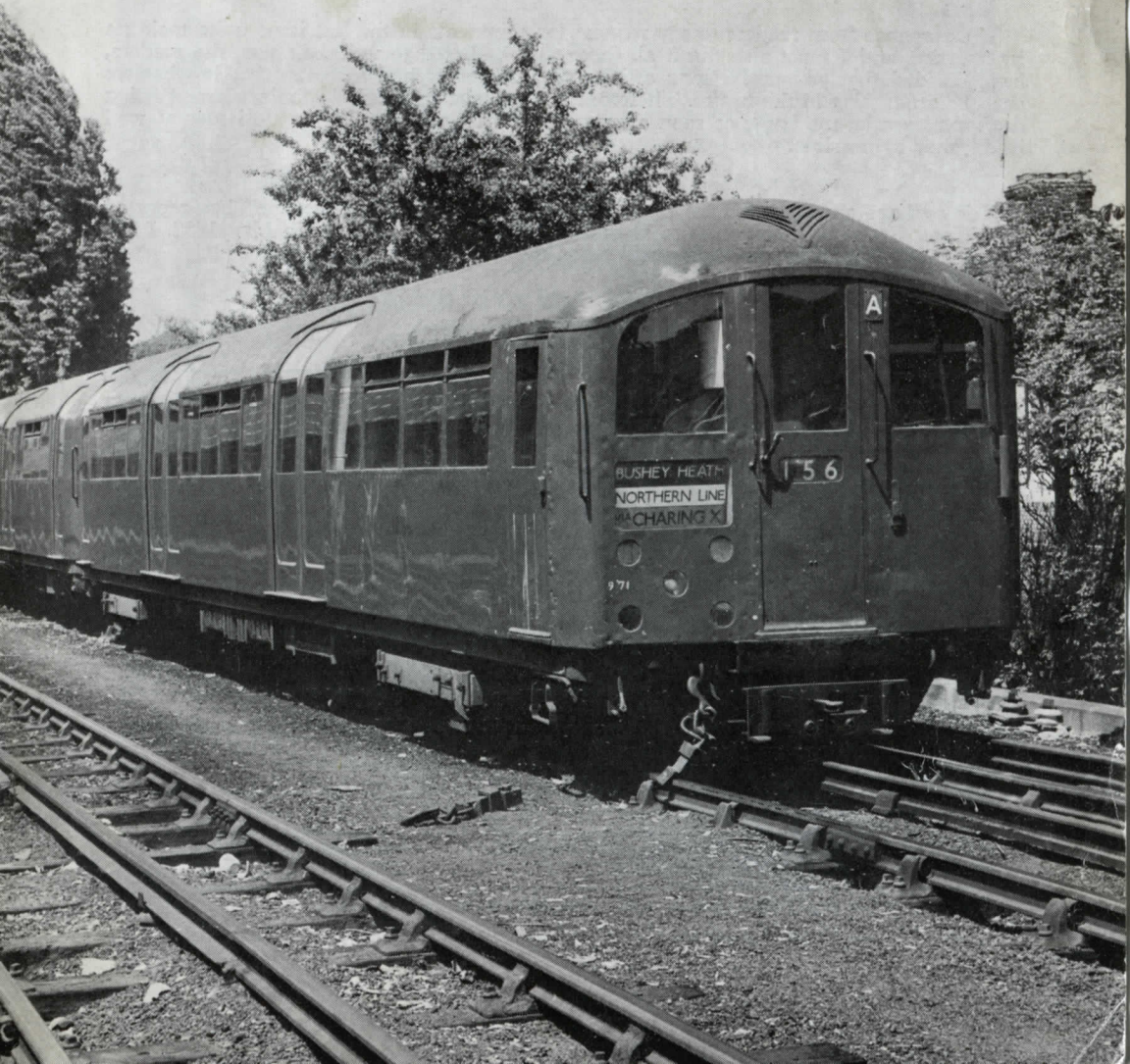


# UNDERGROUND

Number 9

## The Northern Line Extensions



# UNDERGROUND

It is perhaps fitting that in the Society's 20th anniversary year, Brian Hardy has written such an authoritative article on a subject that has never ceased to fascinate enthusiasts over the years: namely, the Northern Line extensions that were never completed.

Brian's article, as you may have noticed, is quite lengthy, and has been researched very thoroughly with the assistance of the people that he mentions at the end of the article. I know that the article took some considerable time to compile and eventually type out, and because Brian is the perfectionist that he is, the article has been completely re-typed at least once. I am sure that you will all agree that the effort was justified, and join with me in thanking Brian, and everybody that has helped with his article.

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The response from readers to my request for comments in the last issue quite took me by surprise, and I must also thank all those that bothered to write. As you, the readers, have decided that you prefer long articles on well-researched subjects, that is what we shall be attempting in the future. Therefore, if you have an article in the process of being drafted please let me know as soon as you can so that we can plan future issues as well in advance as possible.

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It is perhaps appropriate here to mention that the "Railway Magazine" has reported that Wood Green B.R. station is to be re-named "Alexandra Palace" in May 1982. After a gap of 28 years, Alexandra Palace will be on the railway maps again!

DAVID HAYWARD

Editor

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**Front cover:** This photograph of a 1938 tube stock train in Edgware depot in 1977 shows that they were fitted with destination plates for the aborted extensions and carried them on the Northern Line right up to their final withdrawal in April 1978. [B. R. Hardy]

**Back cover:** One of the many signs incorporating the Northern Line extensions that were actually fixed in position before the extensions opened; this one was located at the foot of the stairs leading up to the southbound platforms at East Finchley — with the relevant parts papered over — probably up to about 1969, when Victoria Line interchanges required them to be replaced. This one is now privately preserved. [B. R. Hardy]

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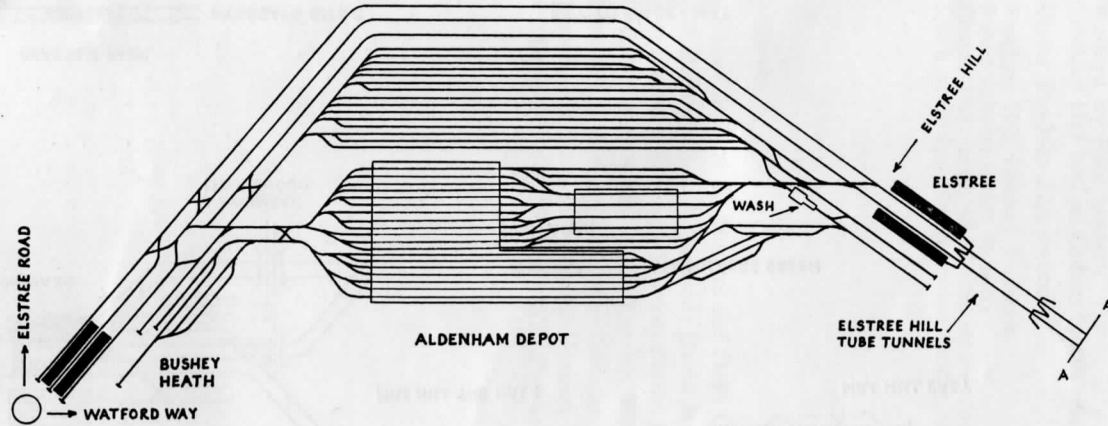
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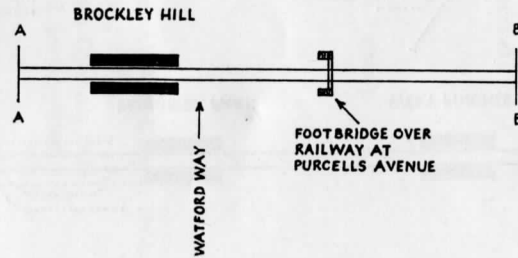
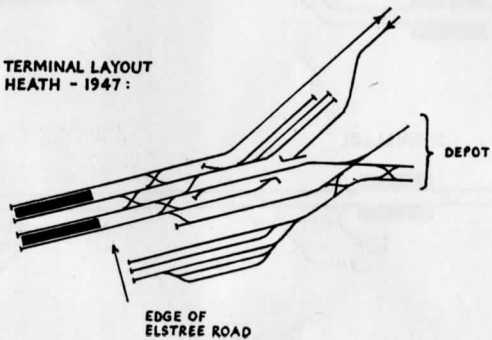
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**NORTHERN LINE EXTENSIONS — SCHEMATIC TRACK PLANS  
 BUSHEY HEATH & ALEXANDRA PALACE TO DRAYTON PARK  
 AS PLANNED : 1938**

Fig. 1



**REVISED TERMINAL LAYOUT  
 BUSHEY HEATH - 1947:**



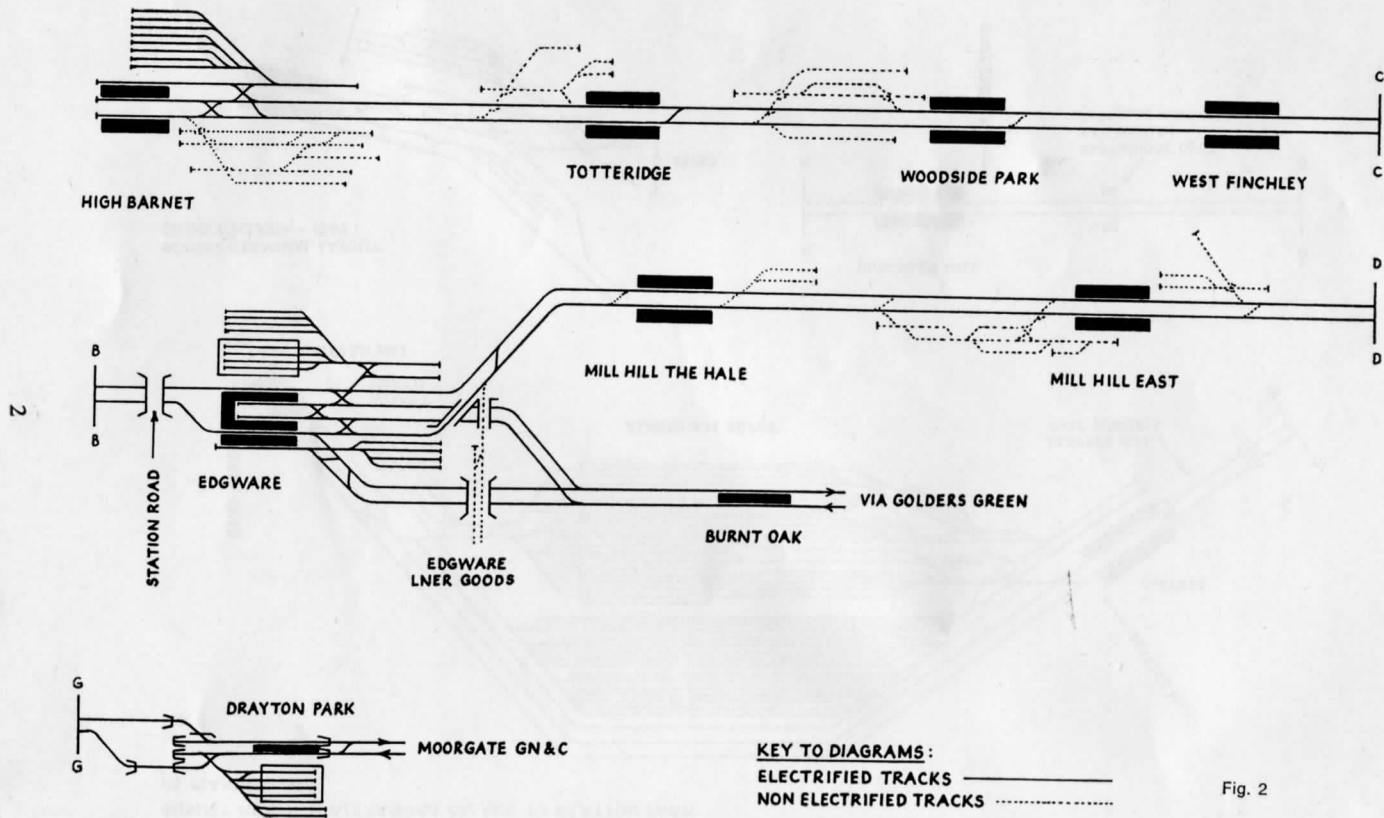
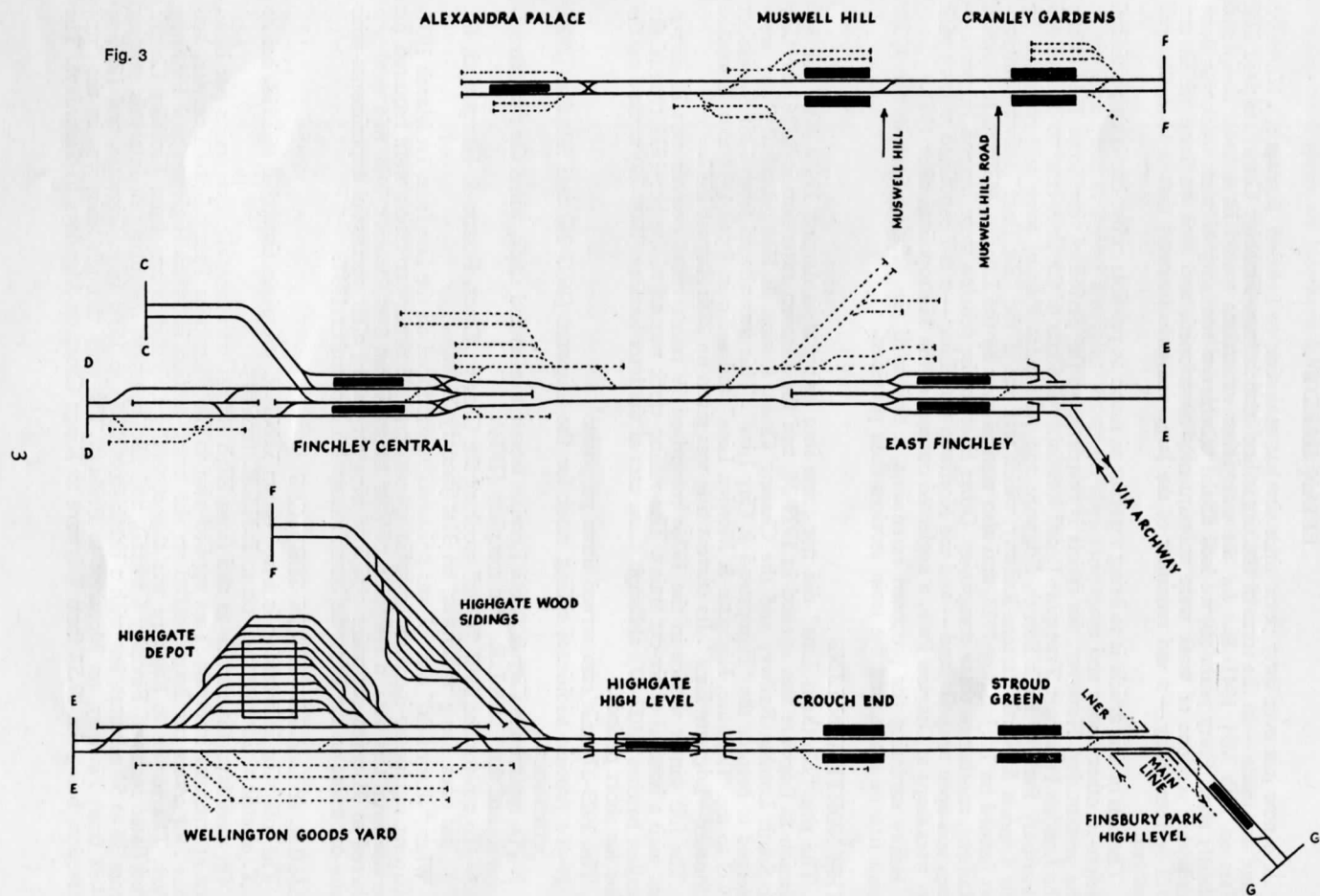


