

12T Covered Vans (XP Rated)

The vast bulk of railway wagons fall into one of three groups: mineral wagons, open wagons, and covered vans. Mineral wagons have always been the largest of these, and open wagons outnumbered covered vans in a ratio of about 4:1 at the time of grouping. However, the operational convenience of vans, which do not require tarpaulins to protect loads, meant that the proportion of vans steadily increased as staff costs became more significant, and at nationalisation it was 2:1 and in 1971 covered vans outnumbered open wagons for the first time. BR built over 19,000 of its standard design of van with planked sides and 16,000 others.

This article only covers ordinary goods vans, not specialised ones like meat, fruit, fish, or banana vans, although some of these were later reclassified as ordinary goods vans. However, specialised vans were only about 10% of all vans. I have not bothered to note odd experimental vans or ones produced in small numbers.

The XP rating was introduced in 1938 and indicated the wagon could travel in express passenger trains, though in practice it meant they could travel at express speeds in what became in BR days headcode C and later class 3 trains. The wagons had to be fitted with vacuum brakes (or a through pipe), have oil axleboxes, long buffers, screw couplings, and a wheelbase of 10 ft or more. Many of the vans BR inherited were only 9 ft wheelbase, and only about half of the 10 ft wheelbase vans were fitted. BR only built XP rated vans (with the strange exception of some 9 ft wheelbase banana vans), and in 1956 they decided to standardise on XP rated vans so started adding vacuum brakes to unfitted 10 ft wheelbase vans and scrapping 9 ft wheelbase vans, though a few unfitted vans lasted until 1972.

Goods vans carried any sort of good that would benefit from the protection from the elements. Often the load was indicated by a poster, around 1' 6" square, pasted on the side of the van, for example Carta Carna dog food, Fison's fertiliser, Carr's Biscuits, Ribble Cement, Blue Circle Cement, BOMC Animal Foods, or Silcock's cattle food. Sometimes several could be seen on one van. These posters are rarely modelled, especially in N. Potatoes were another important load, mainly in autumn.

Like the open wagons (but not minerals) the covered vans were almost entirely railway owned, not private owner. The unfitted vans were operated under a common use agreement from 1919, and fitted ones from 1936 (except for the GWR who joined in 1939). This meant that vans could be used freely on all regions irrespective of who had built them, and there was no requirement to return them to the owning company. Even repairs would be done locally, specialised parts being requested from the region that built the van if necessary. As a result, wherever you were on the network you would see a similar mix of vans from all regions.

The RCH in 1923 specified that future vans should be of 12 ton capacity. During the grouping period large numbers of both fitted and unfitted vans were built, initially on 9 ft chassis but later on steel 10ft chassis, although the LNER continued to use wooden chassis for a long time. All the grouping company designs ran on BR in both unfitted and fitted versions, though the number of unfitted vans decreased as time progressed and they were either fitted or scrapped.

No standard RCH design was specified, so each of the four group companies each built vans to their own designs. Further variations arose from the materials used, as during WW2 steel became scarce and wood was substituted, while after the war planking was scarce and ply was substituted.

Thus in a typical BR van train you would usually find vans from all four grouping companies plus BR built vans, and usually several different variants of van from each source. What looks like a

train of 30 similar vans might contain 10 or more different designs and variants. If you look at a photograph you can often identify the first 5 or so vans in a train, and often all 5 are different.

XP rated vans most often travelled in trains consisting entirely of XP rated stock, typically mostly vans and container wagons, but also sometimes cattle trucks (at the front), and often fish vans, fruit vans, and open wagons. They also travelled in parcels trains along with non-passenger coaching stock such as GUVs, though rarely in passenger trains. When a few milk tanks had to be moved they were usually added to a van train (typically milk tanks would travel in such a train to a collection point where they were formed into a milk tank only train for a fast run to their destination, often London). XP vans were also common in slower goods trains containing a mixture of fitted and unfitted wagons, for example on the last leg of their journey.

The death knell for the 12T van was the introduction of larger air braked vans starting in the late 60s. These rapidly replaced the 12T vans and by 1976 there were very few still in regular revenue service. But odd vans, particularly Shocvans, survived for a long time – I have a photo from 1998 that shows one still painted bauxite.

Most designs of 12T vans and variants are available in N, some as ready to run and more as plastic kits. In addition, parts from different kits can be combined to produce further variants, or kits can be adapted by a little hacking.

