

# MINUTES FROM THE ENGINEERING COMMITTEE MEETINGS

by Tony Beard

## MEETING No.194 HELD ON 3 JANUARY 1938

### Special Expenditure Requisitions Approved

The following special expenditure requisition, having been approved and signed by the officers concerned, was submitted for the approval and signature of the Vice-Chairman:

### New Works Programme 1935/40

F 312, supplementary to Special Expenditure Requisition No F262 (which authorised an expenditure of £2,000 on the purchase of two special rail wagons to carry welding plant) to cover an additional expenditure of £700, in accordance with a previous decision. This was approved and would be charged to Capital Account, a claim for an additional allowance from the pool would be submitted in respect of the whole of this expenditure.

### Uxbridge Station Building: Report of Tenders

Mr Robertson submitted a memorandum dated 30 December reporting that the two lowest tenders for the new station building at Uxbridge had been examined and that they had been found correct subject to two minor errors. In accordance with Mr Robertson's recommendation it was decided to accept the lowest tender, namely that submitted by –

J Jarvis & Sons Ltd, amounting to £89,472, the work to be completed in 10/12 months.

### Noise Reducing Screens: Report on Tenders

Mr Robertson submitted a memorandum dated 31 December reporting that tenders for the supply and erection of noise reducing screens in 5½ miles of tunnel, Northern Line, had been received from the firms set out below:

Light Steelwork Ltd.

R Robinson & Co. Ltd.

Willment & Co Ltd.

In accordance with Mr Robertson's recommendation, it was decided to accept the lowest tender, namely that submitted by Willment & Co. Ltd. Amounting to £14,938, the work to be completed in 8 months.

### Station Design: Distinctive Symbols

The Vice-Chairman stated that it was desirable that a symbol should be incorporated in the decoration of each of the Board's stations, so that they would become distinctive and easily recognisable, Normally the symbol would associate the station with the locality.

Mr Holden stated that he would submit a design which had already been prepared for a stained glass window in the ticket hall at Uxbridge station. Further proposals for the purpose at Highgate and Wanstead stations are referred to in the following items.

### Highgate (LNER) Station Plans

Mr Holden submitted the following drawings of Highgate (LNER) Station:

Drawing No.	Title
A 9171/39 (perspective sketches)	Upper Station/Archway Road
A 9170/38	Ticket Hall
A9015/36 and A 9235/41	Lower Station

It was decided:

#### (a) Upper Station: Archway Road Entrance

to approve the arrangement shown on Drawing No A 9171/39 subject to the entrance of the station being a clean curve, the deletion of the tower and sign next to the public house and to a metal silhouette of Dick Whittington and his cat being placed on the roof of the station entrance at its south end.

#### (b) Ticket Hall

To refer back for reconsideration in relation to engineering limitation the arrangement shown on Drawing No A 9170/38, with a view to the raising of the ticket hall in order for the steps leading to Priory Gardens could be replaced by a ramped subway and a reduction in the number of steps between the ticket hall and the LNER platforms.

#### (c) To refer back for reconsideration and resubmission by the officers concerned Drawings A 9015/36 and A 9235/41.

### Wanstead Station: Plans

Mr Holden submitted Drawing No A 9250/37 showing the plan and side elevations and Drawing A 9252/39 showing perspective view and elevations of Wanstead station, revised in accordance with an earlier decision. Consideration was given to the possibility of putting doors in the porticos with a glass panel above them showing St George and the Dragon. It was decided:

#### (a) To approve the arrangement shown on Drawings Nos A 9250/37 and A 9252/39, subject to the omission of the extension to the tower and of the column on the roof, the cornices being left clear.

#### (b) That the porticos should be built as shown on the drawings referred to above; a decision on their treatment being left until the station is erected.

Final drawings would be submitted for signature.

