

100 YEARS OF THE HAMPSTEAD TUBE

by Antony Badsey-Ellis, author of “The Hampstead Tube”

**A report of the LURS meeting at All Souls Clubhouse on 11
September 2007**

Rather than making a selection from his recent book, our speaker presented material that did not make it to the final publication. This included pictures and drawings whose quality could not bear reproduction, although the content was of interest.

EARLY BEGINNINGS

The story started back in Parliament in 1892, when a scheme was presented to link Charing Cross, Euston and Hampstead by a tube railway, with stations at Oxford Street, Euston Road, Seymour Street, Chalk Farm and Belsize Park. Euston Station was on a spur branch that had been intended to continue to St. Pancras but objections from the Midland Railway, concerned over tunnelling beneath their new terminal building, resulted in its truncation. After two years in Parliament the scheme received Royal Assent in 1893. Charing Cross terminus was planned beneath the Strand, with a subway to the main line station to its west.

In 1898 a bill was submitted to eliminate a sharp curve by siting this station under Brewer Street, but investment funds for the line could not be raised. In 1899 a further bill routed the main line via Euston by curving sharply up Eversholt Street. A new branch from Kentish Town to Camden Town was proposed, with a station at the junction. An interchange station at Cranbourn Street was also shown, to link with the Brompton and Piccadilly Circus Railway extension. In 1901 Seymour Street station was removed due to its proximity to Camden Town, known for a time as Camden Mother Red Cap after the nearby public house.

In 1902 an extension of the new branch to north of Highgate Great Northern station was proposed, but Parliament cut this back to the Archway Tavern. It was around this time that Charles Tyson Yerkes and Harley Hugh Dalrymple-Hay took their famous Hansom-cab ride up to the edge of Hampstead Heath to view the Golders Green crossroads. Based on Yerkes' experience it was decided to locate the depot and power station there rather than in Hampstead Village. This avoided the 1 in 27 climb from Chalk Farm to Hampstead for which cable haulage was intended. Hampstead station could then be built much deeper, although a 1 in 60 climb remains.

Also in 1902 a new branch was proposed from north of Charing Cross providing interchange with the Metropolitan District Railway at Westminster Bridge station, a station at Artillery Row and a terminus outside Victoria main line station. This submission did not meet Parliamentary requirements and was soon dropped.

The Board of Trade was not keen on tunnel junctions for fear of a convergent collision, and so proposed a shuttle service to Highgate Archway – and so Camden Town station became a four-platform layout. However in 1903 it was decided that no collision was possible with the provision of catch points into spur tunnels. By 1906 the Board of Trade found these had been dropped from the plans, but agreed that signalling could be arranged to prevent two trains approaching at the same time. Later it was agreed that with the operation of short trains which could be signalled to a stand at the north end of southbound platforms, a safe overrun by trainstop operation would exist clear of the junction.

In 1903 changes, Tottenham Court Road station was included (now Goodge Street, since Oxford Street station became Tottenham Court Road in 1908). Also Seymour Street station reappeared, now known as Mornington Crescent. A new station was proposed at Castle Road; opened as South Kentish Town although the station tiling still carries the original name. This station was lightly used and closed in 1924 along with many others to conserve power during a strike at Lots Road power station, but was never reopened.

CONSTRUCTION

Running tunnels were constructed with a Price Rotary Excavator, although at the deepest point beneath Hampstead Heath the weight of clay above tended to crush the machine, and hand excavation was used.

Charing Cross ticket hall was planned under the mainline station forecourt, but permission could not be obtained to open the surface because of feared traffic disruption. It was therefore decided to tunnel up from the running tunnels, men excavating the lift shafts above their heads! However in December 1905, during work on the mainline station roof, a catastrophic failure of the structure killed three people. The station closed for 3½ months reconstruction, allowing the forecourt to be opened. In a period of two months one lift shaft was fully sunk and the other to half its depth. The ticket hall walls were piled and the area roofed, enabling the forecourt to be reinstated before the mainline station reopened.