Recognition

The prefix on the van number is a guide to its origin – B, E, L, S, or W – but is not reliable, as during WW2 the SR built vans to its design for the GWR and LMS, and in its early years BR built vans to designs by all the grouping companies, though mainly to SR and LMS designs.

BR painted all fitted vans bauxite (brown). Almost all were on a 10 ft wheelbase chassis and had the XP rating on the right of the sides. The permitted load of 12 tons was on the lower left hand side. Apart from the BR Palvan, they all had doors centrally in each side.

The roof shape is one of the easiest ways of distinguishing vans in photographs. The SR vans have a very distinctive elliptical roof, the corners of which are higher than other vans. The others all have plain curved roofs but with different curvature, GWR most curved, then BR standard vans, then LNER, and the flattest is the LMS – though there is little difference between the LMS and LNER vans. The photo below shows, from the left, the ends of SR, GWR, BR, LNER, and LMS vans.



The SR design of van can nearly always be identified by the elliptical roof shape. The planked versions are the only vans that have diagonal braces on the sides that slope inwards from the bottom, all other vans with diagonal braces have them sloping the other way. SR vans were all

to the same basic design, though prior to 1936 they had 9 ft chassis. However, the materials used varied. The sides can be even horizontal planking, or later "uneven" planking – an alternating pattern of two broad planks then two narrow planks, laid horizontally, or later still they were made of ply. The ends matched the sides when built. The uneven planked ones built during the war seem to have had a single metal (or ply?) plate containing both ventilators going all the way across the top of the end. Unlike the other group companies the SR fitted all its 10 ft vans, until austerity measures during the war led to only unfitted vans being built.

GWR and SR vans had twin ventilators on the ends, the others had single ventilators. So a van with twin vents and a simple curved roof is GWR designed; the first with 10 ft chassis were built in 1933, and about 6500 were built in total. The sides are almost identical to the BR standard wagon, so if you cannot see the ends the prefix on the number is the main guide. Later over 1000 were built to this design in plywood by the GWR then BR.

SR, GWR, and standard BR vans all had twin hinged doors. LMS and LNER vans had single sliding doors (some LMS fruit vans had twin doors however). So hinged doors and a single central vent on the end lets us distinguish the BR vans

The sides of BR vans could be built of horizontal planks or less often from ply. The ends were made of pressed metal with corrugations, a feature adopted from the LMS. The ends could be formed of two or three pieces of metal, in all cases the sections being joined by a horizontal seam. There were further variations in the number of corrugations in each of the three parts. One batch was built with planked sides but ply doors.

BR also built 2300 pallet vans between 1952 and 1961 with wider doors to enable pallets to be loaded using fork lift trucks. These had two hinged doors at the left hand end of each side, rather than centrally. The door position together with the prominent outside frames on both doors and sides make these vans highly distinctive (and very ugly!). They were unsatisfactory in service: they rode badly, wore badly, and were considered responsible for several accidents, resulting in most being withdrawn from revenue service in the mid-60s.

Their replacement was the far more successful Vanwide design which, uniquely among 12T vans, had two large sliding doors to give an extremely wide entrance. About 2000 were built in 1962, and some 600 were later converted to air brakes, which ensured their survival into the 1990s, and several are still in departmental use. <http://web.ukonline.co.uk/wagons/1101-1200/230182.jpg>

So that leaves the problem of distinguishing between the LMS and LNER vans, which is difficult as the two companies exchanged design ideas and produced very similar vans. The LMS vans all have metal ends, but some of the LNER ones do as well. The LMS vans, unlike standard vans from other companies, all had roof ventilators, though most of these were removed under BR (but note that fruit vans from all companies had ventilators). The LNER vans are all vertically planked, most LMS vans are horizontally planked.

The LNER only had one main design of 10 ft wheelbase van, although produced in three different materials. The planked version first built in 1934 had vertical planking, and the door (with vertical planks) had a single horizontal brace across the centre (this was much the commonest LNER van). The ends were metal, except for some produced during the war that had planked ends. After the war some were produced using narrow matchboard planking. These had no brace across the door, and are the only 12T vans with narrow vertical planking. The vans were also produced in ply, on these the doors had four vertical bracing strips on the door, plus a strip at top and bottom (but no vertical braces on the sides between door and end which the similar LMS vans had).

The LMS vans have the most variety, partly because they started producing metal ended fitted 12T vans on a 10 ft chassis relatively early, in 1930. The first design has corrugated steel ends in two parts, with the wrap round of constant width on the upper part and tapering outwards on the bottom part. The doors are plain with no brace. The vans had 4 torpedo vents when built in addition to the end vents. Most (3,455) had vertical planking, but 999 had horizontal planking.