### Gants Hill Station Subways; Agreement with Ilford Corporation

Mr Grainger submitted the draft agreement prepared by the Ilford Corporation relating to the construction of the subsurface station and user of the subways by the public at Gants Hill station, as amended, together with a covering memorandum. It was decided:

- (a) To approve the draft agreement, subject to:
  - (i) Mr Grainger suggesting to Ilford Corporation that it would be equitable that the contributions made by public authorities should be paid six weeks after the subways are put into use, instead of following completion of the station as provided in the draft agreement.
  - (ii) Clause 5 of the agreement being amended to provide that, in so far as the land shown on the plan referred to in the clause falls within the station premises, the Board should be granted a perpetual easement over it.
- (b) That, before the opening of the station, when the subways are returned to the Board, Mr J.P. Thomas should make arrangements with the Metropolitan Police to retain responsibility for law and order in the subways.
- (c) The principle being established that whenever a public subway is associated with one of the Board's stations, powers for its construction should be secured in such a form that the Police will take the responsibility for the maintenance of law and order therein.
- (d) That the Secretary and Chief Legal Adviser should provide a reason regarding the absence within the powers under which the subways at Gants Hill have been constructed for any provision requiring the Police to be responsible for the maintenance of law and order therein.

#### **Newbury Park Station**

Mr Robertson reported that the estimated total cost for a covered in bus station at Newbury Park, as suggested during earlier discussion, would involve additional expenditure of between £3,500 to £4,000.

It was decided that as soon as a detailed survey became available and the general layout of the site is agreed, Mr Oliver Hill should be instructed to prepare a rough sketch of the new station at Newbury Park on the assumption that the covered interchange station scheme is adopted and on the assumption that the proposals for the road facilities etc., tentatively agreed at the meeting held with representatives of the Ministry of Transport and the Essex County Council on 30 December, would be confirmed.

#### **Railway Rolling Stock: Individual Door Control**

Mr Graff Baker submitted a memorandum dated 30 December, setting out particulars of the cost of fitting individual passenger door control to existing tube cars and to surface lines rolling stock that would not be so fitted upon completion of the New Works Programme 1935/40 and the Surface Lines Rolling Stock Replacement Programme.

It was noted that the cost of equipping the whole of the remaining tube cars was estimated at £80,000 and the remaining surface lines rolling stock was estimated at £103,000, of which latter figure a further portion would probably be ante-dated expenditure only and a further portion would be recoverable in that the equipment could be fitted to new cars.

It was agreed that it would only be necessary to run an experimental tube train fitted with individual door control before the proposal to equip the whole of the existing tube cars could be recommended. It was decided:

- (a) That Mr Graff Baker's memorandum should be submitted to the Chairman's Meeting with the recommendation that the cars would operated on the Central Line upon completion of the New Works Programme 1935/40 should be fitted with individual door control at a cost of approximately £35,000, subject to an experiment with one train proving satisfactory, but that no steps should be taken at this time to fit individual door control to the remaining tube lines or surface lines cars.
- (b) That Mr Graff Baker should arrange for one tube train to be fitted experimentally with individual door control as quickly as possible, the cost being held in suspense and results observed and reported.
- (c) That a note must be added to Special Expenditure Requisition No CB 118 for alterations and improvements to existing tube stock, explaining that a recommendation would follow for an additional £35,000 to be spend upon equipment of the cars to work on the Central Line with individual door control if the experiment with one train proves satisfactory.

### **MEETING No.195 HELD ON 10 JANUARY 1938**

#### **North London and North East London Electrification Schemes;**

##### **Substation Plant and Equipment: Firms to Tender**

Mr Millen submitted a memorandum dated 10 January recommending that the firms set out below should be invited to tender for the provision and installation of eight rectifier equipments for the supply of current for the extension of the Northern Line from Highgate Archway to East Finchley and the electrification of the LNER lines from Finsbury Park to Alexandra Palace, High Barnet and Edgware:

The Automatic Telephone Co.	Ferguson Pailin Ltd.
The British Electric Transformer Co.	Crompton Parkinson Ltd.
The British Thomson-Houston Co. Ltd.	Bruce Peebles & Co. Ltd.
The Electric Construction Co. Ltd.	The General Electric Co. Ltd.
The English Electric Co. Ltd.	Standard Telephones and Cables
Ferranti Ltd.	Bertram Thomas
The Hackbridge Electric Construction Co. Ltd.	

