Etched Pixels Digital Design
Ultima Pro LNER Non Vestibule Coaches

Complete kit including bogies(*), buffers and wheels. You will also need NEM couplings, paint and decals to finish this model.

http://www.etchedpixels.co.uk

This product is intended for adult modellers with reasonable skill in handling small components. It is not suitable for children.

For articulated coaches please see the articulated coach instruction set first

Contents

1 x Preformed body shell including bogie mounting points and interior.
1 x Roof
2 x Dapol Bogies (pre-assembled with wheels) (*)
2 x NEM coupling adapters
1 x Etched side and end overlays
1 x Etched battery box fronts and trussing
4 x Buffers
1 x Dynamo
1 x Set of roof vents
1 x Glazing material
1 x Corridor dividers (Composite only)

Requirements

Paints
Decals (Fox transfers and Modelmaster ranges include suitable decals)
NEM couplings (Graham Farish by Bachmann short NEM couplers recommended)

(*) *except for special orders for use with N Gauge Society or 2mm SA bogies*

History

In 1923 the LNER was formed as part of the grouping of the previous railway companies. From the beginning the LNER planned to standardise coaching stock. A standard set of compartment measurements, widths, bogie centres and bogie types were agreed, along with gangway types and buffers.

Non-vestibule (that is non-corridor) coaches were 51' 1½" long and continued to be built in the same basic style until 1938 although details changed along the way.

Many of these coaches lasted until the late 1950s with some hanging on into the early 1960s

Liveries

As built the coaches were lined teak with black ends and white roofs (at least out of the paint shop). Underframes would also be black. During World War 2 the lining was dropped and the roof colour became grey.

British Railways repainted most of the coaches after grouping although there are photographs of the coaches still in shabby LNER colours as late as 1955. Those that were repainted would have been repainted as BR suburban stock in plain crimson and then maroon.

Diagrams

Bracketed numbers indicate narrower coaches that can also be represented by this kit. They were 3" narrower (or 0.5mm in N gauge).

Diagram 48 (47): All first from 1923 onwards. The model represents the standard version of this coach. The Great Eastern version was higher capacity with armrests omitted except at each end of the row. The GE version is available as a special order.

Diagram 50 (49): Semi-Corridor Lavatory Composite. Built from 1927 onwards. These coaches had a uniquely LNER design where the first class and third class each had a corridor and access to a toilet but no ability to walk between first and third. They were intended for longer journeys. Diagram 49 were built from 1925.

Diagram 57 (56): The standard third class coach. Built from 1926 onwards these coaches formed the backbone of the non-vestibule stock. The Diagram 56 coaches were built from 1924.

Diagram 65 (64): Four compartment brake third. Built from 1925 onwards. Diagram 128 was identical but fitted with a ducket. This can be modelled using an Ultima LNER ducket (UM276).

Diagram 67: Full brake, built from 1926. These coaches were ran on GNR style Fox bogies rather than Gresley bogies. This kit is a special order. With a ducket added it can also represent early members of Diagram 129.

Diagram 105/106: Articulated double third. Built 1929.

Diagram 107/108: Articulated brake third/lavatory composite built 1929-1930

Diagram 189: Composite (ex first). Converted from first class coaches the diagram 189 vehicles had the armrests removed in the third class section. The compartment size however remained unchanged.

Diagram 317: Push-pull driving trailer as used on the Epping-Ongar services.

Construction

Begin with the main body shell and roof. These are 3D printed and then polished. The printing process uses a wax medium to support the model as it is printed. This is then washed away. In most cases it will fail to clean away the wax in small holes and sometimes the narrow gap between battery boxes and the solebars.

Run a 0.8mm drill into the buffer holes in the ends to clean them out. Open out the pre formed holes in the roof with a 1.2mm drill. You may find it easier to poke the wax through with a small drill first.

If there is wax between the solebars and the battery boxes then clean this out, otherwise it will make fitting the battery box overlays and trusses very difficult.

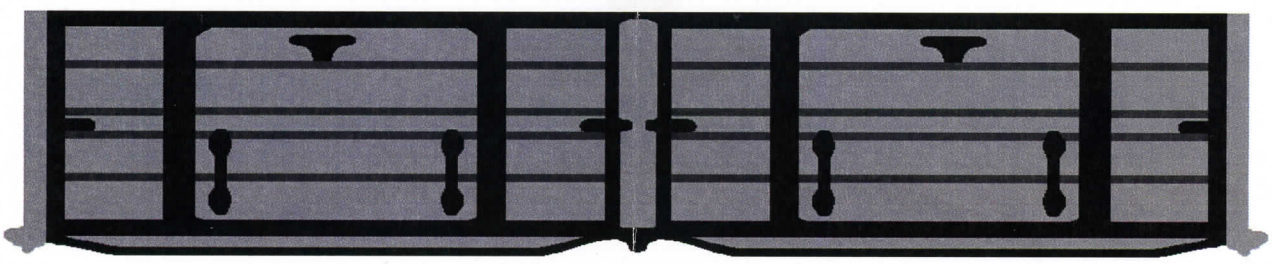
Clean any visible lumps of wax out of the two semi circular slots each side of the bogie mount and out of the bogie mount itself. Don't worry about small specks.

At this point it is best to clean the body ready for painting as this is more easily done before assembly, and then a final clean before painting.

Carefully cut the end overlays from the fret either with a knife supported on a hard surface or with a pair of sharp scissors. Glue the ends to the coach taking care to match the windows in the ends of the brake coaches. Use a sticky but not too fast setting glue such as Evo-stick Impact. With the ends roughly in position glue the buffers into their holes through the etch. This will ensure the ends are correctly aligned.

