

# CONNOISSEUR MODELS

- 0 Gauge -

## LMS No. 1550 / BR B.E.L. No. 1 Battery Electric Locomotive 1913-1964



This is an etched brass construction kit based on the battery electric locomotive that worked the Midland's coal depot near West India Dock in Poplar, East London from 1913 to 1964. There was no rail access to the depot the only means of access was by a hydraulic wagon hoist hence the size, height and weight of the loco which had to use the hoist for maintenance or overhauls. A number of similar locos were produced to suite industrial locations.

This kit was developed by my good friend Robin Arkinstall from two doors down. I am very pleased to put this kit into production.

### ITEMS NEEDED TO COMPLETE A WORKING MODEL

*3' 1" spoke wagon wheels, Slater's No. 7121 or similar. Romford 40:1 gear set and motor mount with Tenshodo 9:16 motor or similar driving one or by using two both the 1/8th wagon wheel axles. Another alternative includes a larger motor with 40:1 gearbox incorporating Delrin drive to the other axle using 2 x 8 tooth 1/8th sprockets with approx 150+mm of chain.*

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

## Prototype Information

Photographs can be obtained or viewed of this variant of the loco in post war British Rail days on the RCTS Photographic Archive and Transport Library websites. An article and photograph appeared in Railway Bylines Jan 2001.

## Livery & Finishing

The locomotive was painted black in BR days and the lettering will need to be sourced from alphabet decal sheets. The type needs to be no more than 4mm high. The lettering on the kit locomotive was taken from a white Microscale Decal sheet, Railroad Gothic 90101.

Screenshots taken from :-

<https://rcts.zenfolio.com/electric/lmsr/other>.

The Railway Correspondence & Travel Society are an excellent organisation and their photos can be purchased as digital downloads or high quality prints.

<https://www.rcts.org.uk>

## Castings Etc

4 x sandboxes  
4 x axlebox/springs  
4 x wagon buffers  
4 x bufferbeam blocks  
4 x lights  
4 x dampers large with shaft  
8 x dampers small for springs  
1 x charging socket  
1 x electric horn  
1 x brake standard  
4 x 1/8th bearings  
2 x 6ba nuts and bolts  
16 x handrail knobs  
2 x copper clad  
1 x pickup wire  
1 x pickup leads red/black  
6 x 3 links, Spring steel wire  
0.45 0.7 0.9 brass wire