It was decided:

- (a) To invite the firms set out above to tender for rectifier equipment required for the supply of current for North London and North east London electrification schemes.
- (b) That the preparation of specifications and the sending out of tenders for the North East London scheme should be pressed as a matter of urgency.

#### **Fairlop Airport**

Mr Robertson submitted a memorandum dated 7 January reporting that the arrangements in connection with the proposed airport at Fairlop had been discussed with the Surveyor to the City Corporation. It was noted that agreement between the authorities concerned had been reached in regard to the sale of land required for the airport and that it was proposed to widen Forest Road on its south side to a width of 50ft which would involve widening the bridge carrying the railway over the road at Fairlop Station. It was also noted that the City Authorities had in mind the construction of new road running parallel with the railway between Barkingside and Fairlop Stations and that the City Authorities were anxious to obtain a small parcel of land owned by the London and North Eastern Railway south-east of Fairlop station upon which were located some railway cottages (which might be exchanged for land required for the new station). The surveyor was in agreement with the proposal that the station should be rebuilt south of Forest Road in which event he was of the opinion that the City Authorities would make a contribution towards the cost. It was decided:

- (a) That Mr Heaps should prepare and submit a plan, with an estimate, of the new station at Fairlop on the following basis:
  - (i) The station to be south of Forest Road and to be provided with a through connection, under cover, to the airport buildings.
  - (ii) The station to be designed to a common plan with the airport buildings, so far as possible.
  - (ii) The proposed new road east of the railway between Barkingside and Fairlop to be taken under the covered way between the station and the airport (with adequate clearance for double deck buses) into the concourse outside the station.
- (b) That Mr Robertson should arrange for the plan referred to in (a) above to be submitted to the London and North Eastern Railway and endeavour to secure their agreement to the exchange or sale of land suggested by the City Surveyor.

#### **Highgate: LNER Station**

Consideration was again given to the proposed ticket hall at Highgate LNER Station. It was decided:

- (a) That an instruction should be issued to the consulting engineers for no more that 26 steps between the ticket hall and the LNER platforms as shown on the signed drawing, additional stanchions being provided in the ticket hall if necessary to carry the LNER tracks.
- (b) That a few steps should be provided at the ticket hall end of the passage from Priory Gardens, the remainder of the passageway being ramped at a gradient of not steeper than 1 in 12.

#### **Brockley Hill (Edgebury) Station**

Mr Robertson submitted a memorandum dated 7 January referring to the arrangements which had been made with All Souls' College that the station at Edgwarebury should be built as part of the development of its estate. He reported that Messrs Done, Hunter & Co., the agents for the All Souls' Estate, had requested particulars of the facilities required by the Board. The requirements of the parties concerned were set out in a memorandum submitted.

Mr Heaps submitted two sketches showing suggested alternative arrangements for the station. It was decided:

- (a) That the station generally should be of the South Harrow type with the ticket hall under the bridge that would carry the railway over the proposed extension of the spur road.
- (b) That provision should be made in the plans of the station for the installation of escalators at a later date, if required.
- (c) That the south-east corner site at the junction of the Watford By-Pass and the spur road should be left for development by All Souls' College with a private road being provided for the Board's use behind this block of property in which a limited number of buses and cars might stand if necessary.
- (d) That Mr Heaps should prepare and submit a rough plan on the lines set out above which could subsequently be sent to Messrs Done, Hunter & Co as showing the Board's requirements.