Underframe

The underframe etch contains trusses and V hangars as well as battery box overlays. Begin by fitting the battery box overlays over the 3D printed battery boxes



The full brake has only one battery box.

When these have set fit the trusses, again following the diagram and ensuring the V is on the correct

side, matching the vacuum cylinders on the printed coach floor. Fold the top of the two small V hangars 90° on the fold line and glue them to the coach floor in the centre, in line with the others. Expert modellers may wish to run wire between the hangars and the vacuum cylinder.

Check the top of the dynamo casting which will attach to the floor is smooth. If not support at that end and gently file off any casting marks. Glue the white metal dynamo in place. The rounded larger end of the dynamo faces outwards and the small rounded end (take took the drive belt) aligns with the centre of the coach).

With the underframe completed prime and paint the assembly black. You may wish to pick out the compartments and seating separately particularly if you plan to light the coach. For LNER the sides of the solebars should be painted weathered teak kind of colour with the stepboards in black. This can be quite tricky and all black is better than badly painting the teak.

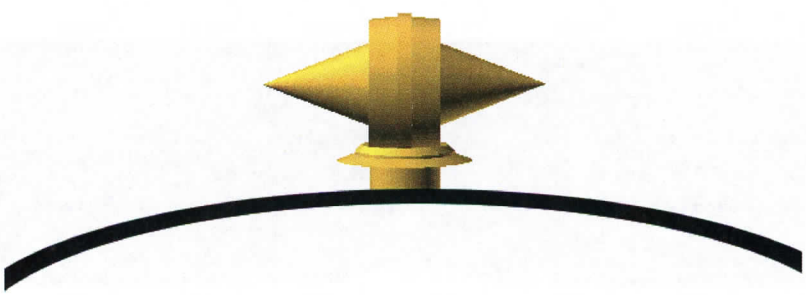
Bogies

If you are using NEM couplers then clip the NEM coupling pockets onto the bogies as per the diagram. They should clip firmly into place. If they slide a little side to side add a spot of glue. Fit your choice of short NEM coupler into the pocket.

Clip the bogies into the body shell and test the assembly rolls and runs nicely.

Roof

Clean the roof and then fit the torpedo ventilators into the holes. It is usually best to do a few at a time and let the glue set as having them escape as you try and fit more gets annoying very rapidly. Align the ventilators with the points across the coach.



Once you believe they are all set and you are ready to continue check none are loose. Re-glue any that need it.

See the diagram for further optional detailing.

Prime and spray the roof an appropriate colour.

Glazing

Cut strips from the glazing to fit along the sides of the body shell and check they fit the groove in the compartment dividers. You will need four pieces for the brake coach sides as these coaches change width part way. Don't forget to cut glazing for the ends of brake coaches.

Sides

The sides are etched as the printing process cannot reproduce fine detail with a smooth surface to the same standards. Each etch is in two parts the lower overlapping the upper part. Glue or solder each assembly together and leave them to set hard. Once they are set gently roll the lower part of the side over a curved edge in order to put a curve on the sides. Test the sides against the body profile as you go until you get a nice fit. Don't overdo it – the amount of curvature needed is quite small. On the brake coaches fit the brake end side elements first as that part of the coach is narrower. The compartment end then fits on top and overlaps slightly to capture the stepped look of the original.

When the sides fit nicely prime them and paint them. After they are dry you can varnish them and fit the glazing (checking the alignment with the slots in the shell).

Final Assembly

Fit the roof and using it as a guide as well as the sides fit the sides to the coach over the small lip in the roof.

Optional Features

The Dapol bogies have power pickups. Slots are provided in the coach floor to allow them to be wired with fine decoder wire. This can be run up to the roof to power coach lighting strips. The space in the top of each compartment divider allows strips to fit. Because the coach is compartment you need strips that allow you to align LEDs with each compartment such as those by DCC concepts.

It is also possible to use the guards space to wire a small sound decoder into a brake coach. In that case adding some additional weight to the brake coach is recommended.

In order to keep the coach easy to build with the multiple layers there are no etched holes pre-drilled for door and grab handles. Ultima UM320 provides grab handles and also a drill jig for experts wanting to super-detail the model.

Notes On Painting

Painting teak effects takes a little practice but is not that difficult. Phoenix precision sell a teak base-coat and weathered teak colours. It is strongly recommended that you use an acrylic primer as the base coat.

Ex Works

To match the Dapol coaches and get an ex works look paint the entire coach in teak base-coat and then dry-brush with weathered teak.

More Aged

Begin with weathered teak and dry brush teak base-coat

Decrepit/End Of Days

Begin with a coat of weathered wood, sleeper grime or similar. Then dry brush with weathered teak until the dark grime is mostly in the corners and to taste. Then dry brush a little with teak base-coat. This gives a decaying look to the coach. For a real 'falling apart' look a thin wash of a dark greyish grime colour over the top will bring out the feeling of decaying timber.

It is important to realise two things when brushing. Firstly the teak panels have a grain. This should be reproduced by dry brushing along that alignment. The lower panels have the grain horizontally, the upper panels between the windows vertically. Paint the door frames and droplights in weathered teak (or weathered teak and sleeper grime for a decrepit coach).

Secondly many coaches had panels replaced and the panels never matched well in the first place. Dry brushing a few panels a bit more to bring out a mismatched look can both give the coach more character and be more accurate.

For British Rail colours the easiest approach I have found is to paint the main assembly black, then pick out the seats. The sides can be sprayed with car paints and then assembled.

Roofs

LNER roofs started out white. Almost any shade between white and dark grey is suitable depending upon when it was last painted. In British Rail days they started grey although again they would get dark and dirty very rapidly.