



British Steam Tram Locomotive Builders

between 1878 and 1898

Black Hawthorn & Co | Thomas Green & Son
Beyer Peacock & Co | Kitson & Co
William Wilkinson & Co

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Cover Illustration: A Thomas Green locomotive of the Rossendale Valley Tramways Company towing a Milnes trailer car. The company was acquired by Rawtenstall Corporation in 1908 who continued to operate the tramway until 22 July 1909, the last regular use of steam traction on a street tramway in Britain. (LTHL collection).

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Black Hawthorn & Company

(William Black 1823-1905, Thomas Hawthorn 1838-1880)

1883-1888

Black Hawthorn & Company was established in 1865 when William Black and Thomas Hawthorn took over the Quarry Field Works of Richard Coulthard in Gateshead. The main business of the company became industrial tank locomotives which were mainly supplied to local works and collieries in the North East of England.

William Black had been born in Airdrie on 9 February 1823 and commenced his career with the Jarrow Alkali Company. He was later offered a partnership but declined because of ill health at the time. He then went on to start a foundry at Fatfield near Washington, County Durham before founding (with others) the Black Hawthorn business in 1865.

Thomas Hawthorn was born on 19 April 1838 in Newcastle and served his apprenticeship with Robert Stephenson & Company of Newcastle at the Forth Street Engine Works. In 1861 he moved to Marseilles where he became assistant engineer at the docks there. On his return to England in 1865 he co-founded the Black Hawthorn business and devoted much of his time and attention to the construction of a locomotive suited for tramway use.

The first engine of this type built by Hawthorn was tried on the Newcastle & Gosforth tramway lines in 1879 and the results obtained were generally regarded as satisfactory. Sadly he was killed in a fall whilst in Switzerland in 1880 where he had gone for health reasons.

In 1883 Black Hawthorn produced their first steam tram locomotive for the Alford & Sutton tramway, although using the Wilkinson patent under licence and between 1883 and 1888 32 steam tram locos were manufactured all to the Wilkinson patent.

Known British steam tram locomotives built by Black Hawthorn 1879-1888

Year	Number	New to	Fleet No	Gauge
1879	4	Newcastle & Gosforth Tramways	1-4?	4ft 8½ins
<i>Experimental locos built by Hawthorn.</i>				
1883	1	Alford & Sutton Tramway	1	2ft 6ins
1883	3	Tynemouth & District Tramways	1-3	3ft 0ins
1883-88	15	Gateshead & District Tramways	1-15	4ft 8½ins
1884	10	M. B. R. & O. Steam Tramways Company	42-51	3ft 6ins
1885	3	Huddersfield Corporation Tramways	7-9	4ft 7¾ins
Total	36			



Black Hawthorn built steam tram loco No. 51 of the Manchester, Bury, Rochdale & Oldham Steam Tramways Company dating from 1884. (LTHL collection).

Thomas Green & Son Ltd

(Thomas Green 1810-1892)

1882-1898

Thomas Green was born on the 18 November 1810 and commenced his first venture as a wireworker in Leeds in 1835 from a small shop in Lowerhead Row. He gradually expanded the business and manufactured a range of products, although by the 1850's he had begun to offer lawn mowers and rollers, which brought about a considerable expansion in trade. It was at this time that he moved to the Smithfield Ironworks in North Street.

In 1874 Green built his first steam road roller which became a substantial part of the business and continued to be produced until the closure of the company.

The company was incorporated on 14 June 1879 as Thomas Green & Son Ltd.

In 1882, when steam trams were in demand and their potential was realised, Thomas Green constructed their first steam tram locomotive, although this was to a design by William Wilkinson. The manufacture of these tram locomotives led Green & Son to believe they could produce an improved design, which first appeared in 1885. It had a horizontal boiler and a conventional air condenser in place of the superheater and, as the design

evolved, various features were re-designed and improved. In 1889 compound cylinders were used to condense the steam and in 1890 this was superseded by that designed by Charles Burrell & Sons of Thetford (better known for their road engines) which involved passing the steam between two double air cooled pipes, one inside the other. Sadly Thomas Green passed away in April 1892.

