



RT Models

NGLK004 4mm scale, 009 gauge Harrogate Gas works Peckett 0-6-0ST

History

The prototype was built in 1944 by Peckett and Sons of Bristol for the Harrogate gasworks.

The locomotive was built with a reduced cab to fit the lines restricted tunnel.

After the Peckett was finished with, it was preserved by the Ffestiniog Railway and named volunteer but was never steamed.

The loco is now preserved on the Statfold Barn Railway but with a much taller chimney and different cab.

The loco was painted a medium green with red frames.

A further history of the loco and the Harrogate Gas Works line can be read along with useful photos in "Harrogate Gas Works" published by the narrow gauge railway society. ISBN 0 9507169 6 0

Notes

This is a multi media kit comprising of different materials.

Note that some white metal components like the footplate may be shorter than the etched frames due to the shrinkage that can occur during casting, the etched parts may need to be trimmed at the ends to match the cast parts or vice versa.

On the brass frets, there's on the outside practice areas for forming rivets, it is recommended you try on these first before committing to the actual model parts. These can be achieved by pushing into the half etched holes either for example a sharpened nail or the point of a compass.

Tips on Assembly

If you are new to etched kits these tips will help you with general assembly of not just this kit but also other etched kits.

- For those who haven't soldered before, it isn't as hard as you may think and is something I recommend in doing, we all have to start somewhere. A few simple tips here should help you to begin with.
- Carefully cut the parts from the fret using a heavy duty Stanley knife on a hard surface or green cutting mat not too close to the required components as this could distort them. The tabs left on can be filed carefully with a needle file.
- When forming bends on half etched lines always try to use something to help form them like long nose pliers or a vice. Usually with most kit's the fold line is inside unless otherwise stated in the instructions.
- Start by practicing on scrap pieces of brass or nickel silver like the fret holding the pieces on, this way you won't ruin a expensive kit and it's a good way to gain the skills.
- A Soldering Iron capable of the job is a must, in the case of this kit a 25 iron is very capable.
- A clean tip is also a must as a dirty tip won't allow the heat to transfer well, this can be cleaned by wiping it on a damp sponge usually supplied with soldering iron stands or a tip cleaner from antex.
- The parts you wish to solder should also be cleaned like with fine wet'n'dry
- Also the use of flux is recommended as this will help the solder flow much easier like frys power flow flux or something from the carrs range. When finished soldering, wash the flux off with warm water and a old toothbrush, don't leave this on the model as it won't allow the paint to adhere and can be corrosive in some cases.
- Try to avoid using electrical multicore solder, use plain solder like 145, again this is available from carrs.
- Pre-solder (tinning) the parts you wish to solder together, this makes life easier when you come to soldering the parts together.
- Try not to use more solder than necessary as this will create more work in cleaning up the model and can also flood the detail, again plenty of flux helps the solder flow well.
- Cleaning the finished model can be done with wet'n'dry and a fibreglass pencil, i find it best doing this in a bowl of water as it stops the fibres going everywhere of which they can hurt and irritate.

Steam loco valve gear and chassis instructions

Test the chassis as bought to make sure it works well before modifying it

Loco dis-assembly

First turn to the Bachmann/ Graham Farish 08 shunter, you will need to first remove brake gear on both sides with a pair of pliers, there is a strong chance of damaging these as they tend to be glued in well but are not required for this loco kit.

Next the 4 tiny screws around the corners of the chassis need un-screwing to release the body, don't forget to remove small wire at the front of the loco as well.

Finally you need to remove the 08's outside frames, to achieve this carefully pull this upwards whilst resting your finger on the motor, the frame may be glued in place just like the brake gear may have been.

For the moment, it would be best to work on the body then come back to the chassis later as this can be used as a guide for the frame sides.

Coupling Rods

Before removing the coupling rods from the fret, drill out the holes with a 1.4mm drill.

