Lancaster Civic Vision

Celebrating our Heritage – Enhancing our Environment – Shaping our Future

CARLISLE BRIDGE

Lancaster Civic Vision Guide 116

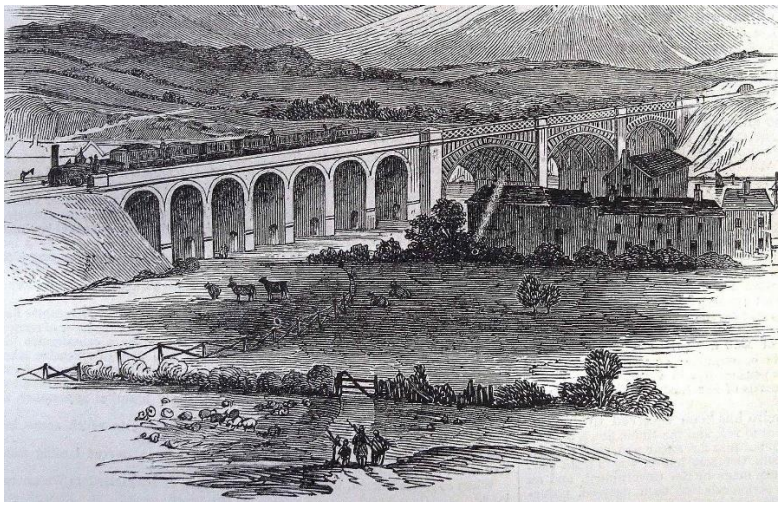
Carlisle Bridge across the River Lune in Lancaster carries what we now call the West Coast Mainline Railway on its way from Lancaster to Carlisle and then to Glasgow.

The line and bridge were built between 1844 and 1846 by the Lancaster and Carlisle Railway Company. Their line linked southwards at Lancaster to Preston, Manchester, Liverpool, Birmingham and London.

The engineers were Joseph Locke and his new associate for this project, John Edward Errington. The contractors for the whole line were a firm led by Thomas Brassey, William Mackenzie and John Stephenson (prolific railway builders). Harker & Booth got the contract for the Carlisle Bridge section.

The etching below shows the new bridge when it opened. The official opening of the bridge and the southern part of the line was on 21 September 1846 with the line fully open to Carlisle on 17 December.

The link to Glasgow came in 1848. The bridge is now Grade II listed.



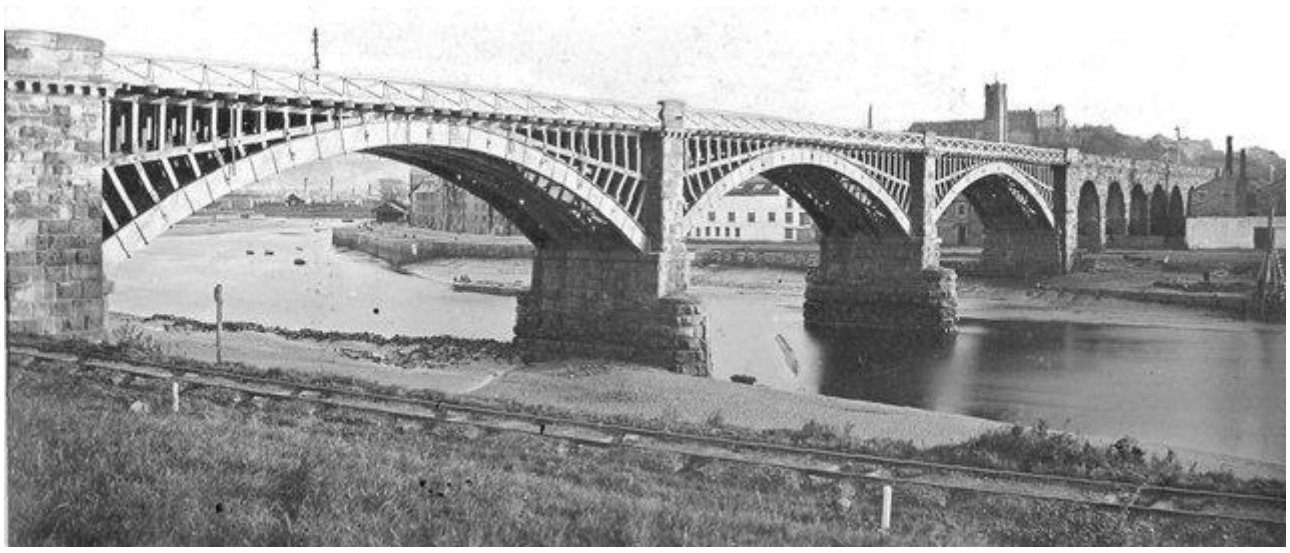
Illustrated London News, 19 December 1846

The bridge initially had two sections: seven masonry arches from Lancaster Castle Station northwards and then three long spans over the Lune supported on two massive masonry piers in the Lune itself. The earthworks on the north bank were soon punctured by the east-west railway line from Green Ayre Station to Morecambe in 1848 (now a cyclepath) and by what is now Morecambe Road.

From an engineering point of view the three long spans (120 ft, 37m) over the Lune are particularly interesting. Joseph Locke was a pioneer in building laminated-timber-arch bridges. The one over the Lune was the third of 16 he built and one of his longest spans with this type of construction.

Locke was noted for liking cheaper engineering solutions and, being built up from small components, this style could be erected quickly. However, three problems arose from this design in an age of steam trains: the threat of fire burning the timbers; water rotting the wooden beams; and the inability of the structure to remain fully stable when more, faster and ever-heavier trains crossed the bridge.

The average life of Locke's laminated-timber-arch bridges in Britain was 19 years: The original Carlisle Bridge lasted for 20/21 years until 1865/6 when the London and North Western Railway had the funds to replace the main timber elements by wrought-iron box girders and cross beams, but still with a timber floor. There were fears of fire spreading to the bridge, given the many highly inflammable materials used at Williamson's St George's Works at the south-west corner of the bridge. In 1894 the bridge's timber floor was replaced by steel beams. The undated photograph below shows the rebuilt bridge.



Carlisle Bridge after its rebuilding



This photograph shows the northern end of Carlisle Bridge on the far left, the line of the 1848 Green Ayre to Morecambe railway (after its electrification in 1908 and now a cyclepath) and the initially narrow, stone-arch bridge (right) across Morecambe R

The current, blue, steel beams carrying the railway tracks today were erected in 1962/3 by the Cleveland Bridge Company without closing the line. The beams were brought to the Lune by rail and lifted into place by crane. The line was electrified in 1974. There has always been a pedestrian walkway alongside the tracks linking Ryelands directly with central Lancaster and Lune Mills.

Today (2023) the Bridge carries around 220 trains a day, for passengers, freight and other railway operations.



The bridge today, showing the pedestrian walkway on its east side.



The bases of the arches on the south side of the bridge

References
Nuttall K and Rawlings T 1980 *Railways around Lancaster.* Clapham: Dalesman Publishing
Worthington WB 1922 *Presidential Address.* Minutes of the Proceedings of the Institution of Civil Engineers v213 (1) pp1-14

Other guides of interest

Guide No. 20 Railways around Lancaster and Carnforth
Guide No. 22 Lune Bridges Walks, Lancaster
Podcast No. 5 The Bridges over the River Lune
Podcast No. 9 Lancaster's Railways

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