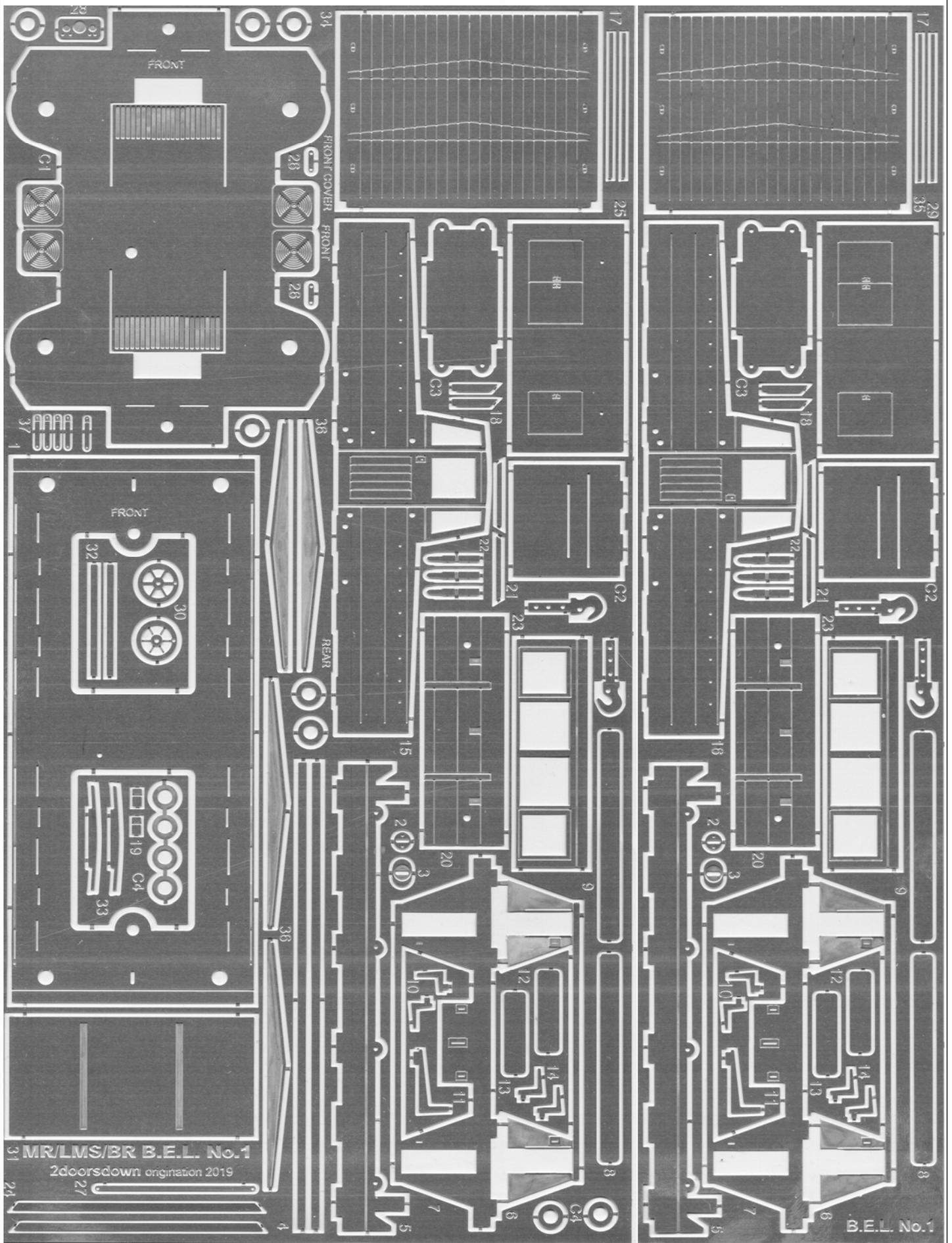


Information about type and size for motorising is deliberately a little vague as this is an ideal project to use up motors and wheel sets that you may find in your useful bits box, particularly if you were once a 00 gauge modeller. So see what you have already got before buying new but if you have nothing suitable I can recommend Branchlines as a small motor supplier (recommendation correct July 2019).

Talk to Brian about his Mashima/Tenshodo 9/16 motors used with a Romford 40/1 gearset & fold up mount. Brian can also advise on alternative larger can motors. Email your requirements to receive availability & price:- [sales@branchlines.com](mailto:sales@branchlines.com) or Tel 01373822231. Branchlines, P.O. Box 4293, Westbury, BA13 9AA. Inform Brian they are for this kit.

# B.E.L. No 1 Etched Parts

All etched parts have their identification number half etched next to them.  
This number corresponds to the numbers shown in the photo sequence instructions.



Check the reverse of etches for any rivets that need forming. All fold lines are on the inside of etches.

## **CHASSIS AND MOTORISING**

The prototype was only designed to move coal wagons and vans on and off the hydraulic hoist in London's East End and around the yard so probably not more than 3 or 4 at a time. Even when used in an industrial setting it is doubtful if it would be required to move more. Therefore it has shown that by motorising only one axle and adding suitable weight over that axle the loco can move that number of Dapol wagons easily on the level. One can of course motorise both axles or as shown in the instructions use one motor and connect to the other axle using Delrin chain and sprockets.

Commence by taking the chassis C1 and forming the rivet detail on the reverse around the fan housings. As stated above the simplest means of motorising is to use a small motor combination on one or both axles if however you wish to use Delrin drive between the axles one needs to remove an offset section 14mm deep by 8mm wide from the inner spacers as shown to clear the chain/sprocket. The chain is 5mm wide. An 8 tooth sprocket with the chain around it is 10mm dia. Do adjustments before folding down the sides.

Bend the inner spacers upwards slightly to enable one to file back the cusp. Then fold down the spacers and solder to the edges of the fan housings. Add the 1/8th bearings and check all is square. Take parts C2 and fold bottom section to match the profile of the frame sides and solder in position against the half etch and in the slots. Fold up traction frame detail C3 and solder to the slots in C2. The holes are for the traction motor damper castings. There is no external brake gear it is internal within the transmission housings.

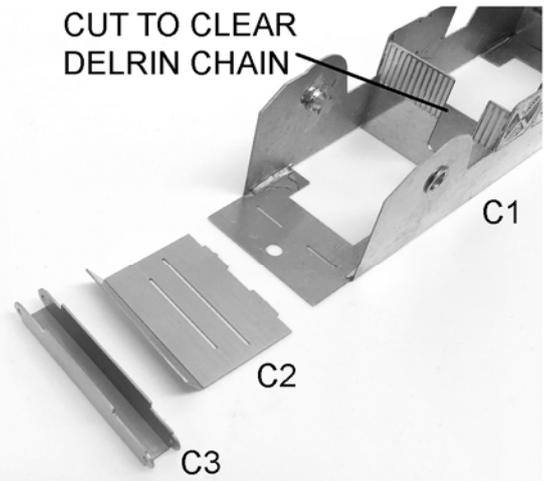
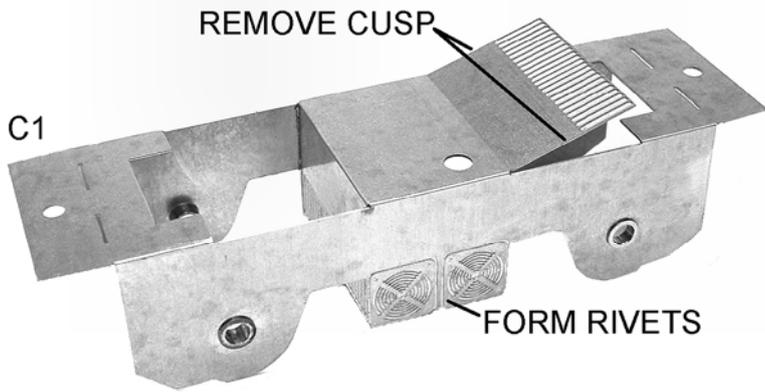
Add your choice of motor/gearbox combination. Wheel side play can be taken up with the etched washers C4.

