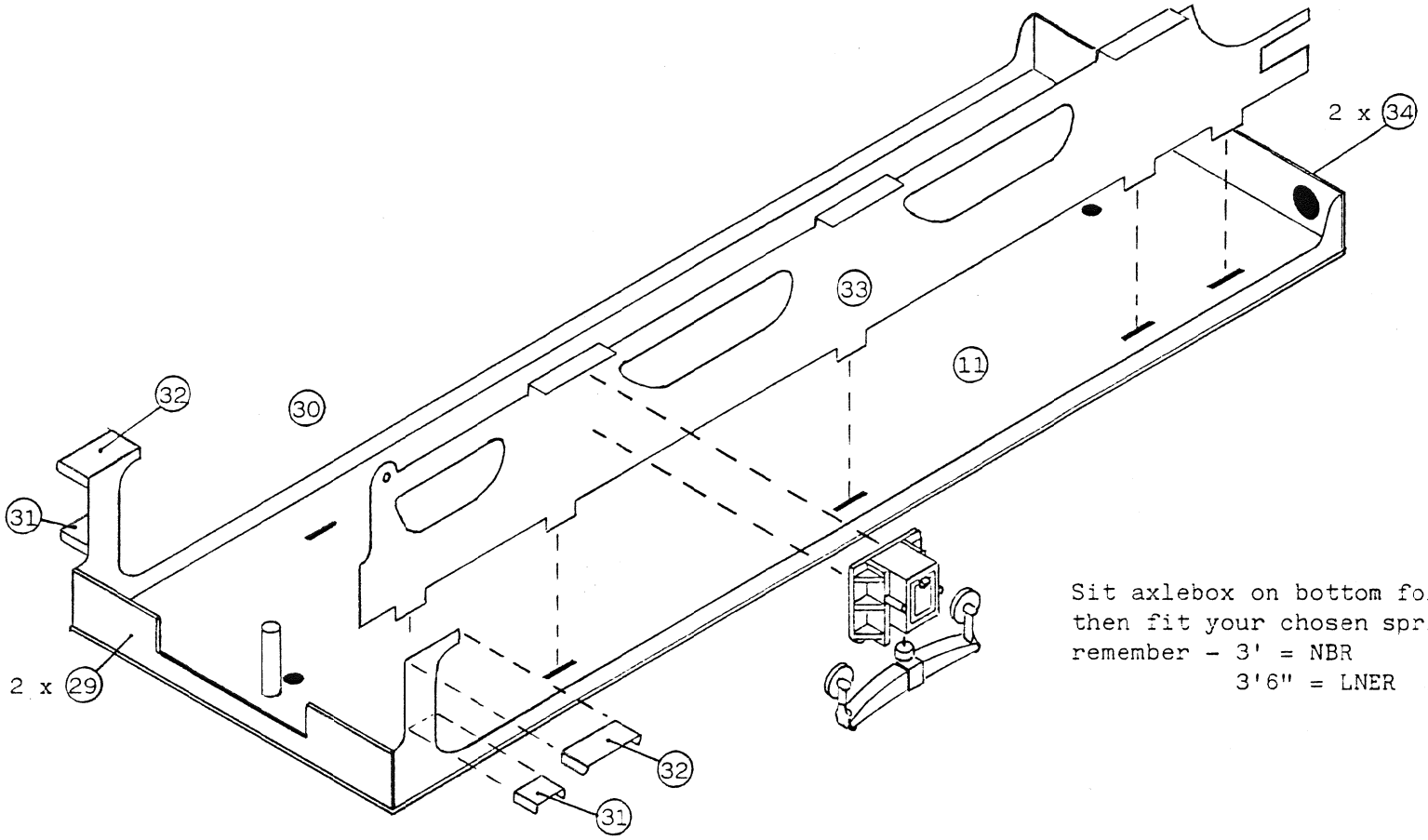
LNER

NBR



Brake Standard
Make handle
from 0.7mm brass
wire and split pin

2500 GALLON TENDER
FOR USE WITH J36



Sit axlebox on bottom fold
then fit your chosen spring,
remember - 3' = NBR
3'6" = LNER

NBR/LNER 2500 GALLON TENDER FOR THE J36.

NOW TO COMPLETE THE TENDER.

29. Front Beams. Solder the two together and fit under the front edge of the footplate, up to the floor tabs protruding below.
30. Left & Right Hand Valances.
31. Top Steps. Bend edges and solder to marks on valances.
32. Bottom Steps. Solder to bottom edge of the step back plate of the valance. Fit the valances into the half etched grooves in the underside of the footplate, steps to the front.
33. Main Frames. Bend up the axlebox supports the solder the frames into the appropriate slots in the footplate. The hole at the front/base of each frame should not be there - I made the same mistake on the 3500 gal. tender as well! You can ignore it, fill it in with solder or insert a tiny piece of 1.2mm wire to simulate the pull rod carrier. Once again - sorry.
34. Rear Buffer Beams. NOTE THE TOP EDGES. Solder the half etched beam to the other and, remembering the top, solder at the rear of the footplate, up to the valance ends.
34a. Works Plate. Solder dead centre at the rear of the body, 18mm from the footplate.

All the brass work should now be complete.

Fix the white metal axleboxes to the side frames, resting on their supports, make sure they sit centrally. The springs fit above these, the nut under the lower spring resting on top of the axlebox, again - centrally.

N.B. THE SHORT (3') SPRINGS ARE FOR NBR AND VERY EARLY LNER, THESE WERE LATER ALTERED BY THE LNER TO 3'6" AND EMPLOYED DIFFERENT HANGERS.
Both types of springs are supplied.

Find the cast white metal brake standard and carefully drill a hole in the top to take a split pin. Form a small "L" shaped handle from 0.7mm wire. Secure the pin, with handle upright, into the standard. Fit over the right hand tool box, its base going into the hole in the lid and its back into the half etched rectangle in the coal plate.

Finally, the tank filler, fit this into the hole at the rear of the tender, its hinges pointing back. I have it on good authority (an ex fireman) that these had a simple lift off lid with a single, central, handle. Whilst I have altered many things over the years on the word of a driver or fireman because, let's face it, if they don't know - no one does, that type of lid does not show on my General Arrangement Drawing nor does "Maude" carry such a lid but the J36's numbered 168 and I would be very surprised if they were all the same and I haven't got around to the same tender on some 4-4-0's yet! Anyway, the hinges are easily filed off and a wire handle should be no problem, should you feel it would be the better bet, afterall, although I am ashamed to admit it, according to my old "stock books" of Ian Allen fame, I never saw any J36's at all, so I would be the last to argue!