This should provide a perfect fit over the Graham Farish Crankpin bosses.

Next remove the coupling rods from the fret with a Stanley knife on a hard surface.

Carefully file the coupling rods where the tabs were present and also where you drilled the holes to de-burr them, when done re-drill again to make sure the holes are clear.

Now carefully pull the crankpins off the cranks on the chassis, it is recommended doing this inside a box to avoid losing them. Put these carefully aside for later use.

Now fix the coupling rods to the cranks, once you are satisfied that these fit well push the crankpins back on the front and rear cranks only.

Check the chassis how it runs by pushing the chassis along by hand by un-screwing the gearbox tower and unclipping the motor so the worm gear clears to allow the chassis to be pushed along.

You can test the chassis under power to check that it runs freely with the rods on.

If it does bind then the rods may need to be removed and drilled out with a slightly larger drill 0.1 mm bigger.

Crossheads, Slide Bars and Connecting Rods

Carefully remove the parts from the fret with a Stanley knife on a hard surface.

File the remains of the tabs off the parts.

Fold up the slide bar units with the half etch line on the inside of the fold and solder the inside of the folds to strengthen them.

Now take one of the crossheads and push a pin through with the head on the pin on the outside, next place one washer/spacer on the back of the cross head pushing it over the pin.

Next push a piece of paper like 80gsm printer paper for a bit of play in the parts or cigarette roll up paper for tight clearances.

Now push the connecting rod over the pin as tightly as possible onto the paper. A drop of oil on the paper should minimise the risk of solder clogging the parts.

As an alternative pins can be replaced with 16BA countersink nuts and bolts.

Place a small amount of flux onto the back of the connecting rod and pin, then very quickly place the soldering iron onto them to solder the pin in place, don't leave the iron on for too long as it risks the solder flowing where you do not want it.

Don't worry about how tidy it is as once you are satisfied the joint is strong enough, cut the remains of the pin and file the rear till you are nearly flush with the connecting, not file flush with the rod as you need some solder to remain.

Check that the rod moves freely, if so pull the paper out of the crosshead and repeat for the other side.

If not, sometimes just forcing it slightly may be enough but not so to bend the parts.

If this doesn't work then you will need to unsolder the parts, clean them up and start again I'm afraid, I have done this myself with kits I've built over the years.

Now push the crossheads onto the slide bars, if they don't move freely or don't go on at all then the slide bars may need a bit of filing on the tops.

Once you are satisfied that it works freely you can turn onto the last stage.

Cylinders and Chassis Keeperplate

Now Clean up the replacement keeper plate of flash and of any mould feeds, remember not to remove the 2 stumps coming out of the sides at the front and also the little prongs as these help in reducing the side play on the wheels.

Unscrew the old keeper plate and screw back in its place the replacement version.

Now we can turn to the Cylinders, clean all traces of flash and mould feeds with needle files.

Now take one of the Cylinder blocks making sure it is the correct one for your chosen side, the small bars sticking out of the ends of the cylinder blocks should face towards the wheels.

Now check that the Cylinder covers fit onto the Cylinder blocks, once they do put these aside for the next stage.

Test the cross head and slide bars onto the cylinder blocks to make sure they work freely, if not then the top and/or bottom bar on the Cylinder block/s may need thinning down with a needle file.

When you are satisfied put the crossheads and slide bars, check the throw of the cross heads with the cranks on the wheels and the slidebar.

Check where you will want the slide bar to be positioned so as to allow the crosshead to have full travel as well. If needed trim some of the end of the slidebars so they fit within the cylinder block.

When you are satisfied with everything you can sandwich the slide bars with the Cylinder cover to check it works freely. If it does so, glue the Cylinder cover on preferably from the outside so the glue doesn't end up oozing onto the working parts if you was to push the cylinder cover on.

Repeat for the other side.

Now determine for your needs and how you feel about it, how many washers you need off the connecting rod fret between the coupling rods and the connecting rods, try to keep if possible the connecting rods as parallel as possible.