If using Delrin chain drive refer to the photos. You can see the motor is offset and being a larger Mashima 12 x 24 will not easily fit under the 'bonnet'. So it is easier to lay it under the cab floor and secured with a Sellotape double sided sticky pad. The whole of one side of one of the middle spacers has been removed to accommodate this and the Delrin drive.

The Delrin sprockets are generally a tight sliding fit on 1/8th axles. Check you may need to carefully ream to fit. The sprockets are fitted to the axles, ensuring they align and then it is just a matter of fitting a length of chain. Those not familiar with the chain it is suggested one practises taking links on and off using a fine screwdriver.

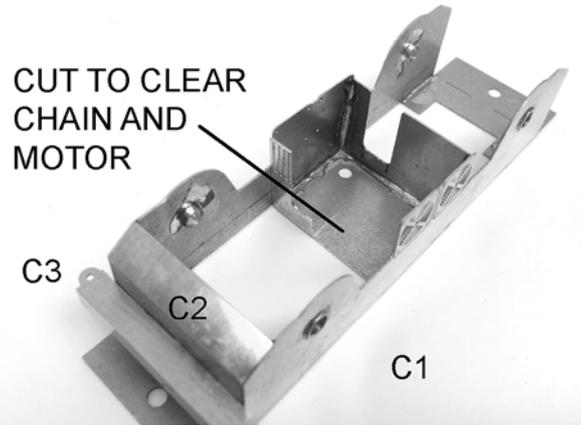
Finally add pickups to the chassis. One can use the double sided copperclad supplied and solder a strip either side of the frame side then using a length of phosphor bronze wire bearing on the top of the wheel rims to act as the pickups.

For a supplier of Delrin sprockets and chain I suggest Easy-Build Coaches. Shawn Kay "Tenarth" Victoria Rd, Camelford, Cornwall, PL32 9XE. Tel 07834 063966  
E-mail [shawn-easybuild@btinternet.com](mailto:shawn-easybuild@btinternet.com) with your requirements and ask for a price.  
Easy-Build produce DMU kits & Delrin chain drive is one option on their power bogies.