Greens manufactured over 200 tram locomotives between 1882 and 1898 when this type of locomotive ceased to be built.

Known British steam tram locomotives built by Thomas Green 1882-1898

Year	Number	New to	Fleet No	Gauge
1882	2	Leeds Tramways Co Ltd	5-6	4ft 8½ins
1882	3	M.B.R.& O. Steam Tramways Co	1-3	4ft 8½ins
1883	4	M.B.R.& O. Steam Tramways Co	9-12	3ft 6ins
1883	8	M.B.R.& O. Steam Tramways Co	27-34	3ft 6ins
1883	2	North Shields & Tynemouth	4-5	3ft 0ins
1883	4	South Staffordshire Tramways	13-16	3ft 6ins
1883	1	Bradford Tramways & Omnibus Co	7	4ft 0ins
1884	4	Bradford & Shelf Tramways	1-4	4ft 0ins

Known British steam tram locomotives built by Thomas Green 1882-1898

Year	Number	New to	Fleet No	Gauge
1884	8	South Staffordshire Tramways	30-37	3ft 6ins
1884	2	Coventry & District Tramways	3-4	3ft 6ins
<i>The above tram locomotives were built to the Wilkinson design under licence.</i>				
1885	3	Bradford & Shelf Tramways	5-7	4ft 0ins
1885	4	Bradford Tramways & Omnibus Co	7, 9-11	4ft 0ins
1885	2	Dundee & District Tramways	1-2	4ft 8½ins
1885	1	Blackburn & Over Darwen Tramways	8	4ft 0ins
1885	3	Dundee & District Tramways	4-5	4ft 8½ins
1885	1	Leeds City Tramways	12	4ft 8½ins
1885	1	Birmingham & Midland Tramways	13	3ft 6ins
1886	2	Dundee & District Tramways	6-7	4ft 8½ins
1886	1	North London Tramways	?	4ft 8½ins
1886	3	Bradford & Shelf Tramways	5, 9-10	4ft 0ins
1886	5	Birmingham & Midland Tramways	20-24	3ft 6ins
1886	7	Accrington Corporation Tramways Co	1-7	4ft 0ins
1886	2	Blackburn & Over Darwen Tramways	9-10	4ft 0ins
1887	3	Bradford & Shelf Tramways	1,3-4	4ft 0ins
1887	1	Bradford Tramways & Omnibus Co	12	4ft 0ins
1887	1	Dundee & District Tramways	8	4ft 8½ins

Known British steam tram locomotives built by Thomas Green 1882-1898

Year	Number	New to	Fleet No	Gauge
1887	14	Blackburn Corporation Tramways	1-14	4ft 0ins
1887	7	Accrington Corporation Tramways Co	8-14	4ft 0ins
1887	2	Wolverton & Stoney Stratford	1-2	3ft 6ins
1888	2	Dundee & District Tramways	9-10	4ft 8½ins
1888	2	Bradford & Shelf Tramways	2,11	4ft 0ins
1888	10	Bradford Tramways & Omnibus Co	13-22	4ft 0ins
1888	1	Rossendale Valley Tramways	1-3,15	4ft 0ins
1889	5	Rossendale Valley Tramways	4-8	4ft 0ins
1889	2	Bradford Tramways & Omnibus Co	23-24	4ft 0ins
1889	7	Drypool & Marfleet Tramways	1-7	4ft 8½ins
1889	5	Leeds City Tramways	19-23	4ft 8½ins
1890	7	St Helens & District Tramways	1-7	4ft 8½ins
1890	5	Leeds City Tramways	24-28	4ft 8½ins
1890	2	Bradford Tramways & Omnibus Co	25-26	4ft 0ins
1890	1	Blackburn & Over Darwen Tramways	11	4ft 0ins
1891	2	St Helens & District Tramways	8-9	4ft 8½ins
1891	2	Huddersfield Corporation Tramways	19-20	4ft 8½ins
1891	2	Accrington Corporation Tramways Co	15-16	4ft 0ins
1891	1	Bradford Tramways & Omnibus Co	27	4ft 0ins
1892	1	Blackburn & Over Darwen Tramways	12	4ft 0ins

