More Toads.... of a Different Species
LNER Brakevan

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*(Following on from his article on GWR brake vans John Candy describes how to 'backdate' the GRS **BR** 'standard' brake van kit to the **LNER** 'Toad D').*

A Wartime Toad : No. 260922, built 1944, with concrete platforms and underframe trusses, both employed to save steel.

The British Railways standard brake van (diagrams1/506 and 1/507) is a design derived from the LNER 'Toad D' and its pedigree is obvious from the outline. There are, however, significant differences between the two types, which are not immediately obvious (and there are significant differences between batches of the LNER-built vans which are a little more obvious). I will attempt to unravel the mysteries of these vans so that a reasonably accurate model can be built from the GRS kit.

In the late 1920s, to work its fast fitted freight services, the LNER required a new design of van which would ride well at higher speeds. The result was the 20 ton 'Toad D', with a 16ft wheelbase and fully fitted with vacuum brakes. This new design is easily distinguishable from the shorter 'Toad B' and 'Toad E' by the open platforms at either end, with the underframe being longer at 24ft over headstocks but the enclosed cabin being shorter than the 'B' and 'E' designs. The 'D' first appeared in 1929 and evolved gradually over the next 20 years, eventually being superseded by the BR diagram 1/506.

The kit marketed by GRS is of the BR design but can be 'backdated' to LNER condition with some judicious surgery. The LNER versions can be split into two 'periods' which separate the major structural differences between batches (although there are plenty of differences of detail within these periods).

Pre-war Period.

Features of wagons built during this period are : End open platforms of plated steel, set level with top edge of solebars and an underframe devoid of trusses. The very earliest lot had sanding gear fitted but this was removed by 1936 and ex-works photos of new vans in 1930 show no sanding gear fitted. Early lots were fitted with RCH 'split' pattern axleboxes but later batches were fitted with the LNER cast open-front box. The cabin doors were without windows and flanking the doors on either side were matched pairs of windows. All vans had full AVB gear.

In 1936 a batch of similar vans was built for the Cheshire Lines Committee (a joint LMS/LNER managed railway) but these had no vacuum fittings and were hand-braked only.

Wartime and after.

The major alteration in external appearance occurred during the war, when steel shortages forced changes to the design. The previous method of loading the underframes with additional steel and iron to increase the tare to 20 tons had to be abandoned. The underframe was strengthened by adding angle-iron trusses and the weight was made up by planting concrete slabs on the open end platforms. All vans had full AVB gear. After the war, another alteration which appeared on newly-built vans was the fitting of of two vertical panes of glass in each cabin door.

The British Railways vans.

During 1949, BR continued to build new vans to the LNER design (given BR diagram 1/500, the only obvious distinguishing features were the numbers having a 'B' prefix instead of 'E'). There were more 'LNER' vans built by BR to dia.1/504 up to 1955 but these had detail differences, including lots which were vacuum 'piped' only and another with handbrake only.

In 1950 BR 'standard' diagram 1/506 was introduced and these varied in detail, some lots being 'handbrake only' vans with no vacuum fittings whatsoever, while others vans were fitted with vacuum brake pipes only, the brake van itself being braked only by hand, although the train vacuum brakes were controlled by a 'setter' fitted in the guard's van. Only a small number of vans to this diagram were built with full vacuum braking. The BR design evolved, with gradual improvements, which included fitting of roller-bearings, Oleo buffers, etc., the final examples being built to dia.1/507 in 1961. Ultimately, many of the survivors acquired air brakes to work with modern freight stock.

The GRS Kit

This is representative of a 1950s BR 'standard' vacuum-piped van and makes a very good model. The kit is described by GRS as 'LNER/BR Brake Van' but modifications are required to produce an accurate LNER-period model.

Firstly, you need to decide on the 'period' which you wish your model to represent.
If you definitely want the large 'NE' 18 inch lettered livery, then this was discontiued in 1936, so you need to choose a van built prior to the change to the small 1937 lettering.

Modifications to the Kit

Vans built Pre-war : You need to discard or cut away the concrete end platforms, leaving the top edge of the solebars to support a new thin 'steel' platform, probably best made from sheet brass.The platforms had a large number of prominent rivets which you may wish to emboss with a rivet-press or drill and insert separate brass rivets.
The angle-iron trusses supplied with kit should be discarded. If you wish to model one of the 1929 -built vans, in pre-1936 condition, you will need to add sand boxes and pipework.

All LNER vans : Do not fit grab rails to the end platforms (whether concrete or steel). The step-

In this view, note the lack of windows in the cabin door, the pattern and positioning of lamp irons and the 'split' vertical grab rails, all of which differentiate the LNER vans from the BR 'standard' type.

boards on LNER vans are shorter than those on BR vans being only 19ft in length and not the full length of the underframe. The GRS kit is supplied with a number of fittings which are only suitable for the BR-built vans, these are :- Axleboxes, horn-guides (W-irons) and brake blocks.
The axleboxes need to be either RCH split type, LNER cast steel open front or LNER pressed steel open front (according to period...see a photo of chosen van) all types are available either from GRS (RCH split and LNER pressed steel) or Brandbright (LNER cast steel).

The W-irons are of the RCH type, again available from GRS or Brandbright. The brake blocks supplied with the kit are a BR design with twin friction blocks on each 'shoe' whereas the standard LNER type is required (GRS can supply).

The BR van kit has a four-pane window in the cabin doors. For the majority of LNER-built vans, these doors need to be 'blind' with vertical planking. Some post-war LNER vans had two (vertical) panes in the doors, so the horizontal glazing bars need to be removed to model this version.

Detailing

There are numerous permutations of fitments and I can only recommend you model to a photograph.

Differences to watch out for will include buffer pattern, lamp iron types and their positioning.

The **vertical** grab rails on the LNER version are different from the BR version (each is split into a long and short portion, unlike the single BR type).

The long horizontal bodyside rails are in fact in three sections but it is easier to model in one section with handrail knobs and it is not obvious from most photos that the prototype is sectioned.

On the bodyside there are small details which add to interest, examples being additional bolt heads, label clips and lamp bracket (LNER version only).

On the roof, the BR type vents need to be replaced with the older, taller, torpedo type and there is a small grab rail adjacent to the chimney, just above and to the right of the upper grab rail (see photos).

LNER Liveries

Body : LNER Wagon Oxide (Phoenix Precision P67)
Solebars, headstocks, running gear : Black
Roof : Pre-war White / Wartime Red Oxide.

Lettering Sizes

Up to 1936 NE 18ins. Weight 4ins. Number 5ins.
From 1937 : NE 4ins. Weight 3ins. Number 4ins.

Useful reference sources with photos include:

'A Pictorial Record of LNER Wagons', Peter Tatlow, OPC

'British Railways Wagons', Don Rowland, David & Charles

'The 4mm Wagon' Part 3, Geoff Kent, Wild Swan