Fig. 2



Fig. 3



# THE NORTHERN LINE EXTENSIONS

BRIAN HARDY

It is now just over forty years since the last extension to London Transport's Northern Line was made — in the form of the single line branch from Finchley Central to Mill Hill East on 18th May 1941. But for the war, other extensions would have been completed shortly after. Forty years on, we look at the schemes, a summary of what work was done and what sections of work were subsequently abandoned, and look at those which can still be seen today — a sad reminder of the large amount of money that was, in the end, wasted.

The aim of this article is to bring together as much as possible, what has been published before in other books and magazines over the years, to give a complete story right up to the present day. However, the article is restricted to the period of time from 1933, when the London Passenger Transport Board was formed. Some of the lines later to be involved (Finsbury Park to High Barnet, Edgware and Alexandra Palace) were still managed by the London & North Eastern Railway, which was one of the "Big Four" railway companies formed on 1st January 1923, and also worked over by the London Midland & Scottish Railway, another of those companies. Other lines in the scheme were beyond Edgware — then still open unspoilt land — and the Northern City Line — a self contained railway with its workshops at Drayton Park, a neglected outpost of the Metropolitan after 1913.

Before exploring the proposed extensions, a review of the existing lines in the 1930s must first be made, and the train services then provided.

## THE NORTHERN LINE

The title "Northern Line" did not come into being until August 1937. After the extension to Edgware was opened in 1923-24, and the Morden extension in 1926, the City & South London Railway and the Charing Cross, Euston & Hampstead Railway were merged to become the "Hampstead & City Line". This was altered from 12th November 1933 to the "Edgware, Highgate & Morden Line" and again in April 1934 to a shortened "Morden—Edgware Line". Its current title was given on 28th August 1937.

The full winter service in the 1930s comprised 99 trains, mostly seven cars in length, but with a handful of six-car trains. The rolling stock was all of the pre-1938 type of the earliest batches (1923-27), although some cars of the later batches (1928-29) worked on the line for short periods.

The 1923-27 built cars served three purposes:

- 1—To provide additional rolling stock for the Edgware (1923-24) and Morden (1926) extensions.
- 2—To replace the City & South London locomotive-hauled stock, when the reconstruction of the C.&S.L.R. was complete (1924).
- 3—To replace the 1907 "Gate" stock of the Charing Cross, Euston & Hampstead, the last ones being withdrawn on 31st January 1929.

When "shunt field" control was universally introduced on the line from 1st March 1937, allowing significant increases in train speeds, only 95 seven-car trains were required for service from this date, a reduction of four trains. From 31st October 1938 this total was altered to 91 seven-car trains and four nine-car trains, after successful experiments with nine-car trains on the Edgware branch from 8th November 1937.

## L.N.E.R. & L.M.S.R. TRAIN SERVICES

The following information is based on an L.N.E.R. suburban timetable of 1938, before L.T. electric trains ventured on to L.N.E.R. territory.

On weekdays, the service to and from High Barnet was generally two trains per hour, but at irregular intervals. This applied also to the Alexandra Palace branch service, and thus four trains per hour worked on the trunk section between Highgate and Finsbury Park. The service to Edgware was almost totally a shuttle to and from Finchley Church End (later renamed Finchley Central), and also operated irregularly at intervals ranging from 30 to 50 minutes, but with a break from 13.34 to 15.01 from Edgware, and 12.55 to 14.38 from Finchley, on Mondays to Fridays. The only through train was in the "up" direction, being the 07.52 from Edgware to Kings Cross on Mondays to Saturdays. The

peak service to and from High Barnet was about every 6-10 minutes, with seven departures between 08.00 and 09.00 on Mondays to Saturdays, and six arrivals between 18.00 and 19.00 on Mondays to Fridays. The return peak workings on Saturdays were during the midday period. There were six departures from Alexandra Palace between 08.00 and 09.00 on Mondays to Saturdays and six arrivals between 17.30 and 18.30 on Mondays to Fridays. This number of trains gives some idea of the intensity of the peak steam train service then provided; on the common section between Highgate and Finsbury Park, as many as twelve trains per hour were scheduled. At all times of the day, some trains started and terminated at Finsbury Park, while others went on to Kings Cross (daily), Broad Street and Moorgate (Monday to Saturday peaks). In the off-peak periods, all trains stopped at all stations, except for a minority of High Barnet trains which omitted West Finchley. During the peaks, however, there was a certain amount of non-stopping: while no standard pattern was adopted, the stations missed included Stroud Green, Crouch End and Highgate ("down" trains), and in the morning, the same three stations, plus East Finchley. Beyond Finsbury Park there was a choice of three London termini: Kings Cross (daily), Broad Street and Moorgate. These last two were peak hours only, but arrivals at Moorgate were as late as 10.36, whilst the last evening L.M.S.R. departure from Broad Street was at 20.12, and the last L.N.E.R. from Moorgate at 19.32. This gives some idea of the extensiveness of the peak service of those days — long before commuter traffic was challenged by the private car. Again, there were no standard operating patterns, and both the High Barnet and Alexandra Palace branches served all three London termini, although somewhat erratically.

On Sundays, a regular interval service was provided every 30 minutes between Kings Cross and High Barnet, with a 30-minute shuttle service between Finchley and Edgware. There was no service to Alexandra Palace on Sundays, and there had not been since the 1920s. Thus the service on the trunk section between Highgate and Finsbury Park was also every 30 minutes.

#### THE 1935-40 NEW WORKS PROGRAMME

The 1935-40 New Works Programme complete, comprised nine schemes lettered from "A" to "I", estimated to cost, at pre-war prices, £44,777,000. The North London scheme was known as scheme "C". Broadly, scheme "C" proposals were:

- 1—To extend the Northern Line from Archway (then known as Highgate [Archway]) in tube tunnels to south of East Finchley, and then on the surface on existing L.N.E.R. tracks from East Finchley to High Barnet.
- 2—The L.N.E.R. single line between Finchley Church End and Edgware to be doubled, electrified and diverted into the L.T. station at Edgware.
- 3—Continuing on from Edgware L.T. station, a new line to be built to Bushey Heath, with a new rolling stock depot at Aldenham. Edgware L.T. station would be rebuilt with six platform faces to accommodate through and terminating trains.
- 4—To convert the Northern City Line from Moorgate to Finsbury Park to L.T. standard 3rd/4th rail, with a branch from Drayton Park to Finsbury Park L.N.E.R. station, through new platforms, and then via existing L.N.E.R. tracks to Alexandra Palace and East Finchley.

The cost of the New Works for scheme "C" was to be shared between the L.N.E.R. and L.P.T.B., as follows:

##### L.N.E.R.

Electrification of the L.N.E.R. from Finsbury Park to High Barnet and Alexandra Palace. Doubling of the line electrification from Finchley to Edgware.

This work to include signalling and refurbishing of stations, but to exclude rolling stock, and Edgware station.

To construct a connecting line from the Northern City at Drayton Park to new platforms adjacent to Finsbury Park L.N.E.R. station.

##### L.P.T.B.

Modernisation of the Northern City Line: this work to include converting the unique G.N.&C. current rail arrangements to L.T. standard 3rd/4th rail, and converting the signalling to L.T. standard. The platforms to be altered to tube train height.

A new extension from Edgware to Bushey Heath, with a new rolling stock depot at Aldenham.

Improvements to the substation at Camden Town.

## JOINT L.N.E.R./L.P.T.B.

Extension of the (now) Northern Line from Highgate (Archway) to East Finchley, with a new station at Highgate, beneath the L.N.E.R. station, to give interchange with the L.N.E.R. Alexandra Palace branch, and later, the L.P.T.B. Alexandra Palace branch. New tracks and sidings at Edgware, and a new station at Edgware.

Rolling stock for all sections, except for the Finsbury Park—Moorgate branch, which would have rolling stock from the existing fleet, and would become self-contained.

The total cost of the whole of scheme "C" was estimated to be (at pre-war prices) £6,731,000, of which £2,093,000 was the L.N.E.R.'s share, and £4,638,000 the L.P.T.B.'s share.

The above scheme would add 20 more route miles to the Northern Line, making a total of 52 miles in all.

### WORK COMMENCES

Work first began on the new extensions in November 1936, when tunnelling commenced between Highgate (Archway) and East Finchley. At the latter, the tunnels would rise to the surface 1,100 feet south of the station on either side of the L.N.E.R. tracks, and then proceed into a new four platform station comprising two islands. Between Highgate (Archway) and East Finchley, there were four working sites, and construction of the tunnels was done by Charles Brand & Son Ltd.

The contract for the doubling of the track and electrification between Finchley and Edgware was placed at the end of 1937. Work on the new L.T. station at Edgware began on a limited scale in October, but commencing in earnest in the latter half of 1938. It was proposed that trains from the Golders Green route would terminate in a two-track bay, while Bushey Heath trains, which would run via Finchley, would use the outer platforms of the bays, providing a certain amount of cross-platform interchange. Beyond Edgware, work towards Bushey Heath started in mid-1939. The route to Bushey Heath was over part of the proposed Watford & Edgware Railway which had been authorised as far back as 1903, and over which much land had been purchased and thus kept clear of the house building which had taken place in the area after 1924.

The first stage of the adaptation of the Northern City Line into the scheme was completed in May 1939, when from 15.00 on Saturday 13th May until the beginning of traffic on Monday 15th May, the unique G.N.&C. current rail system was replaced by the L.T. standard 3rd/4th rail system. The negative current rails had been installed in the centre position some time prior to the changeover, but during this particular weekend, the outside position current rails were removed and replaced by L.T. current rail in the normal positive position. At the same time, the remaining cars of ex-G.N.&C. stock (of 1904-06 origin) were transferred to Neasden for eventual scrapping at Chesterfield, and were replaced by spare cars of pre-1938 tube stock. These cars became available after sufficient new 1938 tube stock had entered service on the Northern Line. The tube cars allocated to the Northern City Line were generally 1927 M.C.W. (driving motor cars), 1923 Cammell Laird (trailers) and 1925 M.C.W. (control trailers). This generally held good until the early 1960s, but there was often the odd exception to the rule. The old G.N.&C. cars were removed from the line as follows:

- 1 4-car train from Drayton Park 9.5.1939.
- 1 5-car train from Drayton Park 10.5.1939.
- 1 5-car train from Drayton Park 11.5.1939.
- 1 5-car train from Drayton Park 12.5.1939.
- 6 5-car trains from Drayton Park 13.5.1939.

The trains of pre-1938 tube stock were transferred in as follows:

- 2 5-car trains direct from Neasden to Drayton Park 12.5.1939.
- 8 5-car trains from Ferme Park (near Finsbury Park L.N.E.R.) to Drayton Park on 14.5.1939. These eight trains had been brought to Ferme Park individually during the previous week, and stored.

### THE BARNET LINE

Progress on all sections of the extensions was advanced to the extent that it was estimated that all work would be completed in 1940, with some sections opening in earlier



stages. London Transport announced in a staff letter dated 26th April 1938 the following opening dates:

Highgate (Archway) — East Finchley: June 1939.  
East Finchley — High Barnet: December 1939.  
Drayton Park — Alexandra Palace: September 1940.  
Edgware — Bushey Heath: December 1940.

