



TfL Corporate Archives Research Guides

Research Guide No 19: A Brief History of the Hammersmith and City Line

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Opening and early years

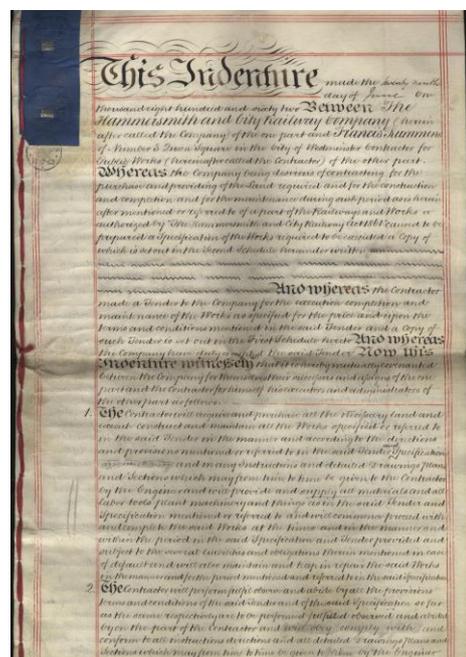
Prior to the opening of the Hammersmith Branch, the first underground railway service ended in the west at Paddington (Bishop's Road). Thereafter there were Great Western Railway tracks that took the line to just west of a point now occupied by Westbourne Park station. It was from this latter point that the extension, through fields on the limits of suburbia to Hammersmith opened on 13 June 1864. At this time, the only intermediate stations on the two mile long railway were Notting Hill (now Ladbrooke Grove) and Shepherd's Bush.

The line was unusual in that it was jointly operated by the Great Western Railway (GWR) and Metropolitan Railway (MR) companies for many years. From its opening until 1868/9, the line had three running rails, to allow the operation of MR standard gauge (4ft 8½in) and GWR broad gauge (7ft 0¼in) trains. In the event, the GWR provided a broad gauge service until 1 April 1865, with the MR taking over thereafter. The 30 minute service interval on the branch was infrequent by today's standards, and was formed by extending alternate trains from Farringdon Street (on a 15 minute service pattern) from Paddington to Hammersmith.

Within a few years of its opening, a number of lines became joined to the Hammersmith Branch. A half mile long line opened from Latimer Road junction to Uxbridge Road junction (on the West London Railway) on 1 July 1864. Here, carriages for Addison Road (now Kensington Olympia) were uncoupled from Hammersmith trains and taken there and back by a separate locomotive.

On 1 January 1869, a new London and South Western Line opened between north of Addison Road and Richmond via Ravenscourt Park, with a new station at Hammersmith (Grove Road). This required the re-siting of the original terminus at Hammersmith. This line was connected to the original Hammersmith branch just north of Hammersmith station at Grove Junction, and the GWR operated an hourly service between Richmond and Paddington from 1 June 1870. Although this was withdrawn after just five months, it was replaced in 1877 by an MR service from Richmond to Aldgate.

At its opening, the Hammersmith branch crossed the Great Western Main Line. A number of accidents involving local and main line trains prompted formal inquiries by the Railway Inspectors. The recommendations included removing the flat junction, and this was achieved by means of an underpass, opened on 12 May 1878.



From 1 August 1872, the GWR operated trains from Moorgate via Addison Road to Mansion House. This continued until 30 June 1900, when the line was terminated at Earl's Court. After 1 February 1905, the service was further cut back to Addison Road and operated by the MR. On 31 October 1910 the service was reduced to a shuttle between Addison Road and Edgware Road and ceased altogether on 21 October 1940 as a result of air raid damage, never to be resumed.

From 6 October 1884, trains ran from Hammersmith via the north side of the Circle line to New Cross. This service was cut back to Whitechapel on electrification on 2 December 1906, but again operated from 31 March 1913 (when the East London Line was electrified) until 20 November 1939.

Staff performance and discipline

A contemporary insight into working arrangements is provided by Hammersmith & City Line staff registers. These date back to 1864, and include rates of pay, together with incidents, disciplinary penalties and awards. Train drivers were relatively well paid at 6/- (30p) per day in 1864, but penalties such as cautions, fines and suspensions with loss of pay were imposed. These were applied for losing time, not signing on or off duty, lateness/absence, not taking adequate care of their engine, exceeding speed limits, overshooting platforms, hitting buffer stops or other vehicles when shunting, causing a delay (for example, due to inadequate steam pressure), being unfit through drink, and not completing paperwork connected with use of coal. Penalties for passing signals at danger or taking an incorrect route tended to be severe.