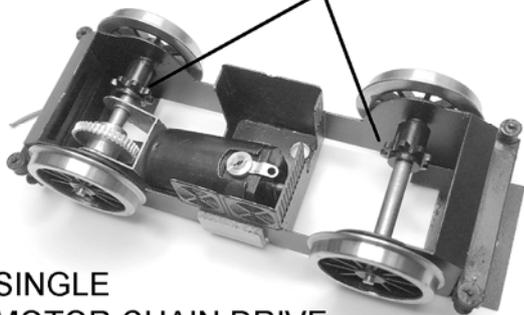


SINGLE AXLE  
DRIVE USING SMALL  
MOTOR AND 40:1  
GEARBOX FOR ONE  
OR BOTH AXLES

Top,  
Mashima 10mm Can Motor  
Below,  
Tenshodo 9/16 Open Frame

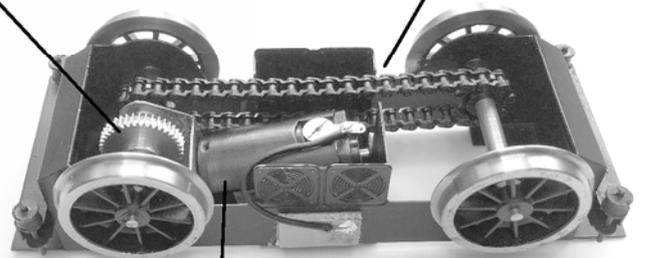


8 TOOTH DELRIN COGS

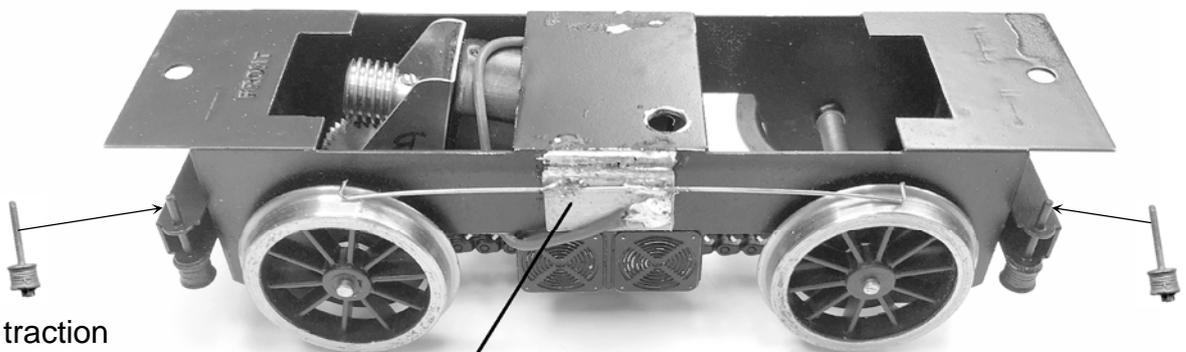


SINGLE  
MOTOR CHAIN DRIVE  
MASHIMA 12 x 24 OR SIMILAR

ROMFORD 40:1 GEARS  
AND ETCHED GEARBOX



MOTOR SECURED WITH  
DOUBLE SIDED STICKY PAD



Large traction  
damper casting X 4  
Fit shaft through  
etched holes

DOUBLE SIDED COPPERCLAD SOLDERED TO FRAME SIDE  
PICK UP FROM LENGTH 0.45mm BRASS WIRE  
BEARING ON THE WHEEL RIMS

## BODY CONSTRUCTION 1

Take footplate 1 and fold up the buffer beams. Add the coupling socket detail 2 and 3 to each end. To add thickness to the footplate there are etched strips 4 that can be solder to the underside of footplate flush with the edge. Take care not to fill the slots for the body sides. If you wish these strips could be added after the body has been attached.