Now trim the remaining pins to a suitable length and push through the connecting rod and any washers you may wish to use into the crank which the pin should be a push fit.

Body Instructions

Running plate

First, remove the etched chassis sides from the fret and file the remaining tabs off.

Now carefully form the rivets with either a sharpened nail or the point of the compass.

Remove the chassis side plates and clean the tabs of these as well.

Now solder the chassis side plates to the etched chassis sides.

Clean the remaining will flux off with warm water and a old toothbrush.

Cleaned up with a needle file and a glass fibre pencil any solder on the outside of the frames, make sure you don't file of the rivets you have just formed.

Now take the cast two footplate sections and carefully clean these up of flash and moulds feeds. A

At this stage, drill out the dimples with a 1 mm drill.

3 extra holes will need to be drilled on the cab section of the footplate following drawing.

The large hole on the front footplate section that is in a raised area to take a 10BA nut needs to be drilled out with a 1.8mm drill bit. Its best doing a bit at a time from each end till you get to the middle then drill all the way through to ensure it is straight to accept the bolt later on.

Do a dry run with the sides, depending on the shrinkage of the white metal castings, you may have to trim the front ends of the etched chassis sides.

You can shorten the ends by either cutting them of a pair of old scissors and/or filing them down.

DO NOT shorten the rear of the chassis as these match the etched cab.

Once you are happy with these, attach the etched chassis sides to the front cast footplate with either superglue or araldite, it will be recommended you use the disassembled Graham Farish 08 chassis as a guide to make sure that your chassis sides are fitted squarely so as not to interfere with the cranks as this would affect its performance.

Now attach the rear footplate to the chassis sides and to leave this to set.

Turn to the etched buffer beams and form the rivets on the rear one and depending on your prototype the front one as well. For the moment, only remove the front buffer beam from the fret if you are going to use it or cleanup the cast buffer beam.

Now attach your front buffer beam to the front footplate.

Once the whole unit has dried, file any chassis frame sides that may be sticking out above the top of the running plate.

Now carefully glue in place the 10BA nut at the front, make sure NO glue gets inside the nut itself.

You can return to the locos chassis to add the valve gear and outside cylinders.

Boiler and saddle tank

Now take the cast lower boiler section and the saddle tank and clean these up of mould feeds and lines with a needle file and fine wet 'n'dry paper.

Now drill the side clack valve dimples and dimples under the saddle tank lower section on the cast lower boiler section with a 0.7mm drill bit.

Now temporarily place the lower boiler section into the saddle tank and make sure the sides extend right up to the sides of the saddle tank. Now do a dry run with the chassis placed under footplate and putting the saddle tank / lower boiler section on top to make sure it clears the motor. If it doesn't then some filing may be needed.

Once you are satisfied that the boiler doesn't foul the motor, you can glue the cast lower boiler section and saddle tank together but NOT to the footplate.

Place the lower boiler section onto the footplate and the saddle tank on top, check that the saddle tank is level with the use of a ruler, vernier gauge or a piece of card along the footplate, Once you are satisfied you can glue the lower boiler section and saddle tank together with araldite to give you time to adjust or superglue.

You may need to add some filler to the joins underneath, when this has set and you've cleaned it up put this aside for later.

Cab

With the cab it is recommended that the main etched cab part is annealed (soften) to help in forming its shape.

This can be achieved by heating it on a gas or electric hob cooker by holding with a pair of well insulated long nose pliers just till the part discolours slightly. The whole sheet can be annealed during this process.

Be aware this will get very hot

Let this cool down before handling.

Once it has cooled down, rub it down with some fine wet'n'dry paper.

Now remove the etched main cab part from the fret and file any remaining tabs.

Form the rivets on the main cab part and also the cabs front and back, note that each end on the cab main part has different patterns just like the prototype! Do this with a sharpened nail or the needle point of a compass.