The first stage to open was between Highgate (Archway) and East Finchley, a distance of 2.11 miles. Highgate (Archway) was renamed Archway (Highgate) from 11th June 1939 to avoid having two differently sited stations with the same name. Trial running took place from Monday 19th June 1939 and the electrification also included the two L.N.E.R. tracks at East Finchley as far as Park Junction, six tracks on the west side of the line for stabling L.T. trains (Highgate depot, formerly known as Wellington sidings), and four new stabling sidings for L.T. trains in the junction of the Finchley and Alexandra Palace lines, known as Highgate Wood sidings. A new substation was commissioned at Highgate for this first stage of the extensions.

Track alterations at Archway saw the southbound siding become the centre reversing siding, with the northbound siding being utilised as the new northbound line to East Finchley. The southbound line from East Finchley was new all the way to Archway, and approaching the latter was on a 1 in 50 down gradient on a 15-chain curve. To control the speed of southbound trains, the signals were approach controlled, clearing only at 40mph (A507) and then 30mph (NN14/15A). (See Fig. 4.)

Facilities at East Finchley included a new 35-lever signal box, and two sidings were provided north of the station for reversing L.T. trains. The two outside platforms were electrified for L.T. trains and the two centre tracks were intended for the L.N.E.R. steam trains until the rest of the scheme was completed. However, the two centre platforms were not ready in time and the steam service to and from High Barnet thus shared the two outer platforms with the L.T. trains. To prevent "up" steam trains possibly entering the tube tunnel south of East Finchley, an electric train treadle was provided in the southbound platform there; the "normal" position of the points just south of the station was for the L.N.E.R. line, and only the operation of the treadle by an electric train could allow these points to be set for the southbound Northern Line. (See Fig. 5.)

A gauging trip with a four-car train of new 1938 tube stock took place during the mid-day period on Sunday 2nd July 1939, on both lines between Archway and East Finchley. The extension opened to the public on Monday 3rd July 1939, with most of the trains previously reversing at Archway extended to East Finchley. The intermediate station at Highgate (beneath the L.N.E.R. station, and between which interchange would take place) was not complete and did not open for some time to come. A new working time-table (No. 159) was introduced for the new extension. All Northern Line trains to and from East Finchley were scheduled to run via Charing Cross. The as-yet incomplete Highgate tube station was being constructed to take nine-car trains.

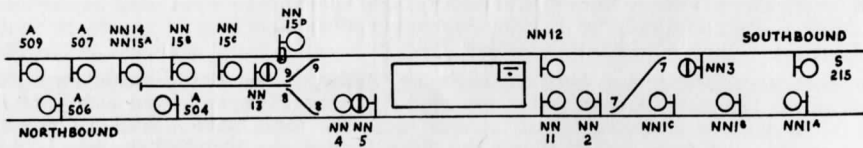
A new L.T. signal box was opened at Park Junction on Sunday 30th July 1939, and the old L.N.E.R. signal box was closed. The new signal box took over the control of the steam line junction to Alexandra Palace in anticipation of the electrification of that line. There were 83 levers provided — not all levers were in use immediately, and indeed, circumstances have since dictated that some of them have never been used.

The L.N.E.R. carriage shed at Wellington sidings was adapted and electrified for L.T. trains, and became known as Highgate depot. Access was provided in both the north and south ends, although structural work had to be carried out at the north end, as in L.N.E.R. days, this was a solid brick wall. Additional stabling sidings were constructed in the "V" junction at Park Junction, and these were known as Highgate Wood sidings. This was only the first stages of the development of the depot and sidings; the diagram on page 3 shows how it would have looked if all the works had been completed (fig. 3).

The new substation at East Finchley was commissioned from Sunday 15th October 1939, and superseded temporary arrangements whereby Highgate depot was fed from the southbound line between East Finchley and Park Junction.

The war was now in progress, but as bombing had not started and the works on the rest of the line to High Barnet were well advanced, it was decided to complete it sufficiently to allow a tube train service to operate to that terminus in 1940. This involved

**ARCHWAY: FROM 2 JULY 1939**



NOTE:

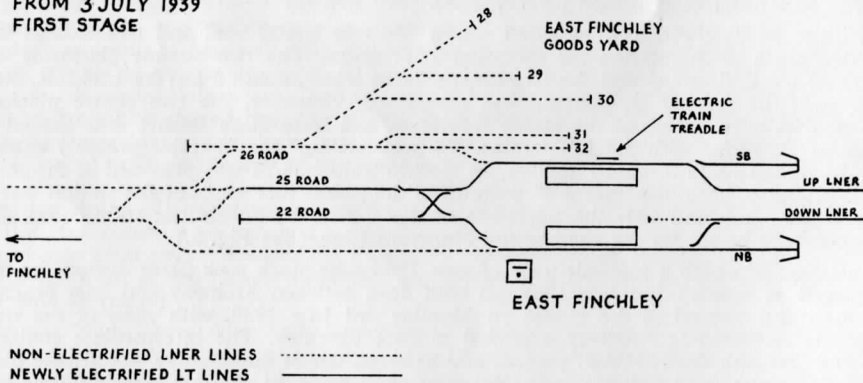
Signals NN3 and NN5, shown here as disc shunt signals, were in fact colour-light shunt signals until 17 June 1955.

No.7 crossover, and signals NN3, NN11 were removed from 27 August 1967.

Fig. 4

**EAST FINCHLEY :**

**FROM 3 JULY 1939  
FIRST STAGE**



NON-ELECTRIFIED LNER LINES .....  
NEWLY ELECTRIFIED LT LINES ———

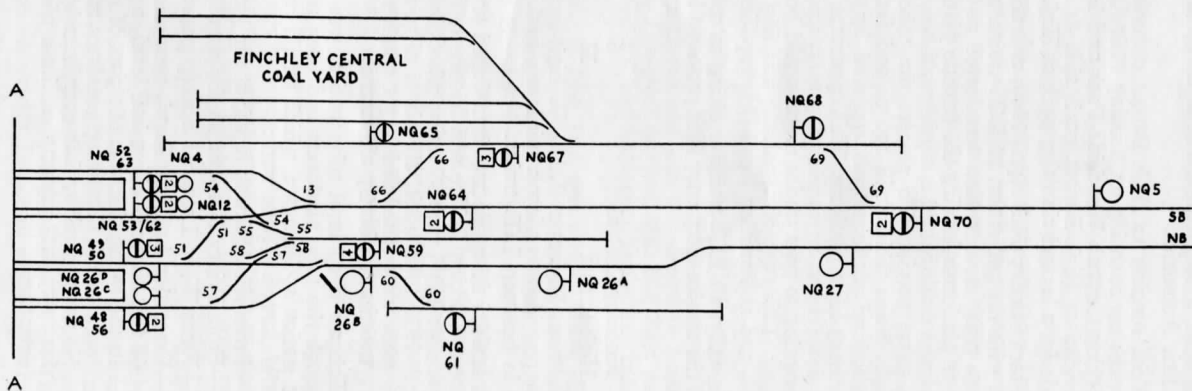
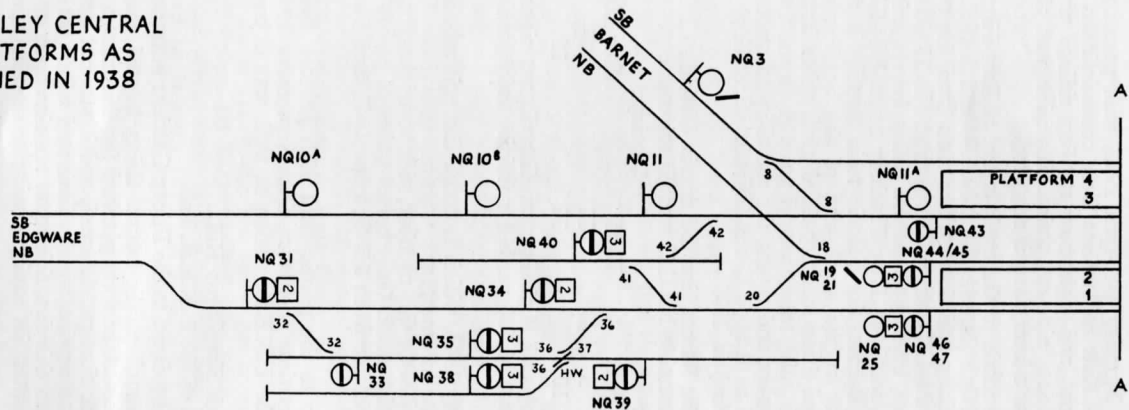
Fig. 5

new signal boxes at Finchley Central (to which Finchley Church End had been renamed on 1st April 1940), having 71 levers (49 working levers, 15 spare, and 9 reserved for the final stage which, in the end, was never completed), and High Barnet with 35 levers (28 working levers and 7 spare levers). At Woodside Park, the old L.N.E.R. signal box was adapted by L.T. to control the goods yard, while at Totteridge the goods yard was controlled by a 14-lever ground frame in the yard itself. A new electrified crossover, south of the station, was controlled by a two-lever ground frame adjacent to the crossover, an arrangement which still exists today.

No substantial alterations were made to the existing L.N.E.R. stations, except for East Finchley, which was rebuilt. High Barnet, Finchley Central and East Finchley stations were able to accommodate nine-car trains from the start. It was also proposed that West Finchley, Woodside Park and Totteridge stations would also be able to take nine-car trains, but lengthening was deferred because of the war. However, the new L.T. signals at these stations were positioned a certain distance away from the platform ramps at some ends, in anticipation of this work being carried out at a later date. To this day, this can be observed at Totteridge (north end of northbound, where the starting signal is 122ft from the end of the platform), Woodside Park (proposed lengthening of 110ft at the south end of both platforms), and West Finchley (45ft both platforms, both ends). It was also proposed that Finchley Central station would be completely rebuilt as a four-platform station, but this was deferred and it remains basically in its 1940 three-platform state today. (See Fig. 6.)

FINCHLEY CENTRAL  
4- PLATFORMS AS  
PLANNED IN 1938

Fig. 6



The "new" East Finchley station was designed by Adams, Holden and Pearson. Access to the platforms was via stairs and subway below track level, while staff accommodation buildings were constructed above the tracks at the south end. By the northern bridge abutment, a 10ft high statue of an archer was erected. Facing London, this was designed by Eric Aumonier.

Trial running to High Barnet commenced on Monday 1st April 1940, with passenger services commencing on Sunday 14th April 1940. New substations were commissioned at Finchley Central, Woodside Park and High Barnet, and eight new stabling sidings were provided at High Barnet, each able to accommodate nine-car trains. Provision was also made for a second shunting neck at High Barnet at a later date, if required.

From Sunday 14th April 1940, alterations were made to the track layout at East Finchley, with the projection of L.T. trains north to High Barnet. All L.N.E.R. and L.M.S.R. steam train services thus terminated at East Finchley and these trains then used the two centre platforms, leaving the outside platforms to the L.T. trains. The former No. 25 siding road was made into the southbound Northern Line, leaving the centre siding for reversing the steam service. To protect the tube tunnels south of East Finchley from L.N.E.R. freight trains which still ran to and from High Barnet, the electric train treadle in the southbound platform was replaced by a detector at the north end of the southbound Northern Line platform. This apparatus comprised three mercury-filled glass tubes hanging down from an overhead gantry, under which tube trains would pass. A steam train attempting to pass under these would break the tubes and return the signal in advance to danger. This type of apparatus was first installed at Barons Court (District/Piccadilly) in 1932, and at Finchley Road (Metropolitan/Bakerloo) in 1939.

Initially, all L.T. trains working to and from the Barnet line did so via Charing Cross, and the service frequency first provided in new timetable No. 162 was (in minutes):

	Weekdays		Sundays	
	Off-peak	Peak	Until 20.00	After 20.00
Finchley Central	6	5	10	7½
High Barnet	12	10	20	15

Between Highgate (L.N.E.R. high-level station) and High Barnet, disc distant signals were provided to allow a minimum braking distance of 500 yards for freight trains, which ran in between L.T. trains.

A revised timetable was introduced on 19th May 1941, which restored through running between London Bridge and Moorgate (closed due to emergency wartime work from 7th September 1939) with 99 trains scheduled for service. Of this number, nine were composed of pre-1938 tube stock, all others of new 1938 tube stock. Only seven trains of pre-1938 tube stock were scheduled in yet another new timetable from 6th October 1941, and these were withdrawn shortly afterwards.

Highgate deep level tube station was not open to the public until 19th January 1941, although the tube platforms had been used by wartime shelterers since September 1940. The station at Highgate, which would combine the L.N.E.R. station as well, was to have four entrances. These were:

- 1—From the Archway Road, at the junction with Shepherds Hill.
- 2—From Priory Gardens on the north-east side of the L.N.E.R. line.
- 3—From Wood Lane, via a steep pathway leading down to the Priory Gardens entrance.
- 4—From the Archway Road, near the "Woodman" public house. Being located some 60 feet above booking hall level, a pair of escalators were planned for this entrance. In the event, this was one part of the scheme that got deferred, and it was not until August 1957 that an up escalator was put into service, which eliminated a long walk. No down escalator has ever been built, and to this day, this route remains open only for "way out" passengers, those wishing to enter the station having to use the other entrances.