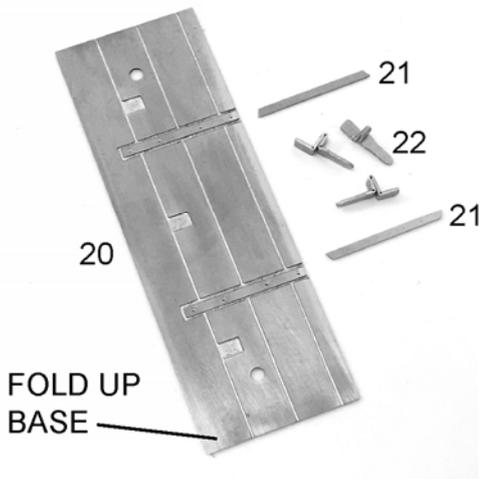
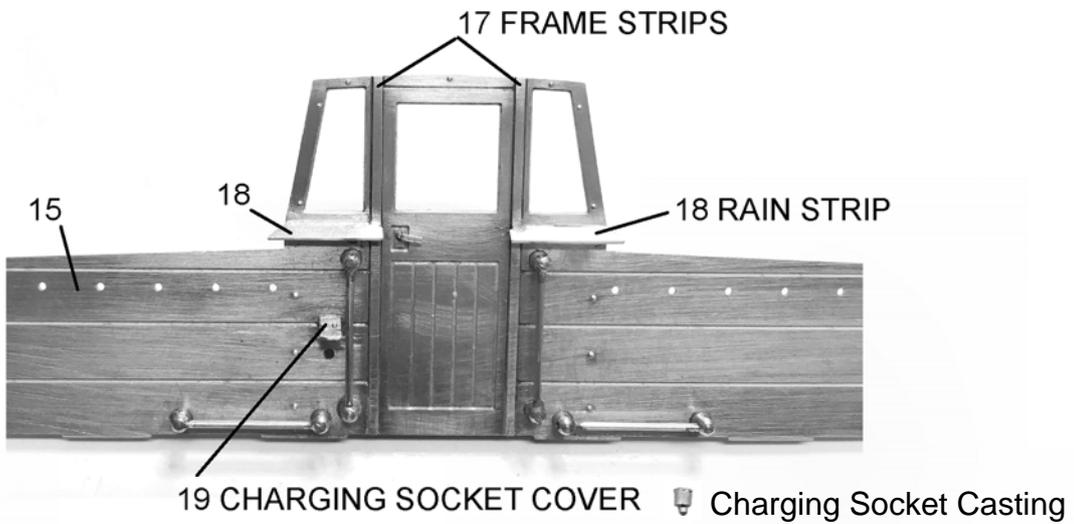
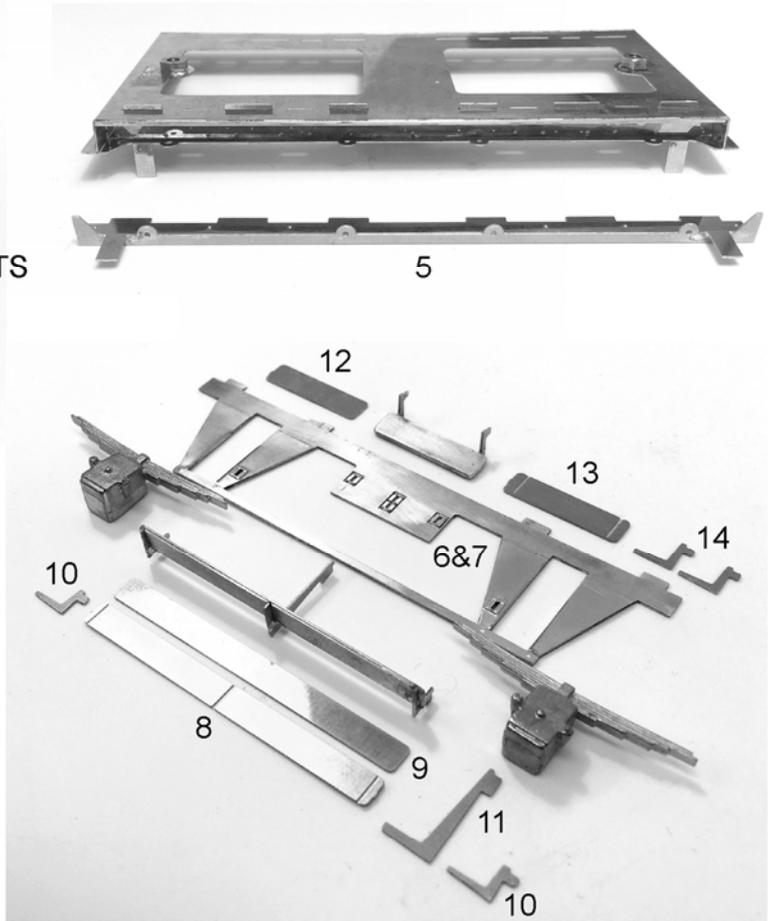
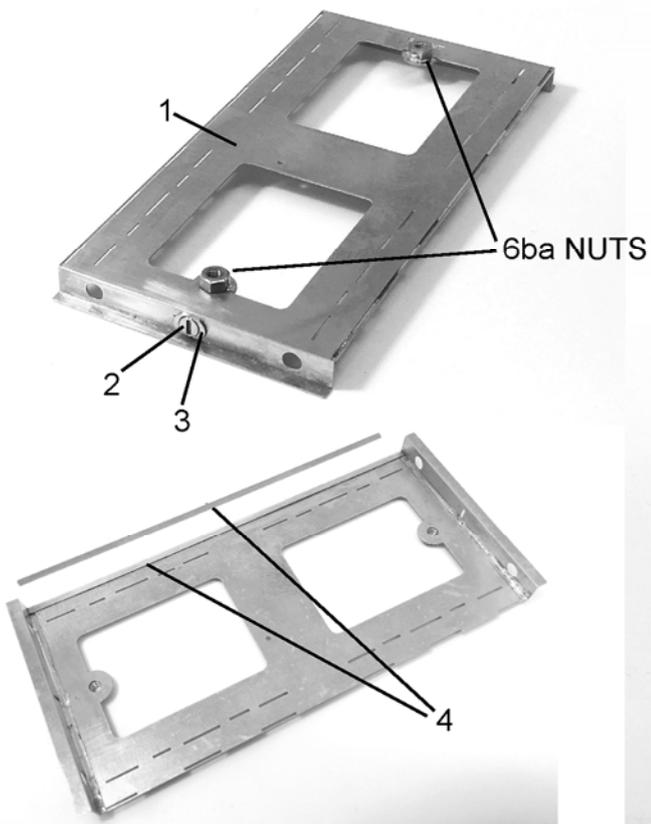
Take the frames 5 and form the rivet detail on the rear then fold up the lower edge and solder to the slots on the underside of the footplate. Fold down the sandbox supports at either end and strengthen fold with solder.

The next step is to make up the side frames and steps. It will be found easier to make these up as complete units prior to securing to footplate. Form the rivet detail on the overlays 6, note the fine detail around the step supports slots needs forming and solder to side frames 7. Next take the long footboards, 8 top and bottom 9 and solder together noting the slots on 9 are for locating the step supports from underneath. Add the three step supports to the underside, parts 10 are the outer and 11 is the centre one. Repeat with the small upper footboard using parts 12 and 13. Add supports 14. Before soldering the step units to the side frames ease the holes in the frames 5 to take the cast rubber dampers. Similarly adjust the fit of the cast axle boxes in the side frames. When done solder the step units to the side frames starting with the large lower step followed by the upper step. The complete unit can now be soldered to the slots in the footplate and against the frames 5. Repeat for the other side.