Now remove the etched cab front and back from the fret, form the bottom of the rear cab with the half etched lines on the inside, both 90 degrees.

With the use of the etched cab front and back as a guide, start to form the main cab part.

The best way to do this is to start in the middle by rolling it on a wad of tissues with a thick brass bar or wooden dowel. Do this quite a few times going back and forth from the top of the cab doorways till the cab is shaped correctly to the cab ends.

Now form the cabs sharp curves to complete the shape with the use of a steel ruler, once again take your time doing this and use the bottom of the cab ends to determine where to form the curves.

Once you are happy with its shape, you can now turn to soldering it together.

Pre-tin the areas beforehand, then starting at the bottom of the cab, start to solder upwards following it round making sure along the entire way that the cab ends are still in the rebates of the main cab part. Make sure the recess on the outside midway is in line as this could cause problems later when soldering the cabs strips.

Now solder the rear buffer beam to the back of the cab with the rivet strip soldered on top of the buffer beam, butted up to the bottom of the cab.

Fold up the cab rear strip and solder this into the recess going around the cab. Now solder two separate small straps to the sides at the front of the cab.

At this stage you may wish to solder the cab Handrails, before doing this slightly bend the ends of the cab Strips in at a 45 degree angle in the doorway.

Now take a length of 0.45 MM brass wire and carefully solder this to the back of a strip in the doorway. Once you are satisfied, trim the remainder just a little longer than the cab. Repeat the other 3.

Now carefully solder the front and rear cab Spectacles make sure they are lined up correctly.

Lastly, carefully fold the tops of the top of the doorway edging to match the cab and solder these into place.

Detailing/Saddletank & Boiler

Now drill all the dimples on the saddle tank and the 4 on the lower boiler section with a 0.8mm drill EXCEPT the central 8 dimples on the front of the saddletank.

Some holes may need opening out more later on with other parts being added.

Glue the smokebox door to the front making sure it sits properly.

Take the clacks and secure these in the holes in the sides of the lower boiler section and let these dry. Then carefully bend the clacks and pipe slightly as outlined in fig one, the whitmetal usually is able to cope with this.

The clack valves will need some slight drilling to fix the clanks and pipe in place.

By placing the clacks and pipes temporary on the clack valves, you can either carefully drill into the end of the firebox protrusion which will be difficult or trim the pipe enough to be a tight fit against the firebox protrusion. Once you are happy with this, glue these in place.

Now drill the hole centres of the hand wheels with a 0.8mm drill and then remove these from the fret and attach to the ends of the clack valves.

Now trim the chimney so that when inserted in the hole at the front, the bottom of the chimney cap is 0.5mm above the saddle tank. Make sure this sits square before glueing in place.

Now glue the water filler, safety valves and whistle in place.

Now add the handrail knobs by carefully sliding 3 on at a time onto the 0.45mm brass wire for the 2 top longer handrails, insert the handrail knobs in the holes and glue these from the inside. Then trim the handrail wire leaving 1mm sticking out of each end. Repeat for the lower sides and front handrails.

Put the unit aside for attaching to the footplate later.

Detailing/Footplate

First attach all 4 sandboxes to outer holes on the footplate, use the cab and saddletank/boiler to check that they do not foul them.

In the nearside, attach the lubricator to the central hole. Then drill a 0.5mm hole in the centre to accept a short length of 0.45mm brass wire, then attach a hand wheel to this and trim the access wire.

Now attach the etched reversing rod on the offside, the end may need trimming due to the firebox protrusion on the saddletank/boiler unit, again use the latter for checking nothing fouls it.

The saddle tank unit can now be attached to the footplate, it would be best to place on temporarily the cab so you can butt up the saddle tank unit to it.

There is also a locomotive jack and toolbox included should you wish to add these to your model.

Detailing/cab

The etched frame extensions on the cab detailing sheet will need to be attached to the rear of the cab footplate.