A March 1907 photograph of the twin Golders Green tunnel mouths showed positive current rail in position, but no negative rail. Surprisingly there were numerous poles supporting an overhead current wire. Presumably this was used by electric locomotives on construction trains. The shunting neck tunnel mouth was not added here until 1923.

A 1907 picture of Leicester Square station showed no building above at that time, the frieze showing "Piccadilly & Hampstead Tubes". This station had a surface level booking hall leading to lifts which served an intermediate level landing between both lines, with stairs up to one and down to the other. Unusually there were two standard 23 feet diameter shafts, both with two lifts, and an 18 feet diameter shaft with a single lift, probably an after-thought to cope with revised traffic forecasts in a cramped location. Piccadilly Circus had been provided with eight lifts for a similar train service. The architect's drawing of the Cranbourn Street side of this station showed a rooftop building over the Leslie Green ox-blood tiled façade with seven arched bays. This was then modified so that the end bays were surmounted by pediment windows, one now being over the Northern Line office entrance and Wisden's tiled shield.

Hampstead Garden Suburb was part of an area of land purchased from Eton College and the Ecclesiastical Commissioners to provide the Hampstead Heath Extension. It was laid out by Dame Henrietta Barnet amongst trees and hedges, with housing on spacious grounds offering clean air and country living within easy reach of London. A plan showed the Golders Green tracks curving towards Finchley Road, with a siding running back to North End Road. It is unclear if this was a contractors line, or whether it was even actually built (but it seems highly unlikely). The proposed North End station site, later known as Bull and Bush, was a problem since no road existed in the area and its location kept changing as development plans were revised. Hampstead Heath Extension removed much of the traffic possibilities, and with complaints that day trippers might erode footpaths it was suggested that the station

be moved to the tunnel portals. This was close to the terminus, so the plans were dropped. Platform tunnels with stairs to the lower lift landings were already constructed, but no surface works were undertaken and in 1927 the land was sold.

A 1909 drawing of the original Charing Cross surface building, a staircase entrance, showed a proposed new sign advertising the Underground. Existing signage showed "Hampstead Tube to Euston, Hampstead, Highgate & Golders Green". In 1904 a power station at Elephant & Castle instead of, or in addition to, Golders Green was considered but with the London Electric Railways and the Underground Group linking their lines, Lots Road became the cheapest solution.

From opening the railway encouraged pleasure trips – a 1912 poster by Sidney Charles Thomas Weeks encouraged cultured persons to visit Hampstead homes of the famous, whilst a 1914 poster by Fred Taylor encouraged all to enjoy the Hampstead Fair.

CHARING CROSS LOOP

It was soon realised that the line stopped short of a traffic objective, and in 1909 it was proposed to construct a loop line to link with the District Railway and Bakerloo stations, also called Charing Cross (but now Embankment). The original powers to build a cable tunnel from the District Railway substation into the southern end of the Hampstead terminus platform tunnels were used. It was planned to build a single platform on the south-west side of Hungerford railway bridge and two sidings for defective trains, one under the Thames. However the new Metropole Hotel successfully objected, in fear for its foundations. The following year new plans were submitted with the loop on the northern side of the railway bridge. This was accepted by Parliament.

There were no overrun tunnels at the south end of the original terminus, so the agreed loop ran from platform end to platform end, curving out under Victoria Embankment Gardens. There was a single loop platform, which opened in 1914 as Embankment and is now the northbound Northern Line platform there. A long connecting tunnel connected this with the Bakerloo Line Charing Cross platforms, so avoiding the running tunnel being driven beneath the mainline station. As well as interchange, it was hoped that an improved service could be provided by the elimination of reversal time. Tunnel excavation was difficult in this wet area, and a tide gauge was fitted to a river pier to help adjust compressed air pressure in the new tunnel to compensate for the weight of water above; sufficient to keep water out, but insufficient to cause a tunnel 'blow-out'.