Take the body sides 15 16 and mark the front. This is the end where the cab door handle is on the left and on the right on other side. The front of the loco for this build is the end where the battery cover 34 has a hole for the electric horn. Form the rivet detail on the reverse of side 15 note the fine detail to be formed around the cab windows surround. Add the door frame strips 17 either side of the door. Take the rain strips 18 and solder to the half etched line either side of the cab door at 45 degrees. Note there is a hole on this side to accept the cast charging socket. Form and fold up the cover 19 and solder in position above where the cast socket will fit. Add the four handrails using the brass handrail knobs and 0.7mm brass wire. Do not trim off excess shaft as they are used to position the interior panels. Make cab door handle from 0.45mm brass wire. Finally fold round each end on the side to 90 degrees.

Repeat with the other body side 16. The sides may now be soldered to the footplate locating in the half etch grooves and slots, check orientation.

The next step is to take the end panels 20 and form the rivet detail on rear and solder the angles 21 to the inner edge of the vertical strapping. Make up three lamp irons 22 and secure to the three recesses. Fold up the base then solder between the sides flush with the top. The cast electric lights fit over the holes on the rear panel. One can simulate the lenses with a 2 part epoxy such as Araldite.



END PANEL  
FLUSH  
WITH  
TOP



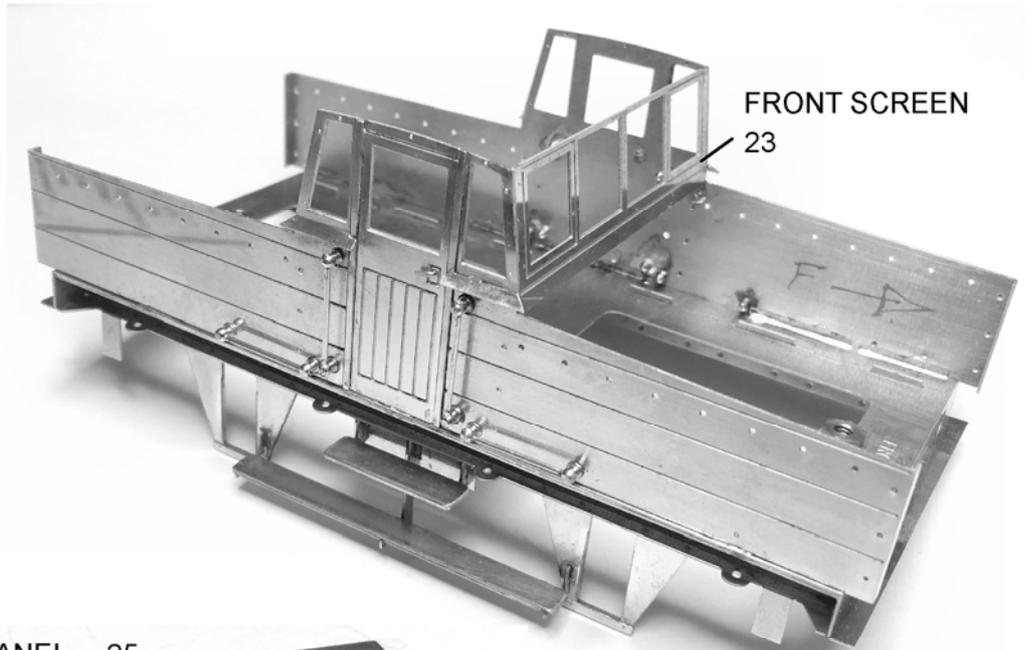
## BODY CONSTRUCTION 2

Form the fine detail on the reverse of the cab front and rear 23 windows and then solder them between the cab sides flush with the edge and top. Now add the long rain strip 24 to the half etch line beneath the front and rear windows at 45 degrees aligning with the side strips 17.

Take the front cab control panel 25 and fold over the top section. Add 0.7 mm brass wire to the two holes to take the control arms 26. Then make pivot handles for the connecting rod 27 from 0.7mm brass wire. Add the dial panel 28 in the centre. The complete panel can then be soldered in position using the protruding handrail shafts to locate against. This panel faces the front ie the horn with the charging socket to the left. Fold up the rear cab panel 29 and position as the other. Add the cast brake standard with the two part etched brake wheel 30 making a handle from 0.7mm brass wire.

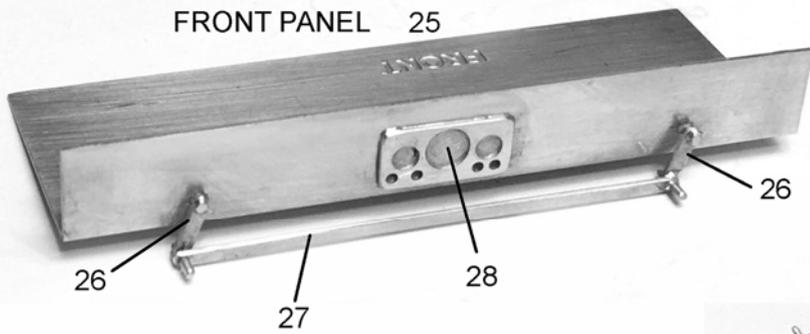
Curve the roof 31 to match the cab side profile and fold down the front and rear edges. This is deliberately oversize to assist in folding. It can then be filed back to approximately 0.5mm. Add the two detail strips 32 to the half etch recesses on the top of the roof. Finally add the roof locating strips 33 to the half etch lines on the underside of the roof. The roof can be positioned after painting and glazing the interior.