#### **Ventilation of Tube Railways: Proposals for the Year 1938 Onwards on Existing Tube Lines**

Mr Robertson submitted a comprehensive memorandum reviewing in detail the present position in regard to the temperature in the tube railways and submitting particulars of the proposals which were under consideration for maintaining and improving this position. He recommended that, as a first step, a sum of £19,000 should be expended upon the work set out below:

- (a) Improvements at Tufnell Park and Maida Vale by installing new plant, and at Camden Town, Chalk Farm, Bank and London Bridge by new motors to speed up the present fans . £8,000.
- (b) Two refrigeration plants, one at Tottenham Court Road (mostly on the southbound) the other at Green Park (eastbound). £5,000
- (c) New combined ventilating fan and draught relief arrangements at Earl's Court and Caledonian Road. £3,000
- (d) "Atomised" water sprays at three stations: Trafalgar Square (northbound), Marylebone (southbound) and Old Street north and southbound. £500
- (e) Draught reduction by removal of panels from 39 footbridges. Other draught reduction measures at Tooting Broadway, Euston, Angel and Holloway Road. £2,500

It was decided to approve the works as set out above with the exception that one refrigeration plant only from the Karrier Engineering Company and one "atomised" water spray only should be installed, the total cost being thus reduced to approximately £16,200.

A Special Expenditure Requisition would be submitted for this amount.

### **MEETING No.196 HELD ON 24 JANUARY 1938**

**East London Railway; Provision for Cutting Current in Emergency**

**Special Expenditure Requisition No G 125**

Mr Robertson submitted a memorandum dated 21 January referring to the agreement which had been reached with the Southern Railway and the London & North Eastern Railway companies that tunnel telephone wires should be installed on the East London Railway and asking authority to extend the life for a further four months, Special Expenditure Requisition G125 which was approved by the Board on 5 November 1934. This was agreed.

#### **Wellington Sidings: Temporary Permanent Way Depot: Report on Tenders**

It is here recorded that on 17 January, Mr Robertson submitted a memorandum of the same date reporting that tenders for the construction of a temporary permanent way depot at Wellington Sidings had been received from the firms set out below and that the two lowest tenders had been examined and found correct:

John Bills  
Demolition & Construction Co. Ltd.  
W & C French

Patterson & Dickinson Ltd.  
Rigg & Remington Ltd.

In accordance with Mr Robertson's recommendation it was decided to accept the lowest tender, namely that submitted by W & C French Ltd amounting to £11,397, subject to negotiation, so as to secure a reduction in the time for completion.

#### **Lambeth North: Extension of Platform and Alterations to Crossover Tunnel: Contract**

It is here recorded for convenience that at a meeting held between the Vice-Chairman, Sir Harley Dalrymple Hay and Mr Robertson on 17 January, tenders were considered for the extension of the platform and alterations to the crossover tunnel at Lambeth North, which had been received from firms set out below:

Kinnear Moodie & Co.  
John Mowlem & Co. Ltd.  
Edmund Nuttall Sons & Co. Ltd.

In accordance with the recommendation submitted by Sir Harley Dalrymple Hay and Mr Robertson, it was decided to accept the lowest tender the lowest tender, namely that submitted by John Mowlem & Co Ltd amounting to £3,950, plus cost, the work being completed in seven months.

Sir Harley Dalrymple Hay said that as soon as sufficient experience had been obtained at Lambeth North, it was proposed to invite tenders for the lengthening of platforms at other stations on the Bakerloo Line in groups of stations.

#### **Baker Street Station: Notting Hill Gate Station: New Escalators**

Mr Graff Baker submitted a memorandum dated 14 January referring to the fact that it was standard practice that all escalators over 40ft rise should be of "MH" type but that for reasons of economy, it was proposed that the lower flight of escalators of 41ft 9ins rise at Baker Street station should be of "MY" type running at 120ft per minute. This was approved.

Mr Graff Baker also reported that he was considering a proposal that the middle flight of escalators at Notting Hill Gate station should be of "M" type. This proposal was not accepted and it was decided that the middle flight of escalators at Notting Hill Gate station should be of "MH" type.

