

ASSEMBLY INSTRUCTIONS FOR UM/E 1450 LMS/LNER 52' BOGIE PLATE WAGON--/BR BO PLATE E (BPA)

IMPORTANT

Before starting this kit it is strongly recommended that the instructions are read from start to finish. Please familiarise yourself with the parts of the kit and relate them to the drawings included. **Graham Farish-Diamond Frame Bogies with couplings, wheels, paint, solder, adhesives & transfers are required to complete this kit.**

SOLDER AND GLUE

These instructions refer to the use of super glues or liquid solders (liquid/paste) solder is preferred to solid, because it is easier to apply and produces less excess waste. Soldering also produces a stronger long life bond. Types recommended are CARR's 243 and 188 high and medium temperatures as the main form of assembly. **Never solder onto surfaces already joined with super glue as the extreme heat destroys the glue and releases toxic fumes!**

CONTENTS

1-off etched brass fret containing : Integral floor , sides & ends , 2 Overlay sides, Integral floor with solebars and buffer beams, 2 Solebar overlays, 2 Washers, 2 Half thickness washers, 2 End overlays-riveted- with buffer beams, 2 End overlays-welded- with buffer beams, 10 (2 spare) End reinforcements , 2 Pivot boxes, 5 (1 spare) Handwheel brake brackets, 1 set early and later hand brake levers, 5 (1 spare) buffer plates-early and later versions, 4 wagon builder plates(spares), 32 (12 spare) solebar hinge brackets, 1 set (10 parts) truss underframe, 4 'V' hangers, 1 set of strap details for body sides including many spares. 4-off turned brass buffers. 2-off M4 cheese head screws. 50mm Nickle Silver wire 0.33mm. The body and floor are pre-formed to simplify assembly work and the pivot boxes are already tapped.

HISTORY/LIVERY NOTES

The following are useful references to this kit. 1-LMS WAGONS Volume Two by R.J.Essery-OPC pages 20 & 21. 2-An Illustrated History of BR WAGONS Volume 1 by P.Bartlett,D.Larkin,T mann,R.Silbury, A. Ward-OPC pages 134-137. 3-BRITISH RAILWAYS WAGONS by DON ROWLAND-David & Charles page 92

Bogie plate wagons were built for the movement of large steel sections for heavy industry with the LNER introducing their design in the 1930's (details not known) followed by the LMS in 1947 (total built: 70). BR went on to build 1490! from 1949 to 1981, and the later batches are still in use today!! The liveries carried started with painted steelwork and bare timber in LMS days. This was followed by BR Grey, BR Bauxite, BR Railfreight Red and soon to be in EWS Maroon!!!

This kit has been designed to N-scale, ie 2 1/16th so that it matches with the N Gauge Society bogie bolster and trestle kits. As far as it is known this is the first complete wagon brass etched kit to be designed specifically to N-Scale. Since the beginning of this design, three types of bogies have been fitted to this wagon. These are diamond frame bogies (made by G.Farish), the plateback bogie (no commercial version available) and the Y25C bogie made by (Taylor Plastic Models). The vast majority built between 1949 and 1960 had riveted ends and round buffers. Later diagrams had welded ends and oval buffers. There are at least 4 types of underframe brake gear arrangements and therefore it is best to check with book No 2 for details. The two most popular arrangements are shown in the diagram sheet.

INSTRUCTIONS

STAGE 1

INTEGRAL UNDERFRAME

1.1 This kit is based on the principle of an integral floor with fold up sides and underframe floor which are supplied pre-formed. Fold up and down to break and remove the body ends. These need modifying and fitting after the body joins the floor assembly. **Before** removing the remaining etched parts from the frets, first check that the etched slots are cleanly formed, and if not, then open with a knife (100% cleanly etched slots cannot be guaranteed due to the sensitive nature of the chemical etching process). Commence assembling the underframe floor first. *N.B the solebars are not symmetrical about the centre, due to a small design error. Therefore they will only fit one way, ie 'Murphy Proof'.* This also applies to the body side overlays. Cut out the solebar overlays and tin both surfaces prior to sweating them together with a soldering iron. Avoid tinning around the areas where the hinge brackets slots are to enable the parts to fit prior to soldering. Solder the solebars in place and check that they are square to the floor. Cut from the fret the hinge door stops that locate on the inside of the solebars. Fold as shown in the diagram sheet and solder in place. There are small etched location marks on the inside edge of the solebar to help position these. Fold down at each end the buffer beam ends and solder the corners to stiffen the assembly.