#### THE MILL HILL BRANCH

As stated previously, all work was scheduled for completion during 1940, but in November 1939 it was decided to suspend most of the works because of the war, except for the High Barnet branch, which was so nearly ready. However, in June 1940 it was decided



that one track from Finchley Central to Mill Hill East should be electrified, because of the wartime requirements of Mill Hill barracks. Trial running commenced on Friday 16th May 1941 and public services started on Sunday 18th May 1941. On Mondays to Saturdays up to 19.00, trains ran through via Charing Cross to and from Mill Hill East, but after 19.00 a two-train two-car shuttle service operated between Finchley Central and Mill Hill East. This comprised two trains of pre-1938 tube stock and these lasted until 17th May 1942. Thereafter, 1938 tube stock took over the shuttle service. This new arrangement involved uncoupling a train of 1938 tube stock in Highgate depot (to form one three-car and one four-car) and then running the two units to Finchley Central to take up their workings. (This arrangement lasted on Sundays, right up to October 1967.) The single electrified line to Mill Hill East terminated in the "up" wooden platform.

No significant alterations were made to the existing station buildings. Access to the single line was from Finchley Central and L.T. trains worked on the "one engine in steam" principle. L.N.E.R. goods trains to and from Edgware worked on the train staff system. The train staff was initially kept in the ticket office at Mill Hill East, but was later to be kept in the signal box at Finchley Central, after the Mill Hill East ticket office had been found closed on one occasion when the staff was wanted.

### THE DEFERRED WORKS

On the Northern City Line, it was proposed that the Alexandra Palace service would diverge at Drayton Park and run on either side of the existing G.N.&C. tunnel mouths, and run via new tube-gauge tunnels and ramps up to Finsbury Park L.N.E.R. station, where a new island platform for the tube trains would be built on the east side of the L.N.E.R. station. The route to the original G.N.&C. deep-level terminus at Finsbury Park was to be retained for a peak-hour only shuttle service to and from Moorgate. The new tunnel and ramp (1 in 50) on the southbound line was completed and the northbound (1 in 45) almost completed. The southbound ramp later was connected to the L.N.E.R. at Highbury Vale and used for rolling stock transfers to and from the Northern City Line. The northbound ramp was not finished at the Drayton Park end and no sign of this work was visible from the platform. The unseen northbound tunnel and ramp remained incomplete until the electrification of the Northern City Line by B.R. (E.R.) in 1976, when the proper use of both ramps and tunnels was implemented, some 37 years after they were first built.

Above the G.N.&C. tunnel mouths, a new L.T. signal box was built and first came into use from 12th March 1939, when the old signal box at Finsbury Park closed, and control of signalling there was transferred to a new switch panel in the new signal box. This was transferred to the main panel in the new cabin with effect from 7th December 1941. The signalling at Drayton Park continued to be controlled from the old G.N.&C. signal box there. After abandonment of the schemes affecting Drayton Park, which thus decided the final layout there, the signalling at Drayton Park was transferred to the new box from 15th March 1953.

From Drayton Park, the line would climb in a cutting and then on an embankment into Finsbury Park L.N.E.R. station, beneath which a new booking hall was to be built. To accommodate the L.T. trains at the high-level station at Finsbury Park, across the Seven Sisters Road and the Stroud Green Road, a new bridge structure was required. At the time of the suspension of the work, the bridgework itself had been delivered to the site, while work on the bridge abutments was almost complete. The girder work for the new tube platforms was also ready in position. The bridgework was removed during the war to replace bomb-damaged bridges at other locations. A new station entrance was planned, and in preparation for this, a temporary entrance was built. This "temporary" entrance to Finsbury Park station in Station Place remains to this day.

North of Finsbury Park, the new lines would pass over the L.N.E.R. main line on a flyover modified to take two through tracks. Although the bridge already had two tracks, one was the up line but the other a siding. There would be a connection to the up and down L.N.E.R. lines for the working of freight trains. Standard L.T. cabling structures were completed all the way to Alexandra Palace and much new current rail had been installed. Highgate L.N.E.R. station, with twin tunnels at both ends, was to become an interchange station with the new tube platforms below, and reconstruction of the high level station commenced in March 1940 with this in mind.

New substations were constructed and equipped at Crouch Hill, south of Crouch End station, and also at Muswell Hill station. Few alterations were to be made at Stroud Green station, but at Crouch End, the platforms had been rebuilt to L.T. style at "compromise" tube/surface stock height. Work had also commenced on the signal boxes at Alexandra Palace and Cranley Gardens.

Between Finchley Central and Edgware much work connected with the electrification had also been completed. The doubling of the line had been completed as far as Mill Hill (The Hale), and at this station, the second platform was partly completed to L.T. style. A new footbridge was to be built to connect with the adjacent L.M.S. station of Mill Hill Broadway. As on the Alexandra Palace line, trackside cabling was completed between Finchley and Edgware and new substations at Page Street (Mill Hill, roughly half-way between East and The Hale stations) and Edgware were built and equipped, the latter being operative from July 1941. At Edgware, the station site had been widened by re-siting the L.T. bus garage, and there was a new retaining wall on the western side. Construction of the additional platforms was well advanced. A new signal box on the west side of the station was also built, but not commissioned. The track work involved with the re-arrangement of the line via Golders Green was almost complete, as was the flyover for the northbound line from Mill Hill. The L.E.R. street-level building of 1924 had been partly demolished to make way for the extension under the main road. The line was to pass under Station Road, where the shops and flats above had been built on a raft in 1925-26, making easy provision for tunnelling under at a later date, and then at a 1 in 59 up gradient to Brockley Hill. On the way, the line would cross Purcells Avenue, which would be closed to traffic, and a footbridge erected for public access across the severed section. This had already been approved by the local council. At Brockley Hill the line was to pass over the A41 road on a viaduct. The station itself would be located on the viaduct on the north side of the road. The viaduct was to be of brick-arch construction and the station would be level. From Brockley Hill to Elstree, the line would continue on a 1 in 53 up gradient all the way. This included the 1,575ft long twin tube tunnels leading under Elstree Hill into Elstree station, which was to be built on the south side of the Elstree Hill Road, located in a deep cutting crossed by a new two-span brick arch bridge. Stairs from the ticket hall at surface level would lead to the platforms beneath. The station entrance would incorporate a draw-in for buses, and a car park on the south-east side of the station was proposed. Beyond Elstree, the line would skirt the Aldenham reservoir on a gentle down gradient of 1 in 733 to just before Bushey Heath station, from where it would be level to the end of the station. Bushey Heath station was to be located at the junction of the Watford By Pass and the Elstree Road. Between Elstree and Bushey Heath, on the west side of the line, a new maintenance depot was to be built, which would have become the main depot for the Northern Line, in place of Golders Green, part of which would be retained as stabling sidings. The Bushey Heath extension was not so far advanced as the other parts of the scheme, as work did not start until June 1939. However, most of the route had been fenced, levelled and partly drained, but no work had been done on cabling, station platforms, track work or signalling. At Brockley Hill, some of the brick arches of the viaduct were completed.

A public subway, some 700 feet north of Brockley Hill station site, was partly constructed and remains in this condition to this day. Construction of the tube tunnels under Elstree Hill had been started at the south end only but was not very far advanced; the northbound tunnel was driven for about 160 feet (106 rings), the southbound about 70 feet (40 rings). The tunnels were to be constructed throughout of cast-iron, some of the segments being obtained from the Central and Bakerloo running tunnels, where their stations had been lengthened.

Hardly any work had been done between Elstree and Bushey Heath, apart for a partly completed substation building at the former. Work had forged ahead, however, on Aldenham depot, the main buildings of which were completed and equipped with overhead lifting cranes — all without track work. Progress with this building was advanced so that it could be put to use as an aircraft factory during the war, which, by this time, was very imminent, and this indeed happened.

Had the war been delayed by a year or so, the extensions would have been completed, or so nearly so, that it would not have been possible to defer them. If this had been the case, there would probably not be this article today, for the lines which are being surveyed

would be part of the complex Northern Line, all being taken for granted in London's Underground network.

If all these plans had come to fruition, an ambitious train service was planned, as detailed in the table below:

From and to:	Number of Trains per hour		
	Mondays to Saturdays		Sundays
	Peaks	Off-Peaks	All-day
Bushey Heath via Mill Hill*	7	6	3
High Barnet: via Charing Cross	7	6	3
via Finsbury Park to Moorgate	7	—	—
Finchley Central: via Charing Cross	14(a)	12(a)	6(a)
via Bank	7(b)	—	—
via Finsbury Park to Moorgate	7(c)	—	—
East Finchley via Charing Cross	14(a)	12(a)	6(a)
via Bank	7(b)	—	—
via Finsbury Park to Moorgate	7(c)	6(d)	8(d)
Alexandra Palace via Finsbury Park to Moorgate	7	6	—
Highgate (High Level) via Finsbury Park to Moorgate	14(e)	12(e)	8(d)
Finsbury Park (Low-level)	14	—	—
Drayton Park to Moorgate	28(f)	12(e)	8(d)

Notes:

\* The original proposal for the Bushey Heath service was a shuttle to and from Edgware, which was later amended to become the through service via Mill Hill.

- (a) Half from Bushey Heath, half from High Barnet.
- (b) All starting from Finchley Central.
- (c) From High Barnet.
- (d) All starting from East Finchley.
- (e) Half from Alexandra Palace, half from High Barnet (peaks), or East Finchley (off-peaks).
- (f) 14 from Finsbury Park (low-level), 7 from Alexandra Palace, 7 from High Barnet.

When the 1938 tube stock was ordered, a number of cars were designated as owned by the L.N.E.R. — these being that company's share of operating the service to High Barnet, and Edgware via Finchley. The cars allocated to the L.N.E.R. were:

10238— 10323 86 "A" end D.M.s  
 11238— 11323 86 "D" end D.M.s  
 12117— 12154 38 N.D.M.s  
 012313—012388 76 Trailers

Each of the above cars carried a plate "Property of L.N.E.R." on each side of the solebar. The "L.N.E.R." arrangement was purely an "on paper" agreement, as L.T. were responsible for maintaining all the 1938 tube stock fleet, which comprised 1,121 cars. On 1st January 1948, this arrangement no longer applied, as the "joint" operation of these sections of line were transferred to London Transport. The L.N.E.R. property plates on solebars remained in position, however, until the stock was scrapped (from 1973 onwards), or until some cars were refurbished for further service on the Bakerloo Line, in which

case the plates were removed at Acton Works. It is interesting to note that of the 252 cars refurbished for the Bakerloo Line (36 seven-car trains), 76 are former L.N.E.R. cars (44 D.M.s, 11 N.D.M.s and 21 trailers).

In the 1938 tube stock fleet, there were to have been ten trains of nine cars. However, despite the success of this scheme with pre-1938 tube stock, only two trains of new 1938 tube stock ever ran as such, as operation of such trains was abandoned because of the war. These trains would have operated on selected peak workings on all branches of the Northern Line, except for the Alexandra Palace line, where train lengths would be restricted to eight cars.

For the Moorgate to Finsbury Park peak hour shuttle service, 14 pre-1938 tube stock D.M.s were reserved (3382-88, 3390-95 and 3397). These cars were not to be fitted with passenger door control as they would have worked with sixteen 1920 Cammell Laird trailers, which were withdrawn from the Bakerloo Line Queens Park "local" service in 1939 (7234-49). The other 24 cars of the same stock, withdrawn at the same time (7230-33 and 5170-89) were destined for scrap. (In the event, all but five cars were scrapped in 1948-49, having been stored at various locations during the war (Edgware, Morden and Cockfosters). The five cars that were to remain were converted into an instruction train in 1949, and lasted until scrapped in 1969).

The proposed allocation of rolling stock was as follows:

The Northern Line would be operated totally by new 1938 tube stock. The Bakerloo Line would continue with pre-1938 tube stock, but would have eight new trains. The Northern City Line (Moorgate to Alexandra Palace) would be operated by both pre-1938 and new 1938 tube stock. So that extra trains could be made up with new motor cars, 1927 trailers 7565-70 (which became 70565-70) were reserved for the Northern City Line, but in the event, all 58 converted 1927 cars (70513-70) went to the Bakerloo Line by 1941. The Central Line would be wholly operated by pre-1938 tube stock, which had been displaced by the new 1938 tube stock on the Northern Line. The Central Line extensions were also deferred by the war, also partly completed, and in consequence of this, there was much spare rolling stock, mostly pre-1938 tube stock. While much of this was stored at Hainault depot, Neasden, Stanmore and Morden, some cars were stored on open sidings at Edgware and Highgate.