Disciplinary entries were not always without humour. In 1908, Conductor John Ford was suspended for a week and suitably cautioned for 'misconducting himself overnight in Hammersmith contractors' yard, digging up earth with a pick axe, and striking pieces of coal in the air with a broom'. In 1908, Conductor Geoff Hazard was cautioned for playing football with a paper ball on Addison Road platform with other conductors.

Signalmen were required for each signalling section; the safe separation and routing of trains depended on compliance with the laid down procedure, and had few of the modern safeguards. Here, the register entries show that errors resulting in derailments and two trains in one section were not that uncommon. Collisions were generally averted by the signalmen noticing their error in time, or prompt action by the train driver, assisted by the low speeds of trains at that time.

Station staff were less well paid than train drivers – the typical wage for a ticket collector was 18/- (90p) per week. Disciplinary infractions included passenger complaints of incivility or incorrect change, not checking tickets, not opening stations or ticket offices to time. For station staff and signalmen, deferral of part or all of a six monthly 50/- bonus was sometimes invoked.

A singular character on the line was Job Gillingham. He was the Chief Inspector for the Hammersmith and City line from 1878 until his retirement, aged 69, in 1908. His role included following up the delays to traffic and passenger complaints, and many staff have an entry which reads 'cautioned (or sharply cautioned) by Mr Gillingham'. At the

end of his career, his annual salary was £225. In recognition of his diligence and absence free service, he was specially awarded a pension of £2 per week, funded equally by the GWR and MR pension funds. At the time, a typical pension for other staff was 6/- per week.

A joint committee of MR and GWR officers ran the Hammersmith and City Line – each year a list of staff of 60 years of age or over. A recommendation dated 17 March 1906 included nine names, and concluded as follows:

‘All the men are in good health, and carry out their duties satisfactorily, and we recommend that they be retained in the service during the current year’.

Stations

The number of stations was added to over the years, during which time there were some station name changes, as follows.

Westbourne Park	opened 1 Feb 1866
Latimer Road	opened 16 Dec 1868
Royal Oak	opened 30 Oct 1871
Notting Hill	renamed Notting Hill & Ladbroke Grove in 1880, renamed Ladbroke Grove (North Kensington) 1 Jun 1919, renamed Ladbroke Grove in 1938.
Wood Lane	opened 1 May 1908, renamed White City 23 Nov 1947, closed 23 Oct 1959
Goldhawk Road	opened 1 Apr 1914
Shepherd’s Bush	Re-sited 1 Apr 1914

20th Century: Modernisation – Electric Trains and Signalling

The changeover from steam to electric traction on the Hammersmith and City Line, driven by the intolerable atmosphere caused by steam locomotives in tunnel sections of the Circle line, was started and completed in November and December 1906. The power was initially provided by the GWR from a power station at Park Royal, and substations at Royal Oak and Shepherd’s Bush. The latter converted the high voltage (11 kV ac) supply to 600 volts dc using La Cour converters. These were of a unique type, similar to a motor generator, but were electrically as well as mechanically coupled together, an arrangement which apparently saved space.

Initially, 20 six car trains were provided for the service to Whitechapel. First class accommodation was provided until 1936. In contrast to other lines in the central area, which had automatic signalling installed around 1905, signalling on the branch continued to be manual until the 1920s. The mile owned by GWR between Westbourne Park and Paddington was the last to be modernised, in 1929 (this section was not formally vested in London Transport until December 1973).

C69 Stock

Exhibit No. 18

General Particulars

Length per car – Driving Motor car	52' 7"	16,027 mm.
Trailer car	49' 0"	14,935 mm.
Width:	9' 7"	2,921 mm.
Weight: Driving Motor car	31 tons	31.5 tonnes
Trailer car	19 tons	19.3 tonnes
Traction motors:	LT.117	
Wheel diameter:	71 h.p. (continuous)	
Braking:	3' 0"	914 mm.
	Rheostatic, electro-pneumatic and Westinghouse	
Control equipment:	P.C.M. type camshaft	
Seating:	32 per car	

The C69 Stock was built by Metro-Cammell for use on the Circle and the Hammersmith and City lines. The car bodies are of unpainted aluminium alloy panels, extrusions and castings, and the underframes are of aluminium alloy extrusions and castings with steel headstocks and bolsters.

The guard's position is in the rear cab instead of in the conventional place in the saloon of the last car. A sliding, air-operated door, instead of a swing door, assists the guard in his station duties.

The C69 Stock is provided with similar traction control and braking equipment to the 1967 Tube Stock, but is not equipped for automatic operation.