Now drill on the O/S in the centre next to the raised area on the footplate with a 1mm drill or bigger, and then attach the etched reversing lever into the hole.

Now drill out the dimple on the front of the firebox. Now attach the firebox on top of the raised box structure, make sure you leave enough of a gap from the saddle tank for the cab to fit back on.

Now attach the coal bunker to the N/S of the firebox.

Now glue the brake standard to the rear of the footplate.

Attach the regulator to the front of the firebox.

The final detailing of the firebox can be carried out by drilling out in the centre at the top of the firebox, then attach the manifold unit to the top, the etched brass handwheels can be added all around the manifold to the 4 wheels.

A gauge E23 can be added to inside the cab to the front inside centrally between the spectacles.

Couplings

There is two types of couplings provided, one a fixed scale coupling , the other a pivoting coupling to help with going round corners.

With both couplings, you would need to fit these at the correct height to match your rolling stock.

If using the pivoting coupling, you will need to drill both the coupling heads shank and coupling box with a 0.5 MM drill.

Then insert the couplings shank into the coupling box and drop a pin from the top through both parts.

The bottom would need to be secured with a sparingly amount of superglue. Trim the excess pin off.

Now to the appropriate locating holes for the couplings with a 1.5mm drill and secure the couplings with araldite or superglue.

Parts List

Cast Whitemetal

1x Front footplate	C1
1x rear footplate	C2
1x Cast bufferbeam	C3
1x smoke box/lower boiler section	C4
1x Saddle tank	C5
1x Smoke box door	C6
2x Clack valves	C7
2x Clack Pipes	C8
1x Chimney	C9
1x water filler cover	C10
2x Safety Valves	C11
1x Whistle	C12
4x Sandboxes	C13
1x wakefield lubricator	C14
2x Locomotive Jacks	C15
1x locomotive toolbox	C16
1x Firebox	C17
1x regulator	C18
1x Brake standard	C19
1x Coal bunker	C20
1x manifold unit	C21
1x N/S cylinder block	C22
1x N/S Cylinder Cover	C23
1x O/S cylinder block	C24
1x O/S cylinder cover	C25
2x Scale couplings	C26