In anticipation of the extensions being completed, new destination and route "via" plates were ordered for the new and existing stock. In addition to the (now) normal Northern Line destinations, the new plates also included "Bushey Heath", "Elstree" and "Alexandra Palace". The temporary destination (or so it was thought in 1941) of "Mill Hill East" was a sticker over "Elstree". In addition, a limited number of route "via" plates of the following were produced:

VIA CITY

VIA HIGHGATE  
AND CITY

VIA FINSBURY PK

VIA HIGHGATE  
AND WEST END

Two other route plates were proposed, but examples have not been seen although full-size drawings for them were made:

VIA WEST END

VIA GOLDERS GRN  
AND CITY

VIA GOLDERS GRN  
AND WEST END

Following the deferring of the extensions, and the eventual abandonment, the following route plates were adopted, which were stickers on yellow blank plates:

VIA BANK

VIA BANK

VIA BANK

VIA CHARING X

VIA CHARING X

VIA CHARING X

Many Northern Line stations were provided with line diagrams incorporating the extensions; however, many of these were to be partly covered up with paper throughout their life on station walls, etc. Many survived into the 1960s and early 1970s, and were replaced only when stations were modernised, or when the Victoria Line opened, requir-

Continued on page 31



## THE NORTHERN LINE EXTENSIONS — IN CAMERA



1. Drayton Park on the Northern City Line in 1969. The southbound connection, built in 1939-40 to tube gauge, and used only for stock transfers, is seen on the right. The "new" L.T. signalbox is above the G.N.&C. tunnel mouths. Note that the section switch box 497A label reads "S.B. road from L.N.E.R." as late as 1969.  
[James Blake]

2. The same location, after takeover by British Rail. A class 313 E.M.U. approaches in the distance, using the 1939-40 ramp intended for tube trains, but enlarged to take surface gauge stock. Note that the G.N.&C. tunnel mouths have been landscaped over, and the L.T. signalbox demolished.  
[B. R. Hardy]

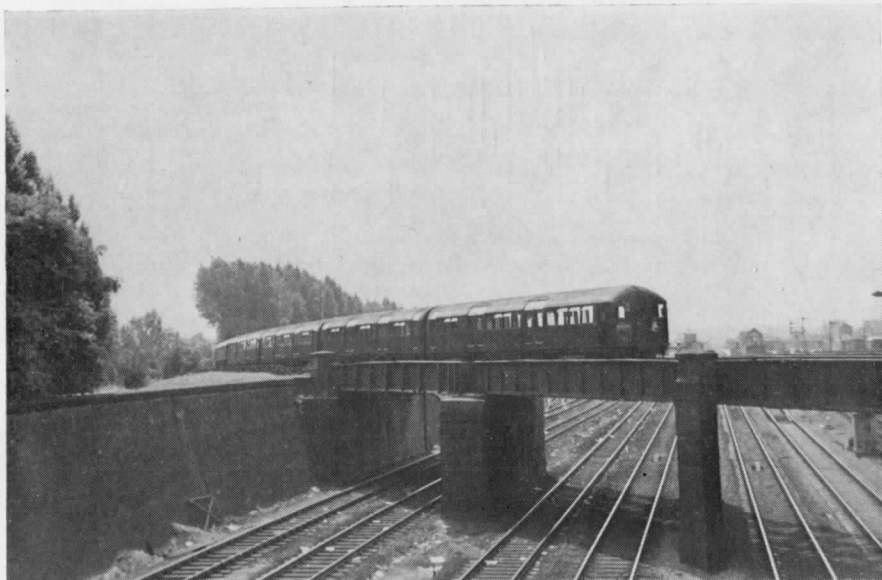




3. North of Drayton Park in the early 1960s, the southbound ramp can be seen just to the right of the diesel-hauled Broad Street train, descending to Drayton Park station. The almost completed but never connected northbound ramp can be seen to the right of that. This was finally put into use in 1976 by B.R., having stood wasted for over 35 years. The line in the foreground is the "down" line from Broad Street, which crosses over the proposed tube lines. [L.U.R.S.]

4. Finsbury Park E.R. station on 1st May 1965, showing the girder work still in position. The road in the foreground is the Stroud Green Road. The tube lines would have crossed here. [Alan A. Jackson]





5. North of Finsbury Park, the bridge crossing the main line tracks was dismantled in 1972 in connection with the G.N. suburban electrification. A four-car train of 1938 tube stock, hauled by a battery locomotive, crosses the bridge on its way to Drayton Park in August 1969, on the weekly stock transfer. [James Blake

6. After regular goods train working ceased over the "Northern Heights" in the early 1960s, Finsbury Park No. 7 E.R. signal box, located just beyond the flyover crossing the main line tracks, was staffed only for the special stock moves to and from the Northern City Line. In August 1969, battery locomotive L21 leads a stock transfer past No. 7 box. Up to the time the line closed, much of the L.T. cabling work was still in position. [James Blake



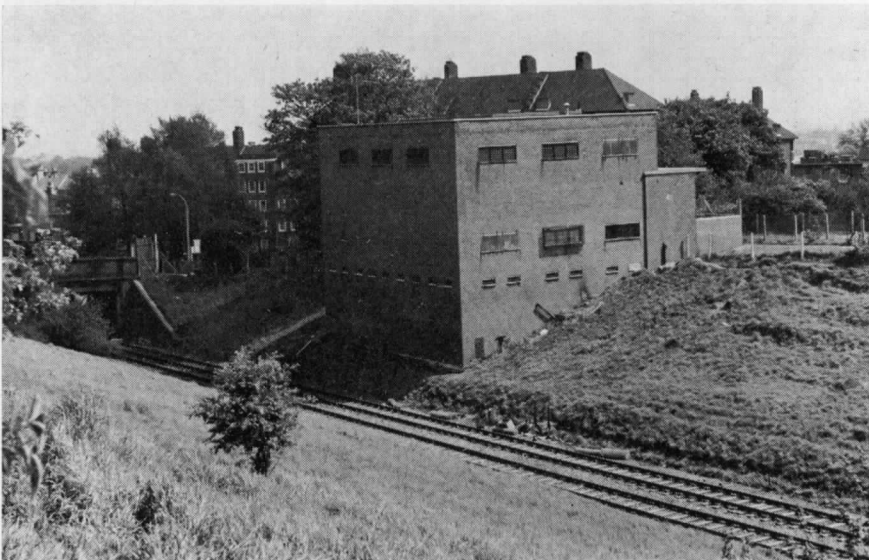


7. Stroud Green station of the L.N.E.R. in August 1945 looking north. Note the current rails in position on the down line, crying out to be used by tube trains!

[Photomatic

8. Except for Elstree, all the substations for the Northern Line extensions were built and equipped. Three of them, however, were never used and stood disused for many years. Muswell Hill and Page Street were eventually demolished, but that at Crouch Hill, illustrated here, is now owned by Islington Council and is in use as a youth club. In front and to the right of the substation at track level, a children's adventure playground has since been built.

[G. A. Finch





9. Seen approaching Crouch End station, with Crouch Hill substation in the background, Battery Locomotive L21 hauls the four-car track recording unit of 1960 tube stock on 1st July 1970, three months before the line's final closure. The train visited the Northern City Line for track recording purposes on this day and is seen on the return journey. Note that the train is travelling "wrong line" because of the condition of Crouch End station overbridge. [James Blake

10. Looking north at Crouch End station after closure of the line to passengers in July 1954, but open still to goods traffic and L.T. stock moves. Note that the platforms have been rebuilt to L.T. style. [G. A Finch







11. The same view on Boxing Day 1970, three months after the line was permanently closed, even for stock transfers. The bridge support installed in the middle of the down line track can be clearly seen. Note also that the platform buildings have been demolished. [James Blake]

12. Having closed the line, and removed the track during 1971, steps were then taken to renew some of the bridges that forced the line's closure in the first place. A much overgrown Crouch End station platform in April 1980 shows the unusual design of the replacement bridge, the headroom and width being much less than its predecessor. [B. R. Hardy]





13. Highgate L.N.E.R. station was rebuilt during 1940-41 and comprised a modern L.T. structure, seen in the background, in anticipation of the tube train service it never got. The L.T. bullseye station nameplates are seen in position, patiently waiting for tube trains! [Photomatic

14. In 1969, fifteen years after closure, Highgate high level station was fast disappearing beneath undergrowth, as seen here. After track lifting, the trackbed too became covered with weeds, and eventually trees. This 1969 photograph shows a windowless waiting room, and also the remains of 1953 B.R. posters. [James Blake





15. A view of Highgate high level station buildings a decade later, after occupation of the site by trees and undergrowth. Yet, a year later in 1980, all had been cleared because of drainage problems in the L.T. booking hall immediately underneath.

[B. R. Hardy

16. North of Highgate L.N.E.R. station, the line ran in twin tunnels to near Park Junction. Note that the down line tunnel mouth (on the right) has been rebuilt, having been bomb-damaged during the war. The track on the left is still used as far as the signal (now a fixed red light) by empty Northern Line trains using Highgate Wood sidings.

[B. R. Hardy



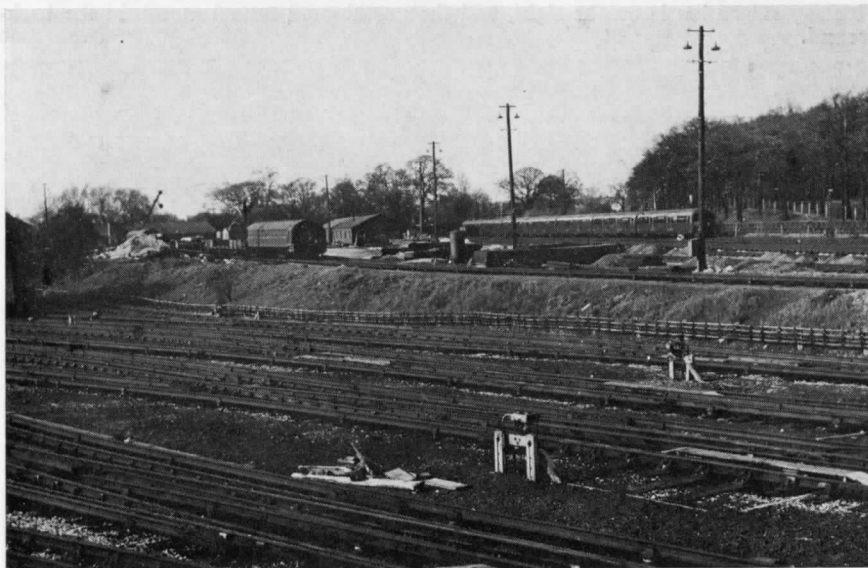


17. Park Junction, where the Alexandra Palace line diverges to the right, seen on the last day of operation on 3rd July 1954. The L.T. signal box is immediately behind the telegraph poles on the right, the former L.N.E.R. Wellington carriage shed, adapted for L.T. trains as Highgate depot, can be seen in the background.

[Alan A. Jackson]

18. A view of Highgate Wood sidings on 5th May 1956, which were built in the junction of the Finchley and Alexandra Palace lines. The tracks to Alexandra Palace, by this time used only by freight trains, are behind the stabled 1938 tube stock train.

[Alan A. Jackson]





19. A view of the north end of Highgate depot, from an enthusiasts' rail tour train on 5th May 1956. When owned by the L.N.E.R., this end comprised a solid brick wall, with access only at the south end. This depot was rebuilt in 1970.

[Alan A. Jackson]

20. Looking south at East Finchley on 21st March 1959, on the occasion of an R.C.T.S. rail tour, with N2/2 0-6-2T steam locomotive 69504 standing on the down line from Park Junction, which should have been the northbound line from the Northern City. The two centre tracks are still used by empty Northern Line trains to and from Highgate depot, while the outside two tracks were opened in July 1939 on the first stage of the extensions from Archway to East Finchley. Note that East Finchley substation is on the right, and the northbound tunnel mouth in the background.

[Alan A. Jackson]







21. The site of Muswell Hill station on 17th October 1964, with the never-used substation on the left, which was demolished shortly after. Note that the bridge over the railway has been filled in, to permit the use of double-deck buses over it. The steep slope of the Muswell Hill Road can be seen in the background. [Alan A. Jackson]

22. On the last day of operation at Alexandra Palace on 3rd July 1954, the partly-completed pre-war work was still very much in evidence. Note also the G.N.R. somersault signals, and that the rear coach of the train is a B.R. standard suburban coach. [Alan A. Jackson]





23. A view of Alexandra Palace station, and the famous Palace itself, almost two years after closure, seen on 5th May 1956. At this time, freight trains still operated on the branch, but as far as Muswell Hill only. From 8th January 1955, "no-block" working was introduced on the branch, to eliminate the need for signalmen, and trains thus had to travel at caution speed from Park Junction. [Alan A. Jackson]

24. At High Barnet in 1956, standing next to a "short" train of 1938 tube stock, N2 0-6-2T locomotive 69540 leads a Southend excursion train. Note the old L.N.E.R. signal box. This, with others at Woodside Park and East Finchley, still stand to this day. [D. A. Jones]





25. Looking beyond the limit of electrification at Mill Hill East towards Edgware on 13th November 1962, with B.T.H. Type 1 800hp Bo-Bo diesel locomotive D8242 shunting on a freight working. These locomotives were fitted with tripcocks for operating on L.T. sections of line. By this time, all the goods yards up to High Barnet had been closed, the only goods trips scheduled being to Mill Hill and Edgware, albeit only until early 1964.  
[J. C. Gillham]

26. A view of Page Street (Mill Hill) substation on 8th May 1965, after track lifting between Mill Hill East and Edgware had taken place, but with the L.T. cabling work of 1939-40 still in almost perfect condition.  
[Alan A. Jackson]





27. Looking north into Edgware L.T. station on 5th May 1956, with the flyover bridge for the northbound line from Mill Hill still in position, passing over the new route to Golders Green, which had been used only as sidings since their installation in May 1940. [Alan A. Jackson]

28. The same location almost a decade later, on 8th May 1965. The flyover bridge has been partly demolished, and the tracks leading to the Golders Green line (known as Nos. 17 and 18 sidings) were taken out of use in September 1964, and were removed shortly after this photograph was taken. The whole area is now overgrown and little can be seen of the 1939-40 works. [Alan A. Jackson]





29. The temporary No. 1 platform at Edgware on 20th August 1956, looking south. The partly constructed additional platforms can be seen on the right, with the new signal box and substation in the right background. Above the stabled 1938 tube stock train in the background can be seen the bridge which led into Edgware L.N.E.R. station (to the right). [Alan A. Jackson

30. The site of the cutting and proposed tunnel mouth on the north side of Edgware station in May 1958. This view is largely the same today, but the rest of the route as far as Brockley Hill has since been built on. [Photomatic







31. The brick arches of the proposed station at Brockley Hill, as they were in May 1958, having been kept in good condition right up to the time of abandonment of the extension in 1954, after which time they were allowed to take their toll from the elements. Today, just a few stumps remain. [Photomatic

32. Work on the twin tube tunnels under Elstree Hill had commenced at the south end only, where the flooded bricked-up bores are seen in May 1958. These disappeared without trace in the mid-1960s during the construction of the M1 motorway, but not before a child was found drowned here in the 1950s. [Photomatic



ing amended interchange facilities at stations. A photograph of that which was in place at East Finchley southbound platform until replaced by a modern diagram incorporating Victoria Line interchange, appears on the back cover of this publication. When rescued, this enamel sign still had paper covering the route via Crouch End.