In 1915 the original Charing Cross platforms were renamed Strand, the former tube station of that name becoming Aldwych, enabling the new loop platform to take on the name Charing Cross to match the adjacent District Railway and Bakerloo Line stations.

ON TO EDGWARE

The Edgware & Hampstead Railway was authorised as an overhead trolley-car operation, but Yerkes gained control in 1902 and eliminated route duplication by amending it in 1905 to curve into Golders Green terminus from the north to provide cross-platform interchange. There was no money or will for the extension at that time but housing development encouraged by the Hampstead Tube obstructed the authorised route, resulting in a revised proposal in 1909 to extend the tube line further to the south, on the current alignment. Under this plan the western portals of

the Burroughs ridge tunnels were east of the Midland main line, requiring a bridge for the latter over the new cutting. In 1912 the route was modified again to continue the tunnels under the main-line, emerging to the west where it picked up the original Edgware & Hampstead Railway alignment. The parts of the tunnels under the Midland Railway were hand driven and surrounded by six-foot thickness of concrete to ensure stability of the main-line tracks above.

Even this new alignment was compromised by housing development. As the line climbs north it crosses Woodstock Avenue where the road was built up seven feet to an overbridge. This brings the road almost up to first floor level, with steep steps down to front doors. One semi-detached house was seen to have lost its matching half. The next road north is divided by the railway at road level, but remains Montpelier Rise on both sides. Here another semi-detached house still looks as if its other half was just removed. By Elmcroft Crescent the road is able to pass beneath the line in a long skew underbridge.

The line beyond Brent was planned on an embankment but 1912 amendments changed this to a viaduct, with a smaller land take. Construction of the Brent Viaduct, now the North Circular crossing, was seen with timber formers supporting the brick arch construction work. Approaching Hendon Central northbound twin colour-light home signals were seen standing side by side on two posts, one for the route to each platform over a scissors crossover, the line temporarily terminating here in 1923. These signals were used in preference to twin semaphore signals, although today one colour-light signal is used in such situations with a junction route indicator. The long closed Queens Road exit to Hendon Village could be seen on the station overbridge.

A photo of Edgware station soon after opening in 1924 showed the symmetrical Italianate style of building, the proportions of which were later spoilt by removal of one wing for the New Works Extension.

KENNINGTON EXTENSION

The official opening train was seen at Clapham South with Lord Ashfield and the Minister of Transport, Mr. Brabazon-Moore. This new standard stock train had travelled through from Golders Green by the Charing Cross branch and Kennington Extension. After examination of a City & South London train in the adjacent platform, the party continued by train to Morden Depot for the traditional celebratory reception.

Although the Charing Cross loop was abandoned, to be replaced by a new loop at Kennington, the original loop platform was retained to become the northbound platform. A temporary brick headwall was built at its southern end to protect the working railway from the work site. The old loop tunnel was filled with rough brickwork at this point, through which the tunnel from Kennington was driven to avoid a costly step-plate junction. Similarly, on the southbound a new line and platform tunnel were constructed from a work site in Embankment Gardens. The loop tunnel was sealed with a concrete plug and filling where this new line commenced. A temporary brick headwall was built at the southern end of the new platform to protect the railway from possible inundation from under-river tunnel works. South of the platform the new line drove through the loop tunnel at an acute angle. Iron tunnel linings were removed and a rough brickwork fill used through which the new tunnel was driven. The old loop tunnel between the new running lines was filled with concrete, but the majority remained open with a concrete plug at each end. This

was fortunate since it was breached by a German bomb in 1941 and flooded, the only under-Thames section of the Underground to suffer such fate.

By 1926 the link to Kennington enabled trains to run over the former City & South London Railway and on to Morden. Camden Town was also linked with the Euston terminus of that line, enabling trains from both northern branches to travel by either route to Kennington and beyond.