Known British steam tram locomotives built by Thomas Green 1882-1898

Year	Number	New to	Fleet No	Gauge
1892	8	Huddersfield Corporation Tramways	23-30	4ft 8½ins
1893	3	Bradford & Shelf Tramways	12-14	4ft 0ins
1893	1	Rossendale Valley Tramways	10	4ft 0ins
1893	7	Bradford Tramways & Omnibus Co	28-34	4ft 0ins
1894	1	Bradford Tramways & Omnibus Co	35	4ft 0ins
1894	1	Accrington Corporation Tramways Co	17	4ft 0ins
1894	2	Dundee & District Tramways	11-12	4ft 8½ins
1894	2	Leeds City Tramways	29-30	4ft 8½ins
1895	2	Blackburn & Over Darwen Tramways	13-14	4ft 0ins
1898	2	Accrington Corporation Tramways Co	18, 6	4ft 0ins

Total 190

Notes: A further 23 steam tram locomotives were exported.



A Thomas Green steam tram loco of Blackburn Corporation Tramways Company, one of fourteen purchased in 1887. (LTHL collection).

Beyer Peacock & Company

(Charles Beyer 1814-1876, Richard Peacock 1820-1889)

1883-1886

Founded in 1854 by Charles Beyer and Richard Peacock the company manufactured railway locomotives and machine tools becoming one of the most famous of all railway locomotive builders.

Charles Frederick Beyer was born on 14 May 1813 in Saxony, the son of a weaver. He attended Dresden Polytechnic and on graduation came to England to report on weaving techniques returning to Dresden later to file his report. In the late 1830's (the exact date is uncertain) he returned to Manchester to gain experience at a large foundry. He joined Sharp, Roberts & Company (later Sharp Brothers) as a draughtsman where he gained experience in locomotive design and building. He stayed for 16 years until he left in 1853 to found his own company with Richard Peacock. He died on 2 June 1876.

Richard Peacock was born on 9 April 1820 in Swaledale, Yorkshire, the seventh son of a miner. He moved with his father to Leeds where he attended Leeds Grammar School and was apprenticed to the engineering company Fenton, Murray & Jackson of Holbeck, Leeds at the age of 14 and by the age of 18 was a locomotive superintendent on the Leeds & Selby

Railway. He had met Beyer through the acquisition of locomotives from Sharp Brothers, and from both being among the founders of the Institute of Mechanical Engineers in 1847. Together they founded the Beyer Peacock company and built their own factory on land at Gorton, Manchester. From 1885 he became MP for Gorton. He passed away 3 March 1889.

In 1881 Beyer Peacock built a combined steam car with a body by Ashbury and from 1883 to 1886 produced 86 steam tram locomotives built to the Wilkinson patent with vertical boilers and geared drive, whilst 97 were built for export to Java Tramways without condensers but with locomotive type boilers. In all around 200 steam tram locos were produced.

Known British steam tram locomotives built by Beyer Peacock 1883-1886

Year	Number	New to	Fleet No	Gauge
1881	1	North Staffordshire Tramways	5	4ft 0ins
		<i>Top-covered double-deck steam car with body by Ashbury.</i>		
1883	6	M.B.R.& O. Steam Tramways Co	21-26	3ft 6ins
1883	10	South Staffordshire Tramways Co	3-12	3ft 6ins
1883	20	North Staffordshire Tramways Co	1-20	4ft 0ins
1884	2	Coventry & District Tramways Co	1-2	3ft 6ins
1885	8	South Staffordshire Tramways Co	22-29	3ft 6ins