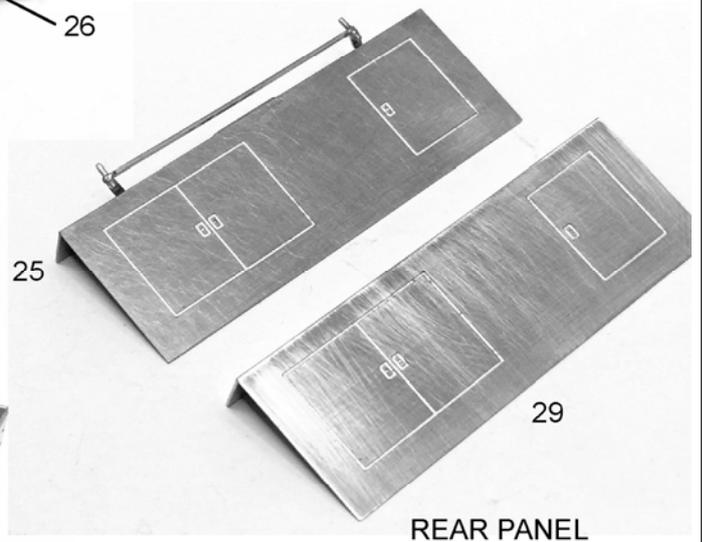
FRONT SCREEN

23



FRONT PANEL 25

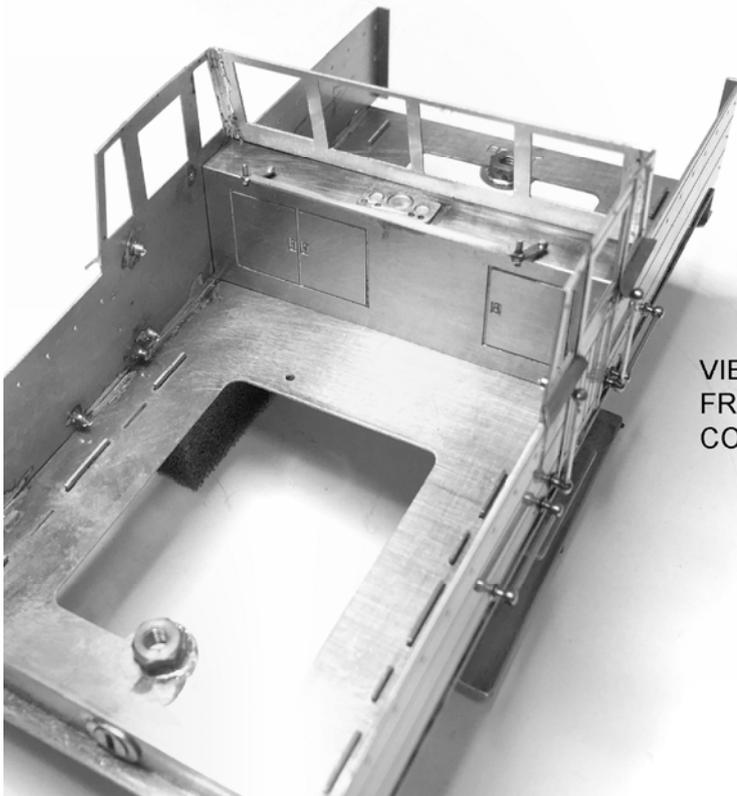
FRONT PANEL



25

29

REAR PANEL



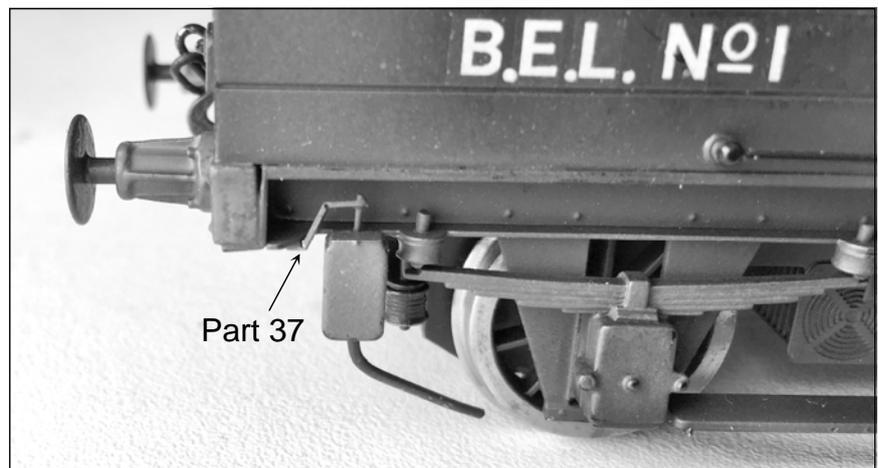
VIEW SHOWING  
FRONT SCREEN AND  
CONTROL PANEL FITTED

### BODY CONSTRUCTION 3

The final etch construction of the body are the battery covers 34 front & 35 rear. Take front cover 34 & fold down the front & side edges. Add the detail 36 to the top of the cover see the half etched outline for position. They overhang the sides to assist in soldering in position. When done file back flush with sides. Add a length of 0.45mm brass wire through the hole in the front cover & solder from the underside. This is the mount for the cast electric horn. Repeat for the rear cover 35. The covers can be mounted to the body against the cab & centred in the width once one is happy with motor clearance etc.