### THE DECLINING L.N.E.R. AND L.M.S.R. TRAIN SERVICES

So far, we have seen what should have happened, and in fact what did (or did not) happen with the extensions and electrification, and the new services proposed. It is now time to look closely at the L.N.E.R. and L.M.S.R. services on those lines, from the beginning of the New Works Programme into the war years.

When reconstruction for tube working began, the Edgware—Finchley shuttle service was suspended from 10th April 1938 on various Sundays and weekday midday off-peak periods. To allow work to proceed more quickly, the service was suspended entirely after 10th September 1939, with substitute buses running hourly between Edgware L.N.E.R. station and Finchley Church End, calling at Mill Hill Broadway (in place of The Hale) and Mill Hill East. Tickets for this bus service were sold at the aforementioned stations. The L.N.E.R. station at Edgware closed after traffic on 13th April 1940 (except for parcels and goods traffic), after which, buses started from Edgware L.T. station, with tickets for the buses being sold there. From this time also, L.T. fares were charged, instead of L.N.E.R. fares. The special railway bus service was withdrawn altogether after traffic on 17th May 1941, in favour of L.T. bus route 240 which was itself extended to Mill Hill East from the Broadway, originating from Edgware, connecting with the single line extension from Finchley Central, opened from 18th May 1941. At the same time, Mill Hill (The Hale) ticket office closed and railway tickets were then sold at Mill Hill Broadway L.M.S.R. station.

Passengers were able to use railway tickets on the 240 bus service. For easy identification of these tickets, a horizontal line was printed on the ticket underneath the station of origin. Season ticket holders were also able to have through tickets on the bus to Edgware, but this facility was restricted to existing customers after 31st August 1951. Both season and ordinary ticket facilities on the bus service were withdrawn totally from 7th September 1969, but the sale of ordinary tickets was restricted to the stations between Camden Town and High Barnet (inclusive) from 16th January 1966.

With the extension of the Northern Line service from East Finchley to High Barnet from 14th April 1940, the L.N.E.R. and L.M.S.R. steam train service was cut back to East Finchley. There was, from this date, 14 "up" trains from East Finchley between 05.29 and 09.59 on weekdays, with no "up" service at any other time. In the "down" direction, 16 arrivals at East Finchley were scheduled on Mondays to Fridays between 17.12 and 23.00, and nine on Saturdays between 12.20 and 15.00. These trains worked through to all three London termini, as well as short workings to Finsbury Park. These can be summarised thus:

From East Finchley		Arrivals at East Finchley			
Weekdays		Monday—Friday		Saturday	
Time	Destination	Time	From	Time	From
05.29	Kings Cross	17.12	Finsbury Park	12.20	Kings Cross
06.29	Finsbury Park	17.27	Finsbury Park	12.41	Moorgate
06.59	Finsbury Park	17.40	Broad Street	12.57	Broad Street
07.35	Moorgate	17.57	Kings Cross	13.20	Moorgate
07.43	Finsbury Park	18.12	Broad Street	13.41	Broad Street
07.59	Moorgate	18.27	Finsbury Park	13.57	Finsbury Park
08.16	Kings Cross	18.42	Finsbury Park	14.22	Kings Cross
08.25	Moorgate	18.57	Finsbury Park	14.41	Moorgate
08.30	Broad Street	19.12	Finsbury Park	15.00	Finsbury Park
08.47	Moorgate	19.27	Finsbury Park		
08.59	Broad Street	19.57	Finsbury Park		
09.14	Finsbury Park	20.27	Kings Cross		
09.29	Finsbury Park	21.00	Finsbury Park		
09.59	Finsbury Park	21.27	Finsbury Park		
		22.27	Finsbury Park		
		23.00	Finsbury Park		

With the service to East Finchley being basically peak hours only, this meant that the Highgate to Finsbury Park section was left to the Alexandra Palace service at other times. As there were no trains to Alexandra Palace on Sundays, a service to East Finchley was also provided throughout that day of the week.

Through peak hour trains to and from Broad Street were withdrawn after Thursday 3rd October 1940 after bomb damage on the North London Railway, and those to and from Moorgate from 30th December 1940, because of wartime bomb damage on the Widened lines. Broad Street trains were restored from 11th November 1940, but only until 1st March 1941.

The tube platforms at Highgate were opened to the public from Sunday 19th January 1941. The steam service to and from East Finchley finally ceased after traffic on Sunday 2nd March 1941. From the following day, an increased service operated on the Alexandra Palace branch to partly compensate. From Sunday 9th March 1941, trains on this day operated as far as Highgate only, and this lasted until 27th July 1941, after which Sunday services were withdrawn. From Monday 7th September 1942, the remaining L.N.E.R. service on weekdays to and from Alexandra Palace was reduced even further to operate at peak hours only, Mondays to Saturdays inclusive, every 20 minutes, and to make it worse — only as far as Finsbury Park.

## AFTER THE WAR

After the war ended in May 1945, it was initially the intention to resume work as soon as possible on all the deferred Northern and Central Line extensions. Priority was given to the Central Line, and it was thought that the Northern Line would follow suit relatively soon after. While the schemes were intended to be completed largely as proposed before the war, the opportunity was taken for minor alterations and improvements to be made. One such alteration was the resiting of Bushey Heath station, the terminus of the extension from Edgware. Powers for its resiting were obtained in the London Transport Act of 1947, and the terminus would now be north of the Elstree Road near to Dagger Lane and not in the "V" junction of the Elstree Road and Watford By Pass. It was planned that the revised terminus at Bushey Heath would have four tracks instead of three in the first plan. It was announced that the Mill Hill East to Edgware section should be completed in 1948, while the Edgware to Bushey Heath and Drayton Park to Alexandra Palace/East Finchley sections should be ready a year later.

But in October 1950, the waiting public learned from London Transport that the section between Brockley Hill and Bushey Heath would not now be built, as it was considered the new London Green Belt would sterilise development beyond the Watford Way and thus reduce traffic potential. The Edgware to Brockley Hill and Mill Hill East to Edgware sections continued to be deferred, until a second announcement was made in February 1954 that these two would now be abandoned on the grounds that no further housing development could be expected in the area to be served, and costs had increased to the point that the existing traffic would not justify the expenditure.

The Alexandra Palace line electrification was also abandoned, but was treated as a separate case. The decline of the line probably started in 1942 when the service was reduced to operate at peak periods only, with no through trains beyond Finsbury Park. The line was closed altogether from 29th October 1951 to 6th January 1952 "to economise in the consumption of coal", but services were restored, still confined to peak hours only and with a gap in the "up" service from Alexandra Palace from 09.42 to 17.05 on Mondays to Fridays. (The gap in the midday service in 1949 was between 11.55 and 15.45.) The rolling stock used on the service did nothing to enhance passenger traffic either; the grubbier of gaslit coaches were usually the order of the day. This poor service diverted much traffic to L.T. bus services feeding Finsbury Park and Highgate stations and it is not surprising that British Railways (Eastern Region), which had been responsible for working the line since nationalisation in 1948, wanted to cease the passenger service altogether. Announcement of the proposed closure was made in 1953. The argument put forward was that the lack of passenger traffic did not warrant the investment in electrification. This overlooked the fact that tube traffic on the High Barnet Line was three times more than in steam days, and that the whole of the Alexandra Palace line passed through built up areas. The last day of operation on the Alexandra Palace service was on Saturday 3rd July 1954. The train, comprising eight coaches, was four times the length of the trains in latter days.

## THE ABANDONED WORKS

### Edgware to Bushey Heath

Piers for the viaduct at Brockley Hill had been partly completed on both sides of the A41 road at the time of the suspension of the work in 1940, and were carefully maintained during and after the war. The piers on the south side of the road were demolished completely in 1954, but those on the north side remained basically intact until about 1959 when a certain amount of demolition took place. The tunnel mouths of the Elstree Hill twin tubes (which had been used by the Home Guard) were bricked up in August 1953, the shields being left in each tunnel at the point of abandonment. The tunnel segments were removed from the site the previous May, having been delivered there in 1937. The path of the extension between Glendale Gardens and Hillside Gardens was offered to local residents in late 1954 for garden extensions, and from that time, gradual housing development has occurred from Edgware right up to the south side of Brockley Hill station site, culminating in the early 1960s with a block of flats right in the middle of the path of the railway. Traces of the route of the proposed railway from Edgware to Brockley Hill has all but disappeared, apart for the retaining walls on the north side of Station Road, Edgware. North of Brockley Hill today, some remains of the brick arches are still in place for all to see, perhaps serving as a dilapidated monument and sad reminder of what was once to be an impressive Northern Line. It was proposed to build a hypermarket on the site, but planning permission for this was refused in 1980. North of Brockley Hill the abutments of a partly completed pedestrian subway under the railway remains, but beyond this there is little to be seen. The bricked-up Elstree Hill tunnel mouths disappeared altogether in the mid-1960s with the construction of the M1 motorway, which has also affected other parts of abandoned Northern Line works, as we shall see shortly. The only work done beyond here of any notice was that of Aldenham rolling stock depot. Construction of this was accelerated so that it could be put to use as an aircraft factory in the war, and this indeed happened. After the war, pending the resumption of the extension work, it was converted into a temporary bus works. This became permanent after the official abandonment of the project in the early 1950s, and the depot was adapted as a permanent bus works from 1952, being completed as such in 1956.

After the schemes affecting Edgware were abandoned in February 1954, plans were drawn up to reorganise the track layout there, which was partly completed at the outbreak of the war.

Plans dated October 1954 show that the four middle stabling sidings would be kept (although they had not been laid), and supplemented by two more, being provided by using the existing northbound and southbound lines to and from Golders Green. (See Fig. 7.)

The two additional sidings would finish at the bridge carrying the L.N.E.R. line over the railway, which would be filled in. The northbound and southbound lines to and from Golders Green would use the alternative route installed in May 1940 (then known as sidings Nos. 17 and 18), with some track alignment from Edgware station. At the same time the platforms would be lengthened by about 90 feet and the station roof extended to also cover No. 1 platform. The old signal box was to be closed and control of signalling transferred to the new box, south-west of the station and built before the war, but as yet unused.

It was another decade, however, for any further work was done at Edgware, and the above mentioned plans were not implemented. The alternative route for the Golders Green line (Nos. 17 and 18 sidings — they were never connected at the south end) was taken out of use from September 1964 and the tracks lifted shortly afterwards. The "new" signalbox came into use from 31st January 1965, but then only as an interlocking machine room, with the introduction of programme machine signalling initially supervised from Golders Green. The old signal box at the south end of platforms 2 and 3 was closed and put to other uses — the track layout remained unaltered.

The platforms were lengthened to about 390 feet (only to be shortened again to a bare train's length when "terminal protection" was introduced from 22nd July 1979 — this apparatus controls the speed of trains approaching dead-end terminal stations by train-stops and reduced traction current. It was one of the locations to be so equipped following the Moorgate crash of 28th February 1975) and platform No. 1 never did get its all-

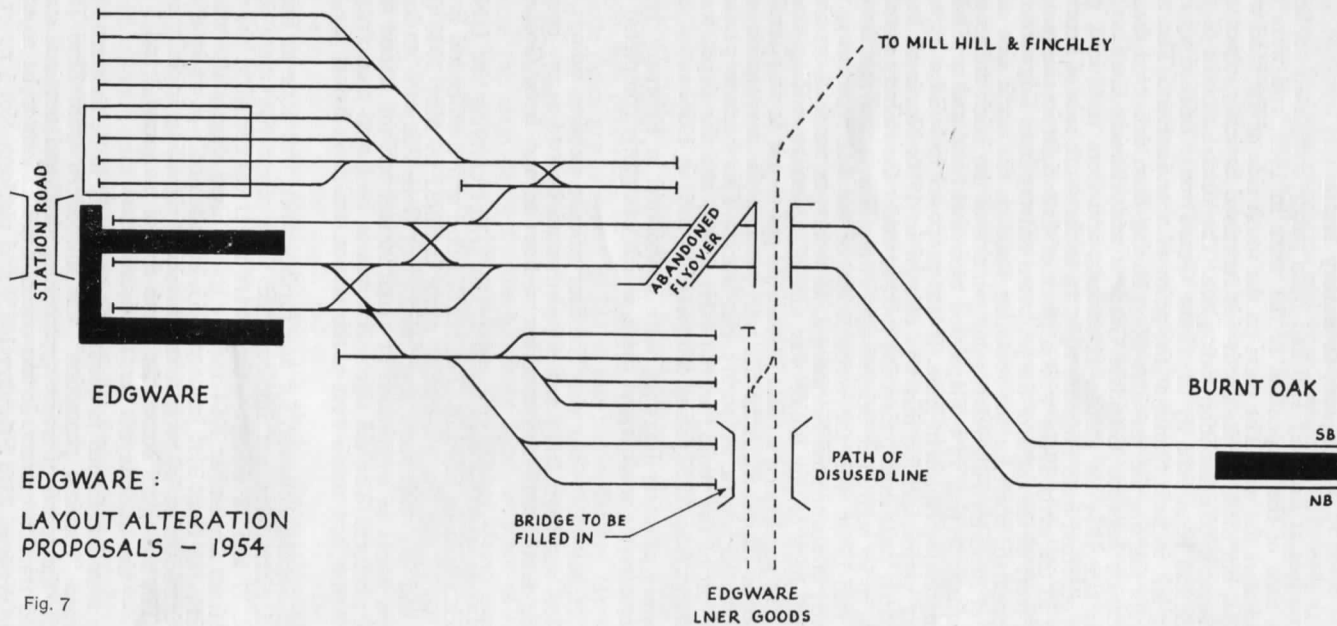


Fig. 7



over roof, although a new footbridge and stairs was provided. Any abandoned works now left were allowed to become buried in the undergrowth that followed, and apart from the additional platforms which can still be seen behind No. 1 platform, most traces of the works have disappeared and only the careful eye will detect the work done over 40 years ago.