Known British steam tram locomotives built by Beyer Peacock 1883-1886

Year	Number	New to	Fleet No	Gauge
1886	20	M.B.R.& O. Steam Tramways Co	63-82	3ft 6ins
1886	6	M.B.R.& O. Steam Tramways Co	82-88	4ft 8½ins
1886	1	M.B.R.& O. Steam Tramways Co	91	4ft 8½ins
1886	13	Birmingham Central Tramways Co	58-70	3ft 6ins
Total	86			



Beyer Peacock built this steam tram loco (No. 77) to the Wilkinson patent for the Manchester, Bury, Rochdale & Oldham Steam Tramways Company in 1886. (LTHL collection).

Kitson & Company
(James Kitson 1807-1885)
1878-1898

James Kitson was born in Leeds in October 1807. He established the Airedale Foundry at Leeds in 1837 in partnership with Charles Todd and in 1838 they were joined by David Laird to become Todd, Kitson & Laird. Over the next few years however, the title of the partnership changed frequently as personnel changed but in 1863 it became Kitson & Company on the death of his then current partner William Hewitson and James Kitson continued the business with two of his sons.

The first steam locomotives were built in 1876 to a design by W. R. Rowan of Copenhagen and were combined steam cars for use in that city. In 1877 Kitson built a steam tram locomotive to their own design with vertical boiler and valve gears, although after trials Kitsons settled on a horizontal boiler.

Kitsons obtained a number of patents relating to locomotives and tramways. Patent GB 1178 of 1878 proposed an arrangement of the driving gear of trams, enabling easier access for the driver, while at the same time enclosing the working parts in order to protect them from mud and dust.

Further improvements in the working of the valve gear followed a year later (patent reference: GB 4512 of 1879). This patent also focused on controlling the speed of the tram and automatic braking. The Board of Trade had brought in a law requiring tram brakes to activate automatically once the tram reached 10mph.

Kitsons introduced a condensing system consisting of arched transverse tubes on the roof which provided greater efficiency.

Using their experience of locomotive engines Kitsons were able to introduce a series of innovations to trams, further bolstering their already well-established reputation. The 'Kitson valve gear' became widely known and used.

Over 300 steam tram locomotives were produced up until 1900 (many were exported to Australia, New Zealand and other countries), although the last steam locomotives delivered in Britain were for the Birmingham Central Tramways Company in 1898.

Known British steam tram locomotives built by Kitson & Co 1878-1898

Year	Number	New to	Fleet No	Gauge
1878	1	Leeds City Tramways (demonstrator)	?	4ft 8½ins
1880	1	Leeds City Tramways	1	4ft 8½ins
1881	2	Edinburgh Tramways	1-2	4ft 8½ins
1881	3	Leeds City Tramways	2-4	4ft 8½ins
1881	6	Blackburn & Over Darwen Tramways	1-6	4ft 0ins
1881	8	Vale of Clyde Tramways	1-8	4ft 7¾ins
1881	5	Burnley & District Tramways	1-5	4ft 8½ins
1882	1	Blackburn & Over Darwen Tramways	7	4ft 0ins
1882	6	Bradford Tramways & Omnibus Co	1-6	4ft 0ins
1882	1	Birmingham & Aston Tramways	1	3ft 6ins
1883	5	Birmingham & Aston Tramways	2-6	3ft 6ins
1883	4	Birmingham & Aston Tramways	9-12	3ft 6ins
1883	5	Dudley & Stourbridge Tramways	1-5	3ft 6ins
1883	1	Vale of Clyde Tramways	9	4ft 7¾ins
1884	3	Dudley & Stourbridge Tramways	6-8	3ft 6ins
1884	7	Leeds City Tramways	4-10	4ft 8½ins
1884	1	Bradford Tramways & Omnibus Co	8	4ft 0ins
1884	20	Birmingham Central Tramways	1-20	3ft 6ins
1884	4	Birmingham & Aston Tramways	13-16	3ft 6ins
1885	7	Barrow in Furness Tramways	1-7	4ft 0ins