The castings can be added in any order, placement as the photos. The small circular dampers are for the spring supports & the larger are for the traction motors. Note there are no external brake shoes on the prototype they were internal in the traction housings. The cast sandboxes can be detailed prior to fitting. Add a short length of 0.45 brass wire to the rear of the top & add the operating arm 37 as the photo. The sand pipes to the wheels can be made from 0.9 brass wire.

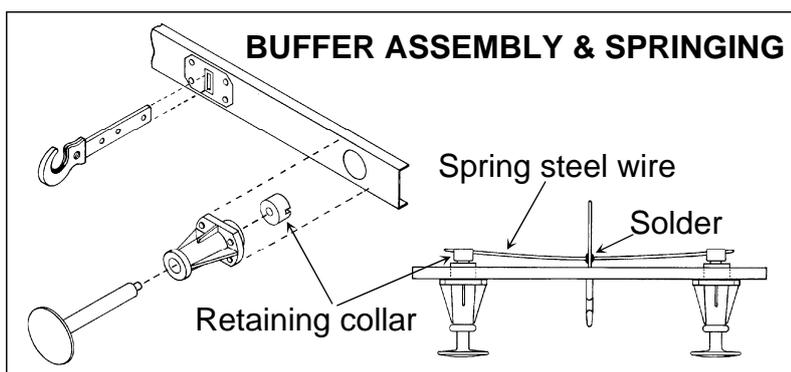
The buffers are standard to my wagon range & can be assembled solid or sprung as required. Drill out 2.1mm the buffer bodies to take the cast head/shank. I hold the drill bit in a pin vice (chuck) & grip the buffer body between finger & thumb. Drill through the body from each end so that the hole breaks through in the middle.



Then fit the shanks through the buffer body, snip off some of the narrow end of the shank to leave just over 1mm from the step & solder a retaining collar onto the shank. Open up the holes in the buffer beam as required & then fit the assembled buffers into the holes.

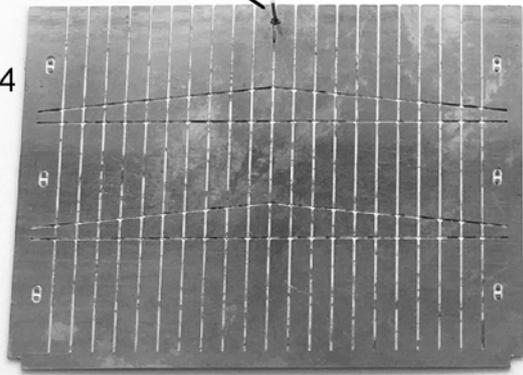
Now laminate together both halves of the coupling hook, and make up the links. I close up the links by holding the curved end in the jaws of a pair of round-nosed pliers in one hand and squeeze the flat parts of the link parallel with long-nosed pliers held in the other hand. Once you have six even-shaped closed links, you can open each one slightly and thread three together. The last link passes through the hole in the coupling hook. I reinforce the joint of each link with a spot of 60/40 solder.

Pass the coupling hook through the buffer beam slot and retain it with a length of spring wire. Polish the centre of this wire with emery cloth first so that you can solder it to the coupling hook shank once you are happy that the buffers spring freely.

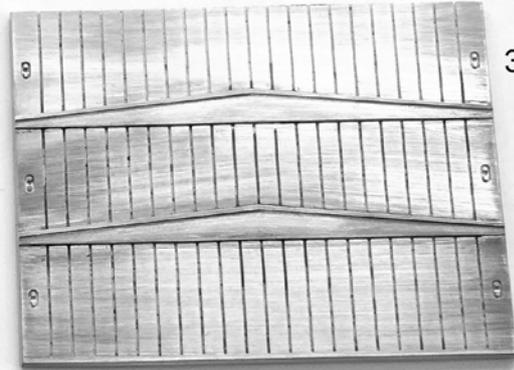


0.45 brass wire mount for electric horn

34



35



COMPLETE REAR  
BATTERY COVER

36



VIEW SHOWING COVERS FITTED  
AND CAB INTERIOR



VIEW OF COMPLETED LOCO UNDERSIDE

Spring dampers  
X 8  
Fit before  
spring/axlebox