2x pivoting couplings C27

Cast Resin

1x replacement chassis keeperplate R1

Brass fittings

1x 10BA Nut and bolt B1

12x short handrail knobs B2

3x lengths of 0.45mm brass wire B3

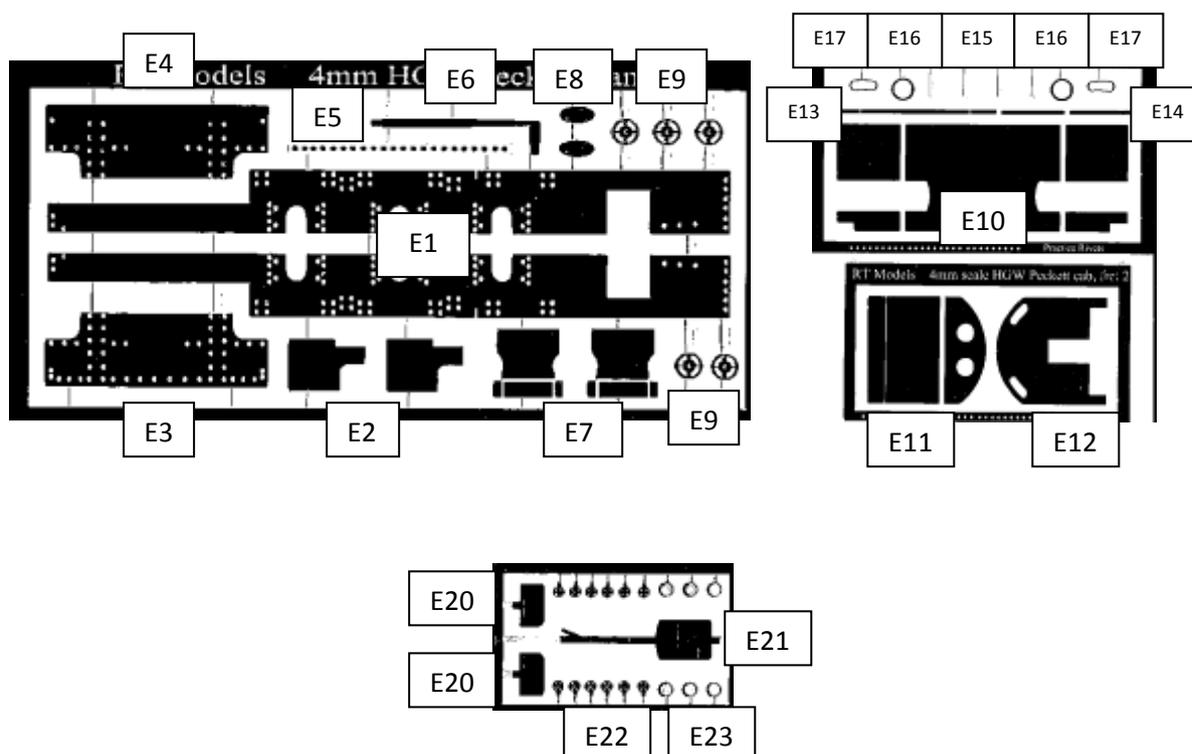
Etches

1x chassis frame etch

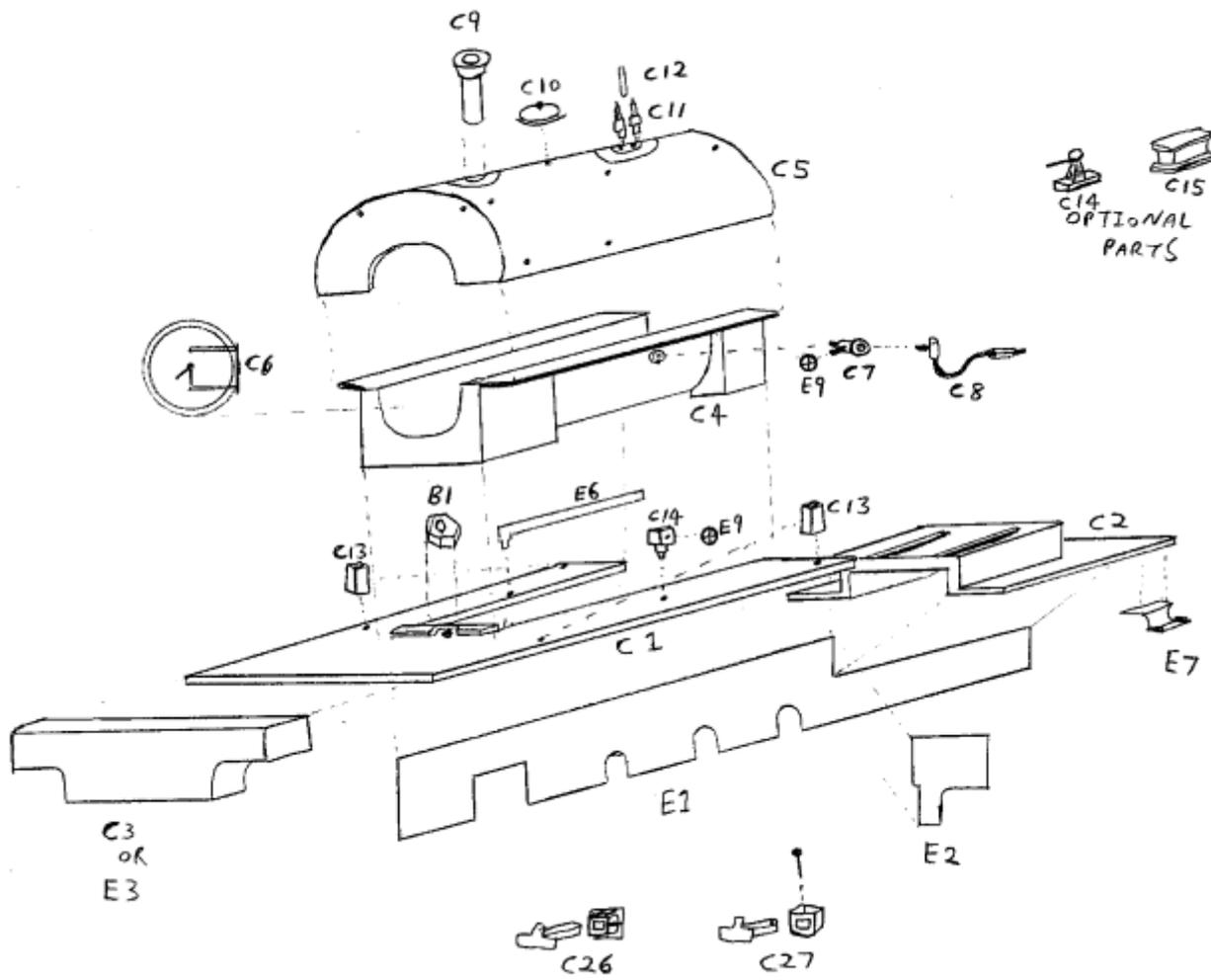