During the Charing Cross works all Highgate trains reversed in the southbound platform at Strand. However, Edgware trains crossed over a scissors crossing to the northbound platform at Strand, where a second driver joined the rear of the train before it continued to Charing Cross loop platform. This train then reversed with the second motorman taking it forward, the original driver alighting at Strand and walking the platform to join the rear of the next train from Edgware. By this means a 2-minute interval service was maintained.

NEW WORKS PROGRAMME

A 1941 line diagram showed that the Archway branch had already been linked to High Barnet and Mill Hill East. Temporarily ending at East Finchley in 1939, it reached High Barnet the following year, and Mill Hill East in 1941. An extension of the latter branch to link with Edgware and Bushey Heath was still anticipated, along with a link from the Northern City Line at Finsbury Park to Highgate and Alexandra Palace. An earlier map showed no names for the three stations in open country north of Edgware. Three other unnamed proposed stations were at Barnet Vale (beyond Totteridge), at Cophall (beyond Mill Hill East) and at Finchley Manor, (near the North Circular Road). The last two of these were also possible alternative depot sites to Bushey Heath.

It was originally planned to operate a shuttle service between Edgware and Bushey Heath. Morden trains would depart Edgware via Golders Green, travelling by either Charing Cross or Bank branches. However Kennington trains would depart Edgware via both Highgate and Golders Green branches to reach the Charing Cross branch. Some trains from Morden via Bank terminated at Euston island platform to reduce pressure on Camden Town junction, others continuing to Edgware or East Finchley only. Trains from High Barnet were to be routed to Kennington via Charing Cross and to Moorgate (Northern City) via Finsbury Park (High Level). Other trains from Moorgate would reach Alexandra Palace via Highgate, and others would continue to terminate in the Finsbury Park tube tunnel platforms.

These proposals had 28 trains an hour via Charing Cross and on the Morden branch, with 21 trains an hour on other tube tunnel sections. High Barnet received 14 trains an hour, as did the Finsbury Park to Highgate line, with only 7 to Alexandra Palace, on the Mill Hill branch, and to Bushey Heath. It was later decided to work the Mill Hill trains through to Bushey Heath instead of a shuttle, and even later the Edgware station layout was revised to allow trains from Golders Green to also reach the extension.

HIGHGATE HEADACHE

At Highgate a new station was required to link the existing platforms on the Finsbury Park to High Barnet branch with new deep level tube platforms, allowing for interchange between Alexandra Palace and Moorgate trains and those on the Camden Town and Charing Cross branches. The original station was in a deep

cutting with tunnel portals at each end, alongside a steeply climbing main road, and a solution was hard to come by.

Initially it was planned to link the old platforms to the new with a pair of escalators, with another pair up from the old platforms to the Archway Road. However these platforms were not wide enough for a pair of escalators, and the cramped site could not be widened. In 1935 a plan was drawn up for a ticket hall beneath the original platforms which were linked by stairs. Escalators would link the ticket hall with the deep platforms and also with the street.

This scheme was considered too expensive, so a third scheme was developed in 1936. This involved a ticket hall on a bridge over the cutting with escalators to Muswell Hill Road, escalators down to a subway under the old platforms and then another flight down to the new platforms. There was also the possibility of a Priory Gardens exit. With six escalators, this scheme was also too dear. Since the escalators from the ticket hall to the intermediate landing and those down to the deep platforms were aligned, it was suggested that they be constructed as a single flight. At the middle landing the handrails would be broken and the steps disappear under the floor to reappear in the next flight. To the public they would appear as separate machines, enabling passengers to leave and join at the midway point. Such an arrangement has not been used in London, but does occur overseas. However it did not offer the cost savings needed to save the scheme.