#### **Uxbridge Station**

##### **(a) Proposed Temporary Entrances**

Mr Holden reported that it would be possible to open the new station at Uxbridge in October next with temporary entrances through Baker's Yard and Nash's Yard, as shown in red ink on signed drawing A 8612/178A which was submitted. Mr Holden also reported that this would involve starting the construction of the roof from the east instead of the west end with some small additional payment, approximately £50, to the contractors in respect of the use of London stock steel. It was decided:

- (i) To approve the proposal to open the new station at Uxbridge in October next with temporary entrances, as shown on the drawing,
- (ii) To approve the additional payment to the contractors in respect of the use of London stock steel.

##### **(b) Stained Glass Window**

Mr Holden submitted the design by Bossanyi for a stained glass window at Uxbridge. It was decided:

- (i) Not to approve the design submitted but that Mr Holden should send further examples of Bossanyi's work to the Vice-Chairman.
- (ii) That Mr J.P. Thomas ascertain and report the origin of the name "Uxbridge" and the name of the saint to whom the parish church is dedicated.

#### **Highgate (Archway) Station: Reversing Siding**

Mr Robertson submitted a memorandum dated 15 January recommending that the reversing siding at Highgate should be constructed to a length of 567ft to accommodate 9-car trains in place of 515ft as shown on the signed drawing at an additional estimated cost of £1,000. This was approved.

#### **Redbridge Station Plans**

Mr Holden submitted the under-mentioned drawings of Redbridge Station as revised:

Drawing No.		Drawing No.	
A 8521/10B	General Layout	A 8522/11	Staircase and Tower
A 9109/35A	Ticket Hall	A 8781/16	Platform

Mr Holden reported that the Consulting Engineers had advised that the columns on the platforms might not be necessary. It was decided to approve the scheme shown on the plans subject to:

- (a) The staircase being made wider so as to incorporate the Britannia window from the British Pavilion in the Paris Exhibition.

(b) The columns on the platform remaining or not as is cheaper.

Final drawings to be submitted for signature.

#### **Leyton Station: Track Layout**

Mr J.P. Thomas submitted a memorandum dated 20 January referring to the fact that Drawing No.E12329, showing the proposed track layout at Leyton station was previously approved by the Committee and reporting that subsequently the LNER had intimated that the working of Leyton goods yard would involve their having possession of the down main line through Leyton station for two hours each morning. It was therefore recommended that an electrified crossover should be provided between the Board's approach lines immediately west of the flat junction so that a down works train could run on the wrong road through Leyton station. The alteration was shown on the drawing and was approved.

#### **Highgate (LNER) Station: Tube Platforms**

Mr Robertson submitted a drawing showing the tube platforms and lower escalator landing at Highgate (LNER) station. It was decided to approve the arrangements shown on the drawing subject to:

- (a) Auto shops being placed in front of the side walls in the lower circulating area as indicated on the plan by the Vice-Chairman; one auto shop only remaining on each platform.
- (b) Seats being provided against the headwall of the escalator tunnel in the lower circulating area as indicated on the plan by the Vice-Chairman.
- (c) The seats and auto shops on the platforms being spaced evenly.

The drawing, revised in accordance with the above decisions, to be resubmitted for signature.

#### **Mill Hill (The Hale) Station**

Mr Heaps submitted Drawing No 5354B showing a temporary ticket hall north of the LNER tracks with a permanent bridge and staircases leading to the LNER platforms.

Mr J.P. Thomas reported that it was not possible to construct a permanent ticket hall at this time because of the possibility that it would be necessary to provide two additional tracks on the LMS through Mill Hill station should this line be electrified.

It was decided to approve in principle the scheme shown on Drawing No 5354B, subject to the proposed new subway under the LMS tracks being contained partly in a sunken channel to the level of the bridge over the LNER line. The ticket hall and other temporary works would be of wooden construction. A revised drawing would be submitted.