### **Mill Hill East to Edgware**

The second track between Finchley and Edgware had been laid as far as Mill Hill (The Hale), complete with current rails, but these were removed soon after the single line to Mill Hill East was opened in May 1941. As it turned out, the Mill Hill East—Edgware section never had a passenger service again, although the suspension of service from 11th September 1939 was merely to allow electrification and doubling work to proceed uninterrupted. While much preparatory work was done, this section remained a single line for the rest of its day, for B.R. freight trains to and from Edgware.

On and from midnight on 12th July 1953, the responsibility of the track and stations beyond Mill Hill East to Edgware was transferred from the London Midland Region of British Railways to London Transport. (It was transferred from the Eastern Region — originally the L.N.E.R. — to the London Midland Region on 2nd April 1950.) During the early hours of 30th August 1953, an L.T. ballast train worked through to Edgware via Mill Hill to offload sleepers and rails in Edgware goods yard. Edgware L.N.E.R. station, disused since September 1939 (by passenger trains) and April 1940 (ticket office facilities) was demolished in 1961 to allow offices to be built. Diesel locomotives took over from steam during 1961 on the remaining freight trains. The gas works at Mill Hill East closed in 1961, but freight trains continued to serve Mill Hill East goods yard until 1st October 1962, The Hale until 28th February 1964 and Edgware until 4th May 1964. The Charrington's coal depot at Edgware closed and was transferred to Neasden, on the site of the former L.N.E.R. steam shed. The track beyond Mill Hill East was lifted in September 1964, although occasional contractors' and engineers' trains ran spasmodically until 23rd September 1964.

Part of the railway's path adjacent to Bunns Lane at Mill Hill was utilised for a slip road for the M1 motorway, hence the quick removal of the trackwork after closure in 1964. Mill Hill (The Hale) station site has disappeared beneath spoil dumped from the M1 motorway's southward extension from Mill Hill to Hendon in the 1970s, and with this opening, the slip road of the mid-1960s on the track bed of the line, became disused — the whole purpose of closing the line in 1964! This is the second time that the railway has been put to other uses, and the second time it has been abandoned! The completed but unused substation at Mill Hill (Page Street) was demolished during 1976-77, when it was swallowed up by Laing's complex, being the headquarters of this big civil engineering contractor. Initially, the substation was kept intact within the complex, but was completely empty from at least 1969.

### **Drayton Park to Alexandra Palace**

As noted above, the last passenger train service ran between Finsbury Park and Alexandra Palace on Saturday 3rd July 1954. Following the announcement in 1953 to close the line, the current rails, which had lain in position unused for some 14 years, were removed in January 1954. (It is believed that some of the materials recovered from the Northern Line extensions that were not to be, were utilised on the Central Line's Epping—Ongar single line electrification project — completed in November 1957 — which had a vastly lower traffic potential.) After the closure to Alexandra Palace, freight trains continued to venture on to the branch. However, Muswell Hill yard closed from 14th June 1956 and that at Cranley Gardens from 18th May 1957. From 8th January 1955 "no block" working was introduced beyond Park Junction, with trains proceeding at caution speed. This did away with the need for signalmen to be retained at these two yards. The track was removed entirely beyond Park Junction to Alexandra Palace in early 1958, but not before a special rail tour operated there on 5th May 1956.

B.R. freight trains continued to work between Finsbury Park and Park Junction to reach Edgware and High Barnet. On the still self-contained Northern City Line, general maintenance on the 1923-27 cars of pre-1938 tube stock was still carried out at the former G.N.&C. depot at Drayton Park. The tube cars had no reason to leave the line other than

for overhaul or repair at Acton. When this occurred, the cars were shunted to Highbury Vale sidings for making up into an E.R. freight train: it was not uncommon, it is understood, for these tube cars to be taken all the way to Edgware (L.N.E.R.) in the freight train, before being uncoupled at Highgate before transfer to Acton.

The last steam train to carry passengers to and from High Barnet ran in the summer of 1956, on an excursion to Southend. Since then, however, three rail tours have operated on various parts of the "Northern Heights", as follows:

On 21st March 1959 a steam rail tour operated between Finsbury Park and East Finchley. This was hauled by a class N2 0-6-2T locomotive 65904. This was followed on 1st October 1960 by a six-car diesel multiple unit rail tour of the "Northern Heights" which ventured as far as Edgware L.N.E.R. station. Both these railtours were organised by the Railway Correspondence and Travel Society, and a photograph of the 1960 tour train appeared in the November 1960 "Railway Observer" standing at Mill Hill East, en route for Edgware.

On Saturday 2nd September 1961, the Locomotive Club of Great Britain held an afternoon railtour of obscure branch lines in North London. This included High Barnet and N2 0-6-2T locomotive 69568 was used hauling three B.R. standard suburban coaches and one standard brake composite. This was probably the line's last steam passenger train as far as it is known, and the last use of the N2 class locomotive on passenger work.

The crossover just south of East Finchley on the lines to and from Park Junction was taken out of use in October 1958, being a relic of steam days for engine running-round.

Freight trains continued to serve the yards up to High Barnet until 1st October 1962, when all the goods yards were closed. These were at High Barnet, Totteridge, Woodside Park, Finchley Central, East Finchley and Wellington sidings. The distant signals installed for these trains were taken out of use on Thursday 10th September 1964. (No doubt if the line between Highgate and Finsbury Park had been completed, distant signals would have been installed on this section, also.) The surface stock train detector at East Finchley remained in position until 7th January 1973, when it was taken out of use.

With freight train workings ceasing altogether in 1964 (Edgware being the last yard to close), the section between Park Junction and Finsbury Park then saw very little activity. On Sunday 4th October 1964, the 1923-27 cars of pre-1938 tube stock on the Northern City Line were replaced by 1931/34 cars which became available after withdrawal from the Piccadilly Line. Because of Victoria Line construction work, the Northern City Line service had to be permanently curtailed at Drayton Park. Up to this time, the Northern City service operated two-car trains in the off-peak periods and six-car trains at peak periods. This involved coupling and uncoupling operations at Finsbury Park. With this facility to be lost, permanent four-car trains were decided upon, and eight such trains were allocated to the line. In addition, sixteen spare 1931 trailers were stored in the disused southbound tunnel north of Drayton Park. These were provided if the need arose to lengthen the eight four-car trains to six cars. The sixteen stored trailers were: 7096, 7113/15/17/30/33/39/40/45/57/62/68/69/74/85/87. When these cars joined their sister cars at Ruislip for scrapping at the end of 1966, they stood out like sore thumbs, having been stored in tunnel conditions without attention for two years!

Apart for some trials with new L.T. tamping machines, the Finsbury Park to Park Junction section saw little use until the replacement of the 1931-34 cars of pre-1938 tube stock by three and four car units of 1938 tube stock during October and November 1966. From this time, Drayton Park ceased to be a maintenance depot, and was used purely as stabling sidings only. It was thus necessary for the units of 1938 tube stock to be changed over fairly regularly; this was usually done once a week to and from Highgate depot and units were taken to and from Drayton Park by battery locomotive. Because of the poor condition of the road bridge over the railway at Crouch End station, requiring support from track level in the centre of the down line, single line working on a permanent basis was instituted from June 1967 on the "up" line. At about the same time, the station buildings at platform level were demolished. In 1967, the remains of the wooden station platforms and buildings at Stroud Green were destroyed by fire. One unusual stock move took place on 1st July 1970, when a four-car train of 1960 tube stock (3910-4902-4903-3911) was transferred by battery locomotive for a track recording trip on the Northern City Line. The train returned later the same day to Highgate.

The condition of the flyover at Finsbury Park over the E.R. main lines, and that of the bridge at Crouch End station, necessitated this route to be closed permanently, and the last stock move took place on 29th September 1970. Thereafter, the transfers were made to and from Neasden, via the City Widened Lines and Kings Cross E.R. From this time, units of 1938 tube stock were allocated to the Northern City Line on a permanent basis, unlike before, when any unit would suffice. The allocated units had Northern Line route maps, and could not therefore be mixed with the rest of Neasden's 1938 tube stock, for, quite rightly, they had Bakerloo Line car maps.

The rails between Highgate (high level) and Finsbury Park remained in position until January 1972, when they were removed, and Highgate high level tunnel mouths sealed. However, the rails remained in the two northern tunnels, and are still in position today, and in the southbound tunnel, current rails are still in situ for about a quarter of the way, although isolated. The flyover over the E.R. main lines was removed in the autumn of 1972 in connection with the electrification of the G.N. suburban lines.

## THE ROUTE TODAY

The electrification of the Great Northern suburban service, authorised in 1971, took in also the Northern City Line for its inner suburban services. This saw through proposals originally made at the beginning of this century, as the G.N.&C. tube tunnels were built to the main line loading gauge of 16 feet in diameter. The line was handed over from London Transport to British Rail (Eastern Region) after the last L.T. trains ran on Saturday 4th October 1975. The 1939-40 completed ramps were opened out as they were built to "tube" gauge, and were at last put to proper use, the southbound having been used only for stock transfers; all that remained was for the northbound ramp to be connected at the Drayton Park end. The comparatively new L.T. signal box over the tunnel mouths at Drayton Park was demolished shortly after the line was closed. The G.N.&C. depot at Drayton Park temporarily housed miscellaneous B.R. vehicles during the reconstruction, but after the opening in 1976 (first stage between Drayton Park and Old Street on 16th August, and Moorgate—Old Street and north of Drayton Park on 8th November) it became disused and the tracks disconnected. The buildings were demolished at the beginning of 1979 and the site is now flattened.

At Finsbury Park, the "temporary" entrance in Station Place is still very much temporary, although the facade and steelwork over the temporary booking hall was demolished in 1972. There appear to be no immediate plans to rebuild this entrance, although the arrangements have been "temporary" now for over 40 years. North of Finsbury Park the flyover across the main line tracks was demolished in the autumn of 1972 to make way for the overhead equipment of the electrification work of the Great Northern suburban services. It is thought that Finsbury Park No. 7 signal box, on the north side of the flyover, was demolished at about the same time, being open in latter years only for stock moves.

The route from here to the southern portals of Highgate tunnels is now a "parkland walk". En route, all that remains of Stroud Green station are a few charred foundations. Climbing towards Crouch End, Crouch Hill substation is now used by Highview Youth Club and owned by Islington Council. At track level here, a children's adventure playground has been constructed and beyond this leads into Crouch End station. The platforms at this station were rebuilt in anticipation of the L.T. service that never came, and are very much "L.T." style, as can be seen at countless other L.T. stations, and are basically still intact. Throughout the route, from north of Finsbury Park, traces can be seen of the wasted cabling work and bracket supports, although this has been less prominent since the track was removed in early 1972.

It is interesting to note, that since the closure of the line, some of the bridges have been rebuilt. Two, however, were rebuilt before the line was closed — at Mount Pleasant Villas and Mount View Road. The road bridge over the railway at Crouch End station (Crouch End Hill), where the support was placed in the centre of the down line track, was rebuilt completely to a new (and unusual) design in 1978. Further north, the bridge taking the railway over Stanhope Road was rebuilt in 1980. Both bridges have been designed obviously not to accommodate a double track standard gauge railway (unfortunately), as that at Crouch End appears to be narrower and having less headroom than its predecessor. That at Stanhope Road is wide enough only for one track, if ever it was to be reinstated.

Access to the parkland walk is at Finsbury Park at the end of Oxford Road, at the point where a footbridge crosses the E.R. main line into the park, and at Highgate via Holmesdale Road. These have been in use for some time. However, during 1981, several more access points have been established: Stroud Green (steps up from Stapleton Hall Road), a slope at Mount View Road (between Stroud Green and Crouch End), at Crouch End itself, and at Stanhope Road (between Crouch End and Highgate).

Highgate high-level station, the only L.T. station to have L.T. bullseye name signs, but never to be served by an L.T. passenger train service, became overgrown very soon after passenger closure in July 1954. This grew on to the track bed as well, when this was lifted in early 1972. Within a few years the station was to all but disappear in this uncontrolled undergrowth. However, because of drainage problems affecting the L.T. ticket hall immediately underneath the high level platforms, the whole of the high-level station area, track bed included, was cleared during 1980, with repairs being effected in the booking hall below. It appears that clearance of the station area is being maintained, at least at the time of writing.