1.1 Cut out with a sharp blade with a good cutting surface the 20 hinge brackets. There are 12 spares as several will probably be accidentally lost at this stage of assembly. Solder each bracket in place with a small dab of liquid solder at each slot on the inside face of the solebars. A tip here is to use a swiss style screwdriver with a small piece of sellotape attached to the tip. Use this to pick up and hold the brackets to enable a smooth nosed pair of pliers to grip the component. Once correctly held in the pliers, the brackets can then be pushed in to the slots and secured from the inside face with solder. (cutting and fitting these brackets will take approximately 1½ to 2 hours to assemble: patience at this stage will produce a nice model at the end as the brackets are a noticeable feature) Check that the brackets are all square and at 90 degrees to the solebars. Carefully dress file the top edges of the brackets to match the height of the floor.

1.2 The pivot boxes are already tapped but not the floor section where the screws cannot go because of the body section. When the boxes are soldered in place: all four sides for maximum strength, test the threads with the M4 screws included with the kit. *N.B it is important that the boxes are central to the holes in the floor to avoid 'crabbing' the bogies.* This should produce a good pivot hole provided it is not excessively over tightened. Should a fully tapped hole be required fill the boxes with modelling Milliput epoxy putty. Solder in place as previously described. Before the putty goes hard grease well one of the M4 screws and thread through the assembly. Remove, clean the screw and repeat again with more grease on the screw. Again clean the screw before any traces of putty have a chance to harden and adhere. Repeat for the other pivot box. When finished allow to harden overnight. Test to ensure the threads are okay with the screws before proceeding to the next step.

1.3 Cut from the fret the underframe parts and with care deburr the tabs prior to assembly. Commence by fitting one of the inner end frame parts first. Solder this to the floor and check for position ie the crossframe and squareness. Once satisfied solder a crossframe in place and check that the two butt join together and that the crossframe has an equal gap at each end. *N.B careful examination of the underframe parts will reveal small location tabs designed to help locate each part in the assembly: a useful feature when soldering the central cross joints.* Solder the second inner end frame in place followed by the inner central frames. Ensure they butt up to the crossframe before soldering in place otherwise the second crossframe will not fit and check for squareness (this is where the small location tabs help). Solder the second crossframe in place checking it is equally spaced between the solebars and square. Fit the remaining two inner end frames and solder in place. Check all parts are square and solder the four cross butt joints with small dabs of solder. Finally the outer frames can be fitted. Solder at the top edges where they meet the cross frames with small dabs of solder and secure the ends to the floor with solder.

1.4 Before assembling the ends decide on which end to use either welded or riveted according to the chosen diagram/build number and the buffer plates. Cut the ends and buffer plates from the fret and deburr with care. Coat with solder and fit to the end of the floor section ensuring the buffer plates are correctly aligned prior to soldering in place with the brass buffers. If fitting the LNER style buffer plates these have extended side plates which fold through 110 degrees to join the buffer body. Cut the end reinforcements from the fret (2 spare) and solder or glue in place. (leave the rest of the underframe detail until after the body has been assembled and fitted)

INSTRUCTIONS

STAGE 2

ASSEMBLING THE BODY

2.1 Carefully remove the body overlays from the fret and note where each part fits to the sides and the correct way up. Either tin both surfaces and sweat the parts together working from one end or glue the sides on also starting from one end to establish the correct location. Soldering the overlay sides on helps to ensure that no unsightly gaps can be seen along the top edge: the most noticeable area on the model. Check that the body will fit in between the end overlays on the floor section and that the body work aligns with the hinge brackets. It

may be necessary to carefully file the fold edges where the body ends have been removed to provide clearance between the floor ends. Once a good fit has been obtained the body can then be joined to the floor section. Check that the top of the floor section is clear of solder spots by dressing with a file to ensure the body sits perfectly flat. Tin the under side of the floor or glue the body to the floor locating one end first so that it is equally spaced across the underframe. Now modify (remove by filing across the top edge and fit (solder or glue) the saved ends to the body and cap with the top edge strips to complete.

2.2 The external strapping can now be fitted to the body. A tip here is to use some Bluetack to hold the assembly on its side while fitting them. Due to the small size of the parts plenty of extra pieces are provided in case of accidental loss. As in section **1.1** the aid of a swiss screw driver with sellotape will greatly assist in this task. Position the sellotape onto the part to be cut from the fret and carefully cut with a knife on a firm plasticard surface (apart from the sellotape enabling to pick the component up it helps to stop the part from flying off when the knife cuts through the fret!!!). These parts are best glued to the body : thin wire helps to apply small amounts to the wagon body instead of applying the glue direct from the tubes nozzle. Start with the main hinge straps(20) first, which cover part of the hinge bracket (see diagram sheet for details). Fit the other parts using the same method including if desired to the inside of the body. This stage of assembly will take with patience approximately 2 to 3 hours requiring plenty of light and is best approached in a relaxed frame of mind!