#### **Elstree Tunnel; Cast Iron Segments from Central and Bakerloo lines**

Mr Robertson submitted a memorandum dated 21 January recommending that the cast iron segments 11ft 8¼ins in diameter that would be released as a result of the lengthening of the platforms at stations on the Central and Bakerloo lines could be used for the two tunnels at Elstree at an estimated saving of £7,500 compared with the cost of buying new iron. It was noted that with packings the reassembled rings would give the following dimensions:

Height 11ft 11¼ins

Width 11ft 11½ins

It was further noted that it would be necessary to secure at short notice about an acre of land for storage of these iron segments. It was decided:

- (a) That the proposal to use the iron which is released from the Central and Bakerloo lines in the Elstree tunnels is very satisfactory this was subsequently approved.
- (b) That Mr Buller should arrange for the necessary land required to be available for the storage of iron.

#### **North Ealing Station**

Mr J.P. Thomas submitted a memorandum dated 7 January reporting that consideration had been given to the possibility of closing North Ealing station and giving figures of traffic dealt with at this station in recent years. For reasons set out in the memorandum, it was recommended that North Ealing station should be retained and to withdraw the present arrangements by which the Uxbridge trains do not stop at the station. It was decided:

- (a) That North Ealing station should be retained in its existing position and the non-stopping of Uxbridge trains should be withdrawn.
- (b) That the station should be renovated.

#### **Standards**

Various samples of standards in respect of the under-mentioned items of equipment had been arranged on the 10th floor of 55 Broadway and were inspected. Mr Robertson submitted a covering memorandum, dated 13 January.

##### **(a) Seats**

Three standard seats, as under were inspected:

"A" loose seat for use in ticket halls and on platforms but excluding tube tunnel platforms.

"B" bracket or fixed seat for tube tunnel platforms.

"C" fixed seat for waiting rooms and special purposes.

It was decided:

- (i) To approve the standards as set out above subject to an additional slat being placed in the back of the seat labelled "A" and to a revised contour in the seat labelled "C".
- (ii) That consideration should be given to the new wooden seats in the Royal Parks which are being provided by public subscription.

##### **(b) Colour of Paintwork**

Samples of standard colours of paintwork for stations were inspected. It was decided that these colours should be used at the next station to be redecorated. The Vice-Chairman stated that he would then inspect the station and review the colours.

(c) **Tiling**

Various arrangements for the tiling at tube stations were considered. It was decided:

(i) That the colour arrangements set out below should be used at the stations named:

**Acacia Road Station**

Brown EMD 533	(outer border)
Yellow E 4611	(inner border)
Cream 4604	(body)

**Bethnal Green Station**

Red FE 4268	(outer border)
Black E563	(inner border)
Cream 4604	(body)

**Swiss Cottage**

Brown EMD 533	(outer border)
Green E 4419	(inner border)
Cream 4664	(body)

- (ii) That the name of the line is included in the frieze, the letters to be white on a dark ground to provide contrast to the station name.
- (iii) That Mr Holden should submit recommendations for the colours of the tiling at the tube stations for which he is acting as architect, namely Highgate, Wanstead, Redbridge and Gants Hill.

(d) **Lamp-posts on Platforms**

Wooden models of two alternative designs of lamp-posts were inspected. It was decided that the spring line of the inner curve of the design of one should be raised, the alteration being made to the existing model which would then be reinspected.

## **MEETING No.197 HELD ON 31 JANUARY 1938**

### **Highgate (LNER) Station**

Mr Holden submitted a drawing showing the layout of the ticket hall at Highgate (LNER) station, revised in accordance with a decision made at the meeting held on 10 January.