The second design was introduced in 1934. These again had 2-part steel ends, though in this case the wrap around on the sides tapers uniformly from top to bottom. The main distinguishing feature is two vertical braces on the sides, mid way between the ends and the doors. All had 4 torpedo vents on the roof when built. They had horizontal planking on both sides and doors, though some were repaired with vertically planked doors. The doors were plain with no bracing. During the war 500 of these vans were built for the LMS by the SR with wooden horizontally planked ends. The vans that were vacuum fitted by BR were given a diagonal strengthening strut, as were a few of the originally fitted vans. In total over 20,000 of these vans were built to 4 almost identical designs.

There were also three versions produced in ply: 440 vans with no side bracing, metal ends, and 4 horizontal strips bracing the door; 2094 with vertical side braces, ply ends, and 4 vertical strips bracing the door; and 1350 with vertical side braces and a diagonal reinforcing strip, metal ends, and 4 horizontal bracing strips on the door (BR produced a further 1300 to this design).

Shocvans

Shocvans were for goods like biscuits that might be damaged by jolts during shunting or running. Instead of having the van body rigidly attached to the chassis, it was able to slide back and forwards a little against springs and shock absorbers. The body was about 1 ft shorter than a normal van, but otherwise to exactly the same design as the standard vans.

The GWR built 100 Shocvans based on their standard van design, and 500 more were built by BR in ply, plus a few to other group company designs. BR then built 5000 based on the standard BR van design. There were also 200 ShocPalvans, though the doors and sides on these had a different pattern of bracing from the normal Palvans. Thus Shocvans comprised about 4% of the BR van fleet in the 60s.

Shocvans were marked with three vertical white stripes on the doors and ends, these going about 1/3 of the way up. The width varied considerably. There are some pictures of unmarked Shocvans: they can be recognised by the shorter body, which stops 6" from the headstock, and the springs and shock absorbers which mounted centrally on the outside of the solebar (inside a metal cover)

Repairs

A further source of variations comes from repairs. A ply van might be repaired with planked doors, or vice versa. As only the SR used uneven planking, SR designed vans with uneven planking seem usually to have been repaired using even planking.

Often the roof ventilators on LMS vans were removed by BR when the roof was repaired.

Additional bracing might be added.

Brake Gear and Tie Bars

GWR, SR, early BR, early LMS, unfitted LNER vans, and later fitted LNER vans had 4-shoe brakes, i.e. a brake shoe on the inside of each wheel. When applied the force of the brakes would tend to push the axleboxes apart, especially with automatic brakes, so a tie bar connecting the bottoms of the W hangers together was sometimes added, always when fitted

with vacuum brakes. SR fitted vans had circular cross-section tie bars when built, the unfitted vans had none. GWR fitted vans and all BR designed vans with 4-shoe brakes were built with rectangular section tie bars. When BR fitted GWR, SR and LMS vans with vacuum brakes rectangular tie bars were added, and some of the LMS fitted vans also received them under BR. LNER vans never seem to have had tie bars.

Most LNER fitted vans, later LMS vans, and later BR vans including the Vanwides had 8-shoe brakes. As these brakes press on both sides of the wheel they do not need tie bars.

Correct tie-bars are very easy to add to a model using plastic strip, or brass wire with flattened ends for circular ones.

Most vans had Morton brake gear, with levers going to a central V hanger. Some, particularly SR vans, had a set of links to reverse the movement of one handle rather than the Morton cam, but still had a central V hanger. However, fitted LNER vans had completely different arrangement, with V hangers nearer the wheels and a much shorter handle.

BR and later GWR vans if built fitted had the coach style short horizontal vacuum pipes (that few of us in N would bother modelling), but later GWR vans and all SR, LMS, and LNER fitted vans had vertical vacuum pipes on the end. After building a few kits you will find yourself with a stock of spare vacuum pipes – don't assume because the kit includes them all examples of that van had them. When an unfitted van was later fitted under BR it would be given the coach style pipe, so you get a lot of SR, LMS, and LNER vans without the vertical pipes.

The later BR vans had improved buffers, usually the much larger diameter shank self-contained buffers. These were also used on some of the wagons fitted with vacuum brakes by BR.

Typical Mix of Vans

Within a fast train of 30 vans, a typical mix in the early 60s judging from photographs would be 10 BR vans, 10 LMS vans, 4 LNER vans, and 3 each from GWR and SR.

You might expect to find 4-5 container wagons included as well, and the train may have other XP rated stock.

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