1x cab side etch

1x cab rear etch

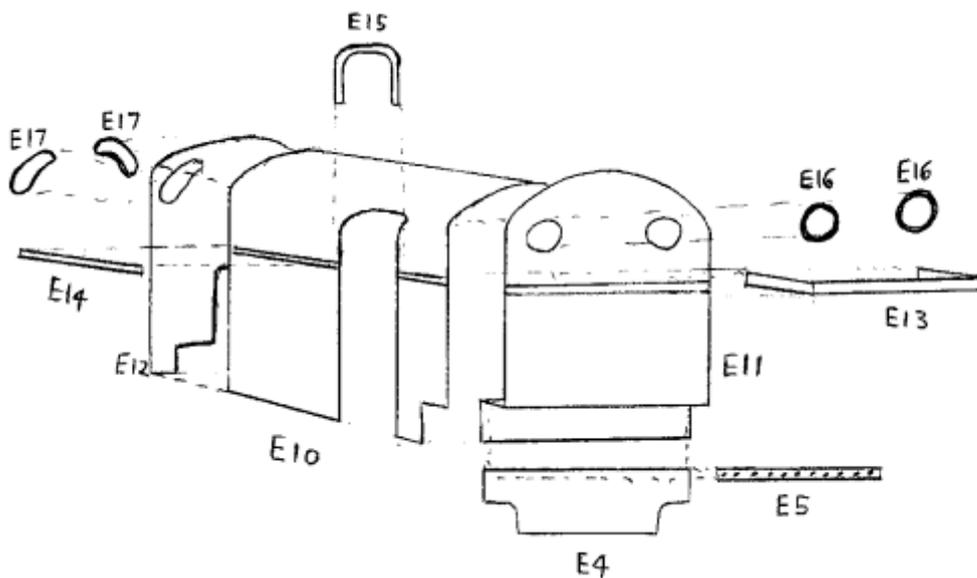
1x cab detailing etch



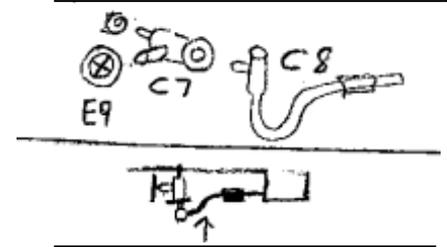
Loco construction and detailing



Cab construction



Close up of clack valve construction



Note how the clack pipe is bent and very close to the edge of the firebox.