Known British steam tram locomotives built by Kitson & Co 1878-1898

Year	Number	New to	Fleet No	Gauge
1885	12	Birmingham & Midland Tramways	1-12	3ft 6ins
1885	7	Birmingham Central Tramways	21-27	3ft 6ins
1885	1	Birmingham Central Tramways	36	3ft 6ins
1885	1	Dudley & Stourbridge Tramways	9	3ft 6ins
1885	1	Leeds City Tramways	11	4ft 8½ins
1885	5	Dudley, Sedgley & Wolverhampton	1-5	4ft 8½ins
1886	6	Birmingham & Midland Tramways	14-19	3ft 6ins
1886	4	Birmingham & Aston Tramways	17-20	3ft 6ins
1886	4	Leeds City Tramways	14-16	4ft 8½ins
1886	7	Birmingham & Aston Tramways	21-27	3ft 6ins
1887	2	Leeds City Tramways	17-18	4ft 8½ins
1887	1	Huddersfield Corporation Tramways	10	4ft 7¾ins
1888	6	Huddersfield Corporation Tramways	11-16	4ft 7¾ins
1889	2	Huddersfield Corporation Tramways	17-18	4ft 7¾ins
1891	2	Huddersfield Corporation Tramways	21-22	4ft 7¾ins
1891	1	Dudley & Stourbridge Tramways	10	3ft 6ins
1892	1	Barrow in Furness Tramways	8	4ft 0ins
1893	5	Wigan & District Tramways	10-14	3ft 6ins
1893	10	Birmingham Central Tramways	71-80	3ft 6ins
1894	2	Birmingham Central Tramways	81-82	3ft 6ins

Known British steam tram locomotives built by Kitson & Co 1878-1898

Year	Number	New to	Fleet No	Gauge
1894	2	Huddersfield Corporation Tramways	31-32	4ft 7¾ins
1895	1	Dudley & Wolverhampton Tramways	7	4ft 8½ins
1895	2	Dudley & Stourbridge Tramways	11-12	3ft 6ins
1895	2	Wigan & District Tramways	15-16	3ft 6ins
1896	2	Wigan & District Tramways	17-18	3ft 6ins
1897	2	Huddersfield Corporation Tramways	8-9	4ft 7½ins
1897	2	Blackburn & Over Darwen Tramways	1-2, 15	4ft 0ins
1897	8	Birmingham Central Tramways	83-90	3ft 6ins
1898	1	Birmingham Central Tramways	57	3ft 6ins
1898	3	Birmingham Central Tramways	60-62	3ft 6ins

Total 197

Notes: A further 102 steam tram locomotives were exported. 3 built for the West Lancashire Railway, although classed as tram locomotives by Kitson, were actually railway locomotives without the enclosed sides necessary for street running and are not included here.

British Steam Tram Locomotive Builders



Birmingham & Aston Tramways No. 1 was a Kitson steam tram loco dating from 1882. (LTHL collection).

William Wilkinson & Company

(William Wilkinson 1838-1906)

1881-1896

William Wilkinson was born in Patricroft, Eccles in 1838 and, although little is known of his early life, by 1871 he was married to Elizabeth and had a daughter Louisa and a son, also William. By 1871 he was described as an engineer and was the proprietor of an iron foundry which employed 10 men and 10 boys. His first wife sadly passed away in 1879 and in 1880 he married his second wife Harriet Mills in Lytham.

In the same year he designed a locomotive with a vertical boiler and cylinders, the motive power being transmitted by means of gearing on the crankshaft onto one of the axles. No condenser was fitted but a superheater was housed in the firebox through which the exhaust steam was passed resulting in an almost invisible emission of steam. In June 1881 the first engine to his design was completed and during the autumn of that year it ran trials on Wigan Tramways track and was demonstrated to local authority representatives on 5 November 1881.

