

This is often the comment passed when a large load is moved by road. The simple answer is that the load is too big for the loading gauge dimensions of British Railways.

With the exception of three of the first main lines, that is the London & Birmingham, the Grand Junction and Brunel's Great Western, the early railways were built and financed as separate and independent lines. Later on some larger groups were formed through amalgamation, eg the Midland was formed from seven smaller companies by 1845. Independence meant that different engineers built the lines and frequently corners were cut because of shortage of money.

Apart from Brunel, who opted for a 7ft gauge between the rails, most railways adopted the Stephenson standard of 4ft 8 1/2 inches. It is said that this figure was arrived at with George Stephenson measuring the widths of the trackways used in the collieries in the north east and then averaging the results. This is known in railway jargon as 'the four foot', with the space between two sets of rails as the 'six foot', since it is commonly of about that dimension. The clearance about and above the rails is the running or working dimension or 'loading gauge'. In Britain this is referred to as the 'Berne Gauge'. Not all bridges, etc. meet this limit, however, the dimensions about 10 feet 6 inches above rail level varying widely. It was stated in the **Railway Magazine** for July 1898 that all Great Western bridges were 16 feet clear of the rails, but the B.R. instructions for loading goods wagons show 79 different profiles for the top part of the loading gauge on various parts of the system. No. 7 is the L.N.W.R. gauge which would apply to Clipston tunnels and the difference with the Midland Railway can be seen by comparing it with No. 8. No. 21 applies to Glenfield tunnel on the defunct Desford to Leicester West Bridge line. It was not unknown for a loaded van to pass through this tunnel on its way to West Bridge, only to foul the tunnel when trying to return empty. A second longstanding example is the tunnels on the old South Eastern & Chatham Railway between Tonbridge and Battle, where, until the interlacing of the up and down lines some years ago the Southern Railway had to build special carriages to a limit of 8ft 6 inches in width.

'WHY DIDN'T IT GO ON THE RAILWAY'

John Lovell



PARTS OF KILNS BEING MOVED FROM BARROW-IN-FURNESS TO POPLAR, NORTHAMPTON MAY 1921.

A further problem for long loads is the curvature of the line particularly in sidings or when crossing from one line to another. Curves were given in so many chains (22 yards) radius, and a 6 chains curve is quite tight. For a load such as a girder 90 feet long the width could be limited to as little as 2 feet, and that restricted to minimum of 4 feet and a maximum of 10 feet 3 inches above rail level.

Special train notices were issued for each train containing 'out of gauge' loads, and the planning could take some weeks, often with the movement restricted to Sunday working in order to have adjacent lines free of trains. These special train notices would give detailed timings and any instructions as to working over particular lines the special trains being accompanied by experienced inspectors.

The photograph on page 7 shows parts of kilns being moved from Barrow-in-Furness to Poplar, the train being seen in Northampton in May 1921. The dimensions of the cylinders are not recorded, but they would appear to be about 10 feet 6 inches in diameter, and are being carried on bogie well wagons. This load would require adjacent lines to be clear of other trains during its passage, and although the lamps on the engine are for a class 'H'. 'Through Freight', normally signalled 1 pause 4 on the signalling bell code, in this case a special code would be used, the L.M.S. Block Signalling Regulations for 1937 specify a code of 1 pause 2 pause 6, which would alert every signalman that the special requirements were to be followed. Sometimes it was necessary to remove signal posts and other lineside fixtures and special bogies were provided for some wagons which allowed the load carrying part to be moved sideways relative to the bogies.

Most overseas railway construction was carried out by British contractors, Thomas Brassey building extensively on the Continent, including part of the French system. Having experience of the early works in England, and being outside the sphere of Stephenson influence, more clearance was given to structures, the 'Berne Gauge' shown, being the adopted standard for continental Europe.

With the extensive use of 25kv overhead wires and the need for goods lines so thoughtlessly ripped out by B.R. in recent years, the carriage of large or heavy loads by rail must be a thing of the past. On the electrified lines bridges were raised and many of the pieces of lineside 'furniture' became redundant. There are proposals to adapt clearances for the carriage of the 9' 6" containers but the development proposed by Piggyback study to allow the carriage by rail of lorry semi-trailers seem unlikely to proceed,¹ leaving Railtrack in many areas saddled with the original loading gauge, and only new lines built from scratch able to meet the Berne Gauge.

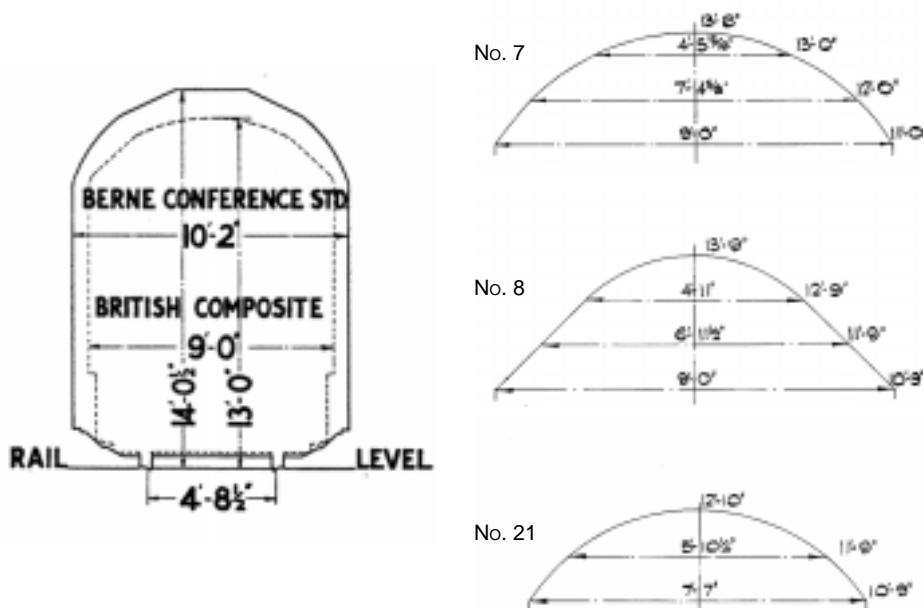
B.R. INSTRUCTIONS FOR LOADING GOODS WAGONS SHOW 79 DIFFERENT PROFILES FOR THE TOP PART OF THE LOADING GAUGE ON VARIOUS PARTS OF THE SYSTEM.

No. 7 L.N.W.R.

No. 8. MIDLAND RAILWAY

No. 21 APPLIES TO GLENFIELD TUNNEL ON THE DEFUNCT DESFORD TO LEICESTER WEST BRIDGE LINE.

THE 'BERNE GAUGE'.



¹ Focus the monthly journal of the Institute of Logistics and Transport, May 2000.