Beyond Park Junction, where the Alexandra Palace line diverged right, Highgate Wood has been allowed to grow on to the trackbed of the line since about 1969, but traces of the route and some of the 1939-40 works can still be seen. South of Cranley Gardens station, an electricity substation was built on the alignment of the track in about 1959. It is interesting to note that this utilises some of the concrete cable carriers erected for L.T. cables in 1939-40. During 1974-75, an old people's home was built on the site of Cranley Gardens station, and maisonettes on the site of the coal yard. From north of Cranley Gardens to south of Muswell Hill, this section has also been made into a parkland walk, which affords an impressive view of London from the Muswell Hill viaduct. After the route to Alexandra Palace was lifted in early 1958, the opportunity was taken to fill in the road bridge which passed over the railway at Muswell Hill, which had precluded the use of buses larger than single deck. A public subway has since been built under the roadway and a school built on the site of the station, which was on the north side of the Muswell Hill. The station site at Alexandra Palace eventually became used as a car auction centre, after demolition of the station platforms, while other parts of the station area were used by B.R. for research purposes. During 1980, the station area was being cleared, to be turned into a car park for when the Palace was eventually resuscitated. However, on 10th July 1980, most of the Palace was destroyed by fire and thus we wait with interest to see if it will be rebuilt.

On the High Barnet line, little has changed since electrification, except for the closure of the goods yards already mentioned. Apart from Wellington sidings, all have had car parks built on them (East Finchley, Finchley Central, Woodside Park, Totteridge and High Barnet), but it is interesting to note that in 1967 there was a proposal to construct three additional electrified sidings on the site of High Barnet goods yard, but, up to now, has come to nothing. Except for East Finchley station, which was completely rebuilt, all other stations north thereof are much the same in appearance as they were in L.N.E.R. days.

#### AND WHAT FOR THE FUTURE?

Towards the end of 1980, it was reported in the railway press that L.T. were considering reopening the line to Alexandra Palace, to demonstrate the working of a light rail passenger transport system. This has been brought about because of the escalating costs of normal underground railway construction, which has precluded any further extension to the Jubilee Line, curtailed at stage I. Some thirty sites for light rail have been examined, but the Alexandra Palace route is said to fulfil requirements more than others, as it would not require extensive civil engineering work (L.T. already has the right-of-way, and the bridges and tunnels are still intact), the area under test has passenger potential(!) and the scheme could be implemented reasonably quickly, although the line is currently blocked at certain points. The scheme was given a ten-minute feature on "Thames at Six" television on Thursday 4th December 1980. London Transport stated that they were even prepared to TUNNEL beneath the obstructions at Cranley Gardens, or meet the cost of reconstructing the old people's home elsewhere.

Whether L.T.'s proposals for this "mini-tram" route are accepted and then seen in actual revenue earning service, remains to be seen. At this time, however, we can only

hope that this scheme will come to fruition, and speculate how it might look and operate, thus putting to use again a line which once boasted an intensive passenger service up to just over forty years ago.

Now that much of the route of the Northern Line extensions has been made into a parkland walk, it is not uncommon for groups and Societies to walk over the trackbed of the line. One such group, the North London Transport Society, organises such a walk annually, on the Sunday nearest to the date of the line's closure to passenger traffic. The 1981 walk, which was the third in the series, can be summarised thus: traces of the line and the New Works disappear each year — Laing's complex at Page Street, Mill Hill now completely obliterates the path of the railway and north of here, up to the now disused M1 slipway, houses have been built. One extension that still could be made without much difficulty, however, is from Mill Hill East to the Cophall Stadium, to which public transport is currently non-existent. An attempt at providing a service was made from 31st March 1979, in the form of bus route 296. This did not last long, mainly due to the circuitous route, and was withdrawn on 29th September 1979. If the Northern Line was to be extended, the track would have to be doubled to maintain the existing maximum frequency (every 10 minutes), or the service reduced if extended as a single line. However, one can only speculate, wait and see. (See Fig. 8.)

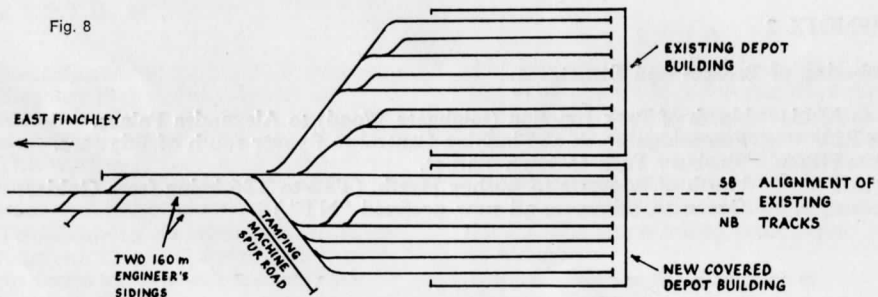
### WHAT MIGHT HAVE HAPPENED, IF ONLY ...

Let's suppose the extensions had been completed, and the train service proposed, as outlined on page 00 of this article had been operating. Then came the Victoria Line, initially as "Route C" under the proposals of the London Plan Working Party of 1948. In 1964, the still self-contained Northern City Line was cut back to Drayton Park to allow Victoria Line work to proceed at Finsbury Park, taking over the two G.N.&C. platforms there. What would have happened to the 14 peak-hour only trains (by then, one assumes, would not be formed of 1927 motors and 1920 trailers!). Would they have been diverted to the high level station or would they have been withdrawn altogether, to give only 14 trains per peak hour between Moorgate and Drayton Park, instead of 28? Or, would an increased service (with extra rolling stock) have operated beyond Finsbury Park to Alexandra Palace and East Finchley? Would there really be the need for 28 trains an hour all the way to Highgate high level, with half of this number going to East Finchley (and High Barnet), and Alexandra Palace? These are the sort of questions that the planners would have had to consider.

Assuming this problem had been solved and satisfactorily settled, what about the G.N. suburban electrification of the 1970s? Would B.R. have been allowed to take over the Northern City Line then, or would it have had to find alternative London termini (such

### HIGHGATE DEPOT : PROPOSED LAYOUT ALTERATIONS IN CONNECTION WITH FUTURE WIDENING OF THE ARCHWAY ROAD

HIGHGATE WOOD SIDINGS TO BE REMOVED  
PARK JUNCTION SIGNAL BOX TO BE CLOSED





as Broad Street and Moorgate). If it was to take over the Northern City Line — what about the tube service? This would have to have been terminated south to north in the high-level station at Finsbury Park, defeating the object of the works of 1935-40 in providing a direct tube service from the Northern Heights to the City. However, we shall never know the answers to any of these questions, and one can only speculate what might have happened. Just as interesting, of course, is what types of rolling stock would now be running on the Northern Line extensions — perhaps a bit difficult to envisage how the tide would have turned!

#### AND FINALLY ...

The author would like to thank Alan A. Jackson, D. F. Croome, H. V. Borley, Paul Creswell, James Blake, Steve Tish and Del Lomas for assisting in the preparation, compilation and checking of this article. Without their help and research, this issue of Under-ground would not have been possible.

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#### APPENDIX 1

##### Distances Between Stations — Northern Line Extensions:

	Miles
Drayton Park—Finsbury Park (H.L.)	0.80
Finsbury Park (H.L.)—Stroud Green	0.74
Stroud Green—Crouch End	0.58
Crouch End—Highgate	0.91
Highgate—Cranley Gardens	0.90
Cranley Gardens—Muswell Hill	0.55
Muswell Hill—Alexandra Palace	0.50
Mill Hill East—Mill Hill (The Hale)	1.83
Mill Hill (The Hale)—Edgware	1.27
Edgware—Brockley Hill	0.78
Brockley Hill—Elstree	1.17
Elstree—Bushey Heath*	0.91

Note \* 1938 site of proposed station.

#### APPENDIX 2

##### Numbering of Bridges and Structures:

AP1 to AP11:	North of Park Junction (Highgate Wood) to Alexandra Palace.
E1 to E22:	Footbridge north of Finchley Central to flyover south of Edgware.
HB1 to HB68:	Finsbury Park to High Barnet.
T37 to T48:	North of Edgware to Bushey Heath. (T3B to T36 being from Golders Green to Edgware, all now prefixed "NT".)

## APPENDIX 3

### Location of Bridges on Northern Line Extensions:

AP1	Highgate Wood—footpath from Lanchester Road (over).
AP2	Cranley Gardens—water board subway (under).
AP3	Cranley Gardens station footbridge (over).
AP4	Cranley Gardens station—Muswell Hill Road (over).
AP5	Muswell Hill viaduct, two arches.
AP6	St James Lane (under).
AP7	Muswell Hill viaduct, 14 arches.
AP8	Muswell Hill (over).
AP9	Muswell Hill station footbridge (over).
AP10	Private road to Alexandra Palace (under).
AP11	Alexandra Palace station footbridge (over).
E1	North of Finchley Central, footbridge (over).
E1A	Cable gantry (over).
E2	Crescent Road.
E2A	
E3	
E3A	
E3B	Dollis Brook viaduct.
E3C	
F3D	
E4	
E4	Frith Lane (under).
E5	Holders Hill (under).
E6	Station subway—never built.
E7	Cable gantry (over).
E8	Sanders Lane (over).
E9	Dole Street (over).
E10	Page Street (over).
E11	Watford Way (over).
E12	Bunns Lane (over).
E13	L.M.S. Railway
E14	
E15	Mill Hill The Hale station footbridge (over).
F16	Hale Lane.
F17	Culvert.
E18	Culvert.
F19	Deans Lane.
E20	Culvert.
E21	“New” route to Golders Green (Nos. 17 and 18 sidings—see text) (under).
E22	Flyover “new” route (under).
HB1	Finsbury Park—cable gantry, south of station (over).
HB1A	Seven Sisters Road, Finsbury Park station (under).
HB1B	Stroud Green Road, Finsbury Park station (under).
HB1C	Flyover E.R. main lines, north of Finsbury Park (under).
HB2	Public subway (under).
HB3	Upper Tollington Park (under).
HB4	Not allocated.
HB5	Stroud Green station, Stapleton Hall Road.
HB5A	Stroud Green station, subway (under).
HB6	Mount Pleasant Villas (under).
HB7	Mount View Road (over).
HB8	Crouch Hill Road (over).
HB9	Crouch End, public footbridge, south of station (over).
HB9A	Crouch End station footbridge (over).
HB10	Crouch End station, Crouch End Hill (over).
HB11	Not allocated.
HB12	Stanhope Road (under).

HB13 Culvert.  
 HB14 Northwood Road (under).  
 HB15 Public footbridge, south of Highgate south tunnels (over).  
 HB16 Not allocated.  
 HB17 Highgate station, subway under high level station.  
 HB18 Park Junction, cable gantry (over).  
 HB19 Culvert.  
 HB20 Woodside Avenue (over).  
 HB20A Approach road to Highgate depot.  
 HB21 Occupation underbridge.  
 HB22 Culvert.  
 HB23 Great North Road, East Finchley, northbound and southbound lines to and from Park Junction (under).  
 HB23A Great North Road, East Finchley, southbound Northern Line (under).  
 HB23B Great North Road, East Finchley, northbound Northern Line (under).  
 HB24 East Finchley station subway (under).  
 HB24A East Finchley disused station subway (under).  
 HB25 Not allocated.  
 HB26 Cable gantry north of East Finchley station (over).  
 HB27 East End Road (over).  
 HB28 Prospect Place (over).  
 HB29 Stanley Road (over).  
 HB30 Church Lane (over).  
 HB31 Public subway (under).  
 HB32 Not allocated.  
 HB33 Disused overbridge.  
 HB34 Not allocated.  
 HB35 North Circular Road (over).  
 HB36 Manor public footbridge (over).  
 HB37 Squires Lane (over).  
 HB38 Not allocated.  
 HB39 Finchley Central station footbridge.  
 HB40 The Broadway, north of Finchley Central station (over).  
 HB41 Cable bridge (over).  
 HB42 Nether Street (over).  
 HB43 Lovers Walk public footbridge (over).  
 HB44 Not allocated.  
 HB45 West Finchley station footbridge (over).  
 HB46 Nether Street, north of West Finchley station (over).  
 HB47 Not allocated.  
 HB48 Not allocated.  
 HB49 Argyle Road (under).  
 HB50 Not allocated.  
 HB51 Holden Road (under).  
 HB52 Woodside Park station footbridge (over).  
 HB53 )  
 HB54 )  
 HB55 )  
 HB56 Woodside Lane (over).  
 HB57 Not allocated.  
 HB58 Totteridge Lane, Totteridge station (over).  
 HB59 Not allocated.  
 HB60 Occupation overbridge.  
 HB61 Not allocated.  
 HB62 Western Way (over).  
 HB63 Culvert.  
 HB64 Not allocated.  
 HB65 Great North Road, south of High Barnet (under).  
 HB66 Cable gantry, in shunting neck (over).  
 HB67 Cable gantry (over).  
 HB68 High Barnet station footbridge (over).

T37	Edgware, overbridge north of station.
T38	Occupation overbridge.
T39	Footbridge over Purcells Avenue.
T40	Brockley Hill viaduct (south side, 22 arches).
T41	Watford By Pass (under).
T42	Brockley Hill station viaduct (north side, 12 arches).
T43 )	Under Brockley Hill station.
T44 )	
T45	Brockley Hill viaduct, 7 arches.
T46	Public subway (refer to text).
T47	Elstree Hill, north of Elstree station (over).
T48	South of Bushey Heath station (under, use not known).

#### APPENDIX 4

##### Sources of Research:

- "Rails Through the Clay"; A. A. Jackson and D. F. Croome; Allen & Unwin; 1964.
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- "The Railway in Finchley"; George Wilmot; Barnet Borough Council; 1973.
- "Northern Wastes"; James Blake; North London Transport Society; 1980.
- "Improving London's Transport"; Railway Gazette; 1946.
- "Rails to the People's Palace"; Reg Davies; Hornsey Historical Society; 1980.
- "The Railway Magazine" and "Railway World"; various issues.

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# NORTHERN LINE

## PLATFORMS 3 & 4 SOUTHBOUND