The new design appeared just as an expansion of steam tramways occurred and by the time the Company went into receivership just 5 years later almost a quarter of all steam engines in the British Isles were of the

Wilkinson patent. A good number were constructed at Wilkinson's Holme House Foundry at Pemberton near Wigan (later absorbed into the borough), but many were also built under contract by such well-known manufacturers as Black Hawthorn, Beyer Peacock and Thomas Green.

Production commenced in the summer of 1882 with three engines for Wigan Tramways, who had already taken the original engine, after which orders began to come in from other operators. The first large order came from the grandly titled Manchester, Bury, Rochdale and Oldham Steam Tramways Company who ordered 20 engines, although various problems soon became apparent, resulting in several of the engines being rebuilt but soon afterwards orders began to flood in, so much so that arrangements had to be made with other manufacturers to build engines to the Wilkinson patent. In 1883, Holme House Foundry produced no less than 38 steam locomotives, no mean feat for such a small works. In total 63 engines came out of Holme House, whilst Black Hawthorn produced another 32, Beyer Peacock 71 and Green 38, although there is some dispute about the final total of Wilkinson patent engines produced, quoted variously as 201, 204 and 207! This is probably due to the engines supplied to the Plymouth, Devonport & District company which are variously quoted as 2, 4 or 5.

The Wilkinson engines proved very successful for a while until the advent of a new and improved design by Kitson with which Wilkinson engines failed to compete. Production virtually ceased in 1886 and the Wilkinson company

subsequently went into receivership.

In 1888, however, the Black Hawthorn company of Gateshead built 2 more engines to the Wilkinson patent for the Gateshead & District Tramways Company, who already had a fleet of Wilkinson locomotives. Surprisingly the final locomotive built was in 1896 and was constructed by the Wilkinson firm themselves for the Giants Causeway system in Ireland, although they were in liquidation at the time. The assets of the Company were finally auctioned off in 1902.

William Wilkinson is recorded as passing away in West Derby in 1906.

Known British steam tram locomotives built by Wilkinson & Co 1881-1886

Year	Number	New to	Fleet No	Gauge
1881	1	Wigan Tramways	1	3ft 6ins
1882	3	Wigan Tramways	2-4	3ft 6ins
1882	2	Huddersfield	1-2	4ft 7 $\frac{3}{4}$ ins
1882	3	M.B.R. & O.	1-3	4ft 8 $\frac{1}{2}$ ins
1883	5	M.B.R. & O.	4-8	4ft 8 $\frac{1}{2}$ ins

Known British steam tram locomotives built by Wilkinson & Co 1881-1886

Year	Number	New to	Fleet No	Gauge
1883	2	Birmingham & Aston	7-8	3ft 6ins
1883	8	M.B.R. & O.	13-20	4ft 8½ins
1883	2	South Staffordshire	1-2	3ft 6ins
1883	4	Wigan Tramways	5-8	3ft 6ins
1883	4	M.B.R. & O.	35-38	4ft 8½ins
1883	4	South Staffordshire	17-20	3ft 6ins
1883	4	Huddersfield	3-6	4ft 7¾ins
1883	1	South Staffordshire	21	3ft 6ins
1884	1	Wigan Tramways	9	3ft 6ins
1884	5	Plymouth, Devonport & District	1-5	3ft 6ins
1884	2	Brighton & District	1-2	3ft 6ins
1885	2	M.B.R. & O.	2	3ft 6ins
1885	1	Nottingham & District Tramways	1?	4ft 8½ins
1886	4	Wigan	9-12	3ft 6ins
1886	2	M.B.R. & O.	89-90	3ft 6ins
Total	60			

No. 9 supplied to Wigan in 1884 was an experimental worm-gear loco, only temporarily in stock.



A Wilkinson steam locomotive and trailer, probably at the Summit in Heywood. One of several 3ft 6ins narrow gauge engines supplied to the Manchester, Bury, Rochdale and Oldham Steam Tramways Company. (Tramways & Light Railway Society).

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