So plan four was a return to the second scheme. However, Charles Holden thought the upper escalator shaft 'unsightly'. Plan five was for a ticket hall beside the Woodman public house, where the current top escalator emerges. This was to be linked by lifts down to the deep level platforms. An intermediate landing would link with a subway under the original platforms. Limited space for the lifts within the cutting meant that they were unable to cope with anticipated traffic levels.

Plan six returned to the second scheme again, with a ticket hall beneath the old platforms, escalators up to the street and down to the new platforms, with stairs to the original platforms. However the scheme remained too expensive.

Plan seven involved a ticket hall on a bridge above the cutting with two pairs of lifts from the Archway Road, a little north of the current stairs to the car park. These lifts would drop 32 feet down to the ticket hall and another 97 feet down to the deep platforms, a total of 129 feet beneath the road. Stairs would link the ticket hall with the original platforms, together with a single reversible escalator linking the old and new platforms. This would fit in the platform width, operating down in the morning and up in the evening. The plan also provided for a second single escalator linking these points if required. An emergency spiral staircase would also link the new and old platforms.

The Ministry of Transport were concerned that operation of automatic lifts might not allow some passengers to alight at the ticket hall to purchase tickets against the flow of those boarding the lift for the trains. LT's response was to suggest that one lift would operate manually to assist such passengers and to check tickets. However Lord Ashfield vetoed the scheme on the basis that for years a guiding principal of station investment had been the removal of lifts from the Underground!

The eighth and final plan was a reversion to the second scheme yet again, with a ticket hall below the original platforms, escalators to the deep platforms and the street, and stairs up to the old platforms. The escalator box is unsightly, having been built to accommodate two escalators but only an ascending machine having been

installed, and that not until 1957. There were still three schemes to prevent unauthorised entry to the unsupervised top exit opposite the Woodman public house, and it was rebuilt over a period of four years.

LOWS & HIGHS

The talk ended with a review of some lows and highs of the past hundred years. The Hampstead Tube took on the title 'the Northern Line' in 1937 in anticipation of the New Works Programme developments. £2 million was spent before their abandonment after the Second World War, so the 1941 line diagram actually showed the final position. Green Belt legislation restricted housing development, and anticipated traffic levels could no longer be attained. The line from Mill Hill East to Edgware passed through an already developed area, but was not to be. A planned new depot was not required for the reduced system, which had survived six years on the cramped Golders Green site. A member of the audience reported that works were currently in progress to remove the remaining brick piers of Brockley Hill station viaduct, some sixty years later.

In the 1950s and 1960s passenger 'sit in' protests over trains being turned short at such places as Finchley Central and Tooting brought bad publicity. These had started in 1937 at Colindale, when passengers thought that by refusing to leave a train they would be taken onto Edgware. However the train continued into the siding with the protesters, who then viewed the following Edgware train pass on its way.

The Northern Line was given the 'Misery Line' tag during the Acton Works strike, which resulted in a shortage of compressors for 1938 Tube Stock. Many trains were cut from 7- to 6-cars.

Of course there have also been many high points in the history of the line, and amongst these are station refurbishments. Strand station reopened in 1979 after six years of closure to become part of the new Jubilee Line Charing Cross complex along with the former Trafalgar Square station of the Bakerloo Line. The previous Charing Cross interchange took on the name Embankment over a period of years in preparation for this. Belsize Park was renovated in the 1990s to resemble a spacecraft internally, whilst maintaining the traditional Leslie Green exterior. LU has since produced design guides on restoration principals. Many period features have been restored, including the Leslie Green renewed tiling at Golders Green, the only surface station in a tiled style, and the only staircases with a tiled colour pattern.

The Northern Line upgrade project of the mid-1990s, to follow the Central Line project, was delayed due to problems with the earlier scheme and is still far from complete. The first entire fleet renewal in 60 years was welcome, but Tube Lines continues work on a resignalling project. The planned auto-drive system has been tested alongside Highgate depot, where a new line signal control centre is also under construction.

John Hawkins