INSTRUCTIONS

STAGE 3

UNDERFRAME DETAIL

3.1 Before fitting the bogies (latest G.F bogies have a 3.75 mm pivot hole : with a 4mm drill open the hole to enable the screws to fit) to the assembly they will need trimming with knife and filed to reduce the height. Etched washers are provided (full and half thickness) which are useful if further mods are carried out to the bogies to reduce the height. Fit the wheels to the bogies and fasten to the model with the M4 screws. An effective tip for screws that keep working loose is to coat 33% of two threads with a contact adhesive . Allow to dry and then fit to the model. This make the screws behave in a self locking manner. Test the model on the track before final fitting and painting

3.2 Study the diagram sheet to decide which detail underframe parts to use according to the prototype been built. Carefully cut out the parts and solder or glue in place.

3.3 As a final detail the floor has etched slots where the bolsters were located. Bolsters can be cut from Slaters microstrip and glued in place using super glue. Use 0.020" x 0.030" Code 1007 (not provided in the kit). N.B best applied after degreasing in **Stage 4** if the model has been soldered.

INSTRUCTIONS

STAGE 4

PAINTING.

4.3 *If the model has been completely soldered then wash the model in hot soapy water and with an old tooth brush degrease ie remove with care flux residue and grease from handling. Rinse and allow to dry.* As with all models in this scale apply thinly sprayed coats of paint starting with a primer and then chosen livery colour. Apart from the rebuilt airbraked BPA versions, most soon achieved in service, a well worn and used appearance.

INSTRUCTIONS

STAGE 6

FINAL ASSEMBLY .

6.2 Fit the bogies and wheels and test on a piece of track.(The N Gauge Society Shop is recommended as the best source for purchasing wheel sets).

You should now be ready to place your completed model on the track. It is hoped that you have enjoyed constructing the kit and that the model provides you with years of good service.*(to make use of the standard kit box for storing the finished model cut from 1mm thick card e.g art mounting board internal packers. These lift the lid high enough to accomodate the model. Cut two pieces 23mm x 60mm and two pieces 23mm x 210mm. Fit the long side pieces first and glue if desired. The end pieces are a good push fit that holds the sides in place)*

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UM/E 1450 LMS/LNER 52' BOGIE PLATE
WAGON-/- BR BO PLATE E. (BPA)

BODY
DETAILS

Internal body side strapping highlighted in magenta : optional for fitting depending on personal building skills. The model is best viewed with the long straps (10 each side) fitted

Wooden bolsters are glued onto the wide etched sections (17) with the 0.020" section glued to the floor.

Hinge straps shown in light grey (10) per side. These are a distinctive feature of the model worth fitting. Other strapping shown in magenta is optional depending on personal construction skills.

Position of vacuum cylinders if fitted. V hangers not shown for clarity. See colour drawing below. Hangers fit between solebar and truss frame. Use wire provided to form brake linkage.

Underframe trussing

Hinge brackets (10) per side.

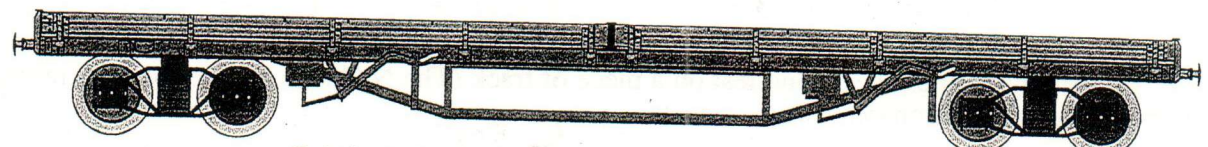
End reinforcements : vertical ribs.

Side door stop brackets (12 each side). Etched marks on inside of solebar indicates location of each one

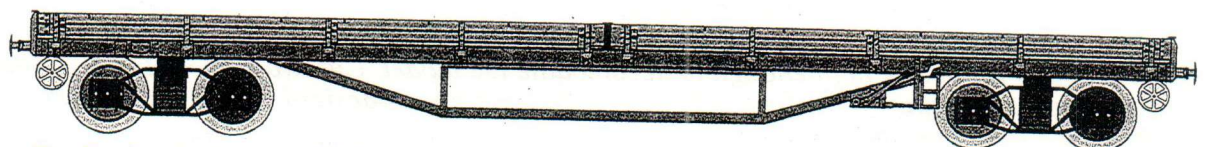
Buffer Plates.

Pivot Boxes

Top edge cover strips fitted on all ends (1 spare on the fret)



Twin brake levers along each side : same view for both sides.



Handbrake wheel bracket. One fitted to each corner on later diagram builds.

Modified form of Simplex brake lever. One each side : same view for both sides. (V hangers and vacuum cylinders not fitted)



Enlarged detail showing how the modified Simplex brake lever is assembled and fitted.