A new feature on this stock was the metacone secondary suspension, the primary suspension being the conventional rubber chevron type. Metacones are combined rubber and air springs, and in order to maintain the cars at the correct height, they have to be inflated to varying pressures as the passenger loading changes. Each car has its own control to vary the metacone pressure and the opportunity was taken to use the same device to control the acceleration and braking rates. Thus, high acceleration and braking rates can be achieved when the train is full without the risk of wheel slip and slide when the train is empty.

Two car units are formed with a driving motor car and a trailer car. The normal operation of trains on the Circle Line requires trains to be turned around and because of this the couplers at both ends of all the two car units are identical. The trains are six cars long, formed by coupling three units.

From 1928 to 1933, traffic on the branch fell steadily, with annual revenue falling from £106,000 to £76,000 in this five year period. This appears to have prompted a joint inspection of the line by GWR and London

Transport officials in January 1934.

A report by the London Transport Chief Engineers Office in 1936 noted poor track condition on the branch, and that the signalling was old and out of date, with colour light signals needed instead of semaphore arms, and that the power supply was taken from an inadequate lighting circuit. Remedial action was included in the 1936–1940 modernisation programme: however, signalling throughout the branch was not brought up to London Transport standards until the 1970s.

The first generation of electric trains on the branch had manually operated doors. In 1936, JP Thomas, the General Manager Railways for London Transport, reported to the Hammersmith and City Joint Committee on early experience with an experimental train fitted with air worked doors. He noted improved safety from preventing passengers boarding or alighting from trains in motion, and that all cars were 3rd class, but with furnishings of existing 1st class quality. Air worked doors thereafter became the norm for subsequent rolling stock.

The main changes in the 1960s and 70s were the removal of crossovers and sidings, the cessation of goods traffic, and cutting the connection between the London Transport and GWR lines in the Paddington area. These decades also saw the introduction of C stock trains, which had four sets of double doors per carriage, to increase capacity and keep rush hour station stop times to a minimum.

One of the difficulties in keeping the Hammersmith Branch service reliable was the number of junctions its trains had to negotiate in the central area. Disruption spread quickly from one line to another, and junctions frequently became congested with abnormal numbers of trains. In Dec 2007, after 18 months' planning, a new service pattern was introduced (the 'Extended Circle') which increased the scheduled service on the Hammersmith Branch by 70%, from 7.5 to 12 trains per hour. This is projected to increase further to 16 trains per hour once automatic operation has been introduced throughout the subsurface lines in 2018.

In 2012, the first of the new generation of S (suburban) stock trains was introduced on the Circle and Hammersmith lines, initially between Hammersmith and Moorgate.

These are 24% longer than C stock trains, and air conditioning has been fitted to cool customers in the summer months.

Primary Sources

The following references from the TfL Archive collection provide further detail on the above summary.

Archives series reference:	Covering dates	Series description
LT000699/039	1973	Paddington (H&C) track layout arrangements
LT000521/166	1933	Hammersmith branch signalling modernisation
LT000509/113	1934	Ladbroke Grove station
LT000509/115	1934	Latimer Road station
LT000844/253	1974	Hammersmith & City charging arrangements
LT000844/251	1934	Apportionment of signalling maintenance charges for Hammersmith cabin
LT000699/033	1957	Latimer Road junction removal
LT000528/056	1893	Arbitration between GWR and MR: proceedings before Lord Herschell
LT000932/005	1905	Agreement between GWR and MR regarding electrified services
LT001061/011	1966	Proposal to 'merge' Shepherds Bush and Goldhawk Road stations
LT000844/252	1922	Uxbridge Road junction maintenance charges
LT000814/148	1966	Segregation of GWR and LT tracks at Paddington
LT000346/109	1861	H&C Railway and GWR agreement regarding line construction and operation
LT001386/001	1907 to 1929	MR and GWR Officers meetings to operate the Hammersmith branch
LT000449/029	1865	Staff Register No 1 Hammersmith & City: station and signalling staff
LT000449/072	1864	Staff Register Edgware Road: train drivers and firemen

Archives series reference:	Covering dates	Series description
LT000449/073	1900	Train staff discipline Hammersmith & City: conductors

Bibliography

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The Metropolitan line, a brief history, by Charles E Lee, Published by London Transport Executive, 1972, ISBN 0 85329 033 4.

Steam to Silver. An illustrated history of London Transport surface railway rolling stock, J Graeme Bruce, London Transport, 55 Broadway, Westminster, London S.W. 1.

London Underground – A Diagrammatic History, Douglas Rose, 1980, Published by Douglas Rose, 35 Summers Lane, North Finchley, London N12 0PE, ISBN 0 9507101 0 5.

A History of London Transport, T.C Barker and Michael Robbins, Volume I, The Nineteenth Century, George Allen and Unwin Ltd., London, 1975, ISBN 0 04 385066 9.