Mr Holden suggested that the upper flight of escalators would be unsightly and that a more effective and no less efficient or economical scheme might be secured by constructing a shaft for high speed lifts between the upper level in Archway Road and the ticket hall under the LNER tracks as shown on the sketch submitted. It was agreed that the ideal scheme would have been for lifts to have run from the upper level through the LNER platforms down to the tube platforms but it was noted that the alignment of the platforms did not allow for this. It was decided:

- (a) That Mr J P Thomas, Mr Robertson and Mr Graff Baker should reconsider the layout of Highgate (LNER) station and that plans and a model should be prepared as quickly as possible on the following assumptions, if practicable:
- (i) Access to Archway Road to be by means of a gantry from the corner of the "Woodman" public house to lifts in a shaft immediately west of the LNER tracks.
- (ii) The lift shaft to be arranged so that the lifts can stop in the circulating area under the LNER tracks and at the level of the tube platforms (two sets of lifts in two shafts may make the best arrangements)
- (iii) A single escalator running in the direction of heavy traffic (or two single escalators in separate shafts if necessary) to be installed between the LNER platforms and the tube platforms for interchange traffic.
- (b) That any work at Highgate (LNER) station which may be affected by a scheme such as that outlined in (a) above must be temporarily suspended.

### **Leytonstone Station; Four Tracking**

Mr Robertson reported that the installation of four tracks at Leytonstone Station would necessitate the extension of the subway under the railway. It was decided that no work should be carried out at Leytonstone Station which would not allow the possible installation of four tracks in the future.

### **Mill Hill East Station Site**

Mr J.P. Thomas submitted a memorandum dated 28 January reporting that officers of the Board and the LNER had considered the desirability of altering the position of Mill Hill East Station to either Page Street or Dole Street but that, in the view of the dislocation which the proposal would cause to existing passenger traffic at the station and the remoteness of the two alternative sites from main roads, it was recommended that the present position of the station should be retained. It was decided:

- (a) That Mill Hill East Station should be retained in its present position.
- (b) That plans for improvements at Mill Hill East station should be prepared and submitted.

### **Aldenhams Station: General Layout**

Mr Robertson reported that Colonel Prescott, the Surveyor to Hertfordshire County Council, had examined the scheme for the general layout in the neighbourhood of Aldenhams and had raised points in regard to the occupation of the existing highway, levels and service roads.

Mr Robertson submitted a draft reply to Colonel Prescott which it was decided to approve subject to the concurrence of Mr Buller and it being made clear that the land required for the widening etc. of the highway would either be purchased by Hertfordshire County Council or else exchanged for an equivalent area of land surrendered to the Board.

**Woodford Station: Track Layout**

Mr J.P. Thomas submitted a memorandum dated 24 January referring to the fact that the proposals originally visualised for the service on the eastern extension provided for 32 trains per hour running to Leytonstone; 16 proceeding to Newbury Park where 8 would be turned, 8 proceeding to Loughton and 8 to Hainault. The track layout at Woodford shown on the signed drawing had been arranged on this basis.

It has now been suggested that it would be unwise in the first instance to run through trains to Hainault via Woodford since these trains might be required at a later date for development on the Loughton line and that it would be better therefore to provide a shuttle service between Woodford and Hainault.

If this view were accepted, the whole of the 16 trains per hour from London to Woodford could be projected in the first instance to Loughton or alternatively a reversing siding could be provided north of Woodford Station and half the service from London could be reversed at Woodford. The estimated cost of rearranging Woodford station for this latter purpose was £30,000.

The Vice-Chairman stated that it was likely that there would be considerable development at Chigwell and Grange Hill and that, in his view, it was desirable to provide for this development by a through service from London. It was decided that the original scheme should be adhered to, i.e. 8 through trains per hour proceeding via Woodford to Hainault but that any necessary modifications should be made to the proposed layout at Woodford so that the reversing siding shown on the drawing might be installed at a later date if required.

**Lancaster Gate and Queens Road: Escalator Schemes**

Mr J.P. Thomas submitted a memorandum dated 22 January reporting that the estimated cost of installing escalators at Lancaster Gate and Queens Road stations was £142,000 and £146,000 respectively and that the estimated cost of installing high speed lifts was £30,000 more at each station.

It was recommended in the memorandum that no action should be taken until the effect of the extensions of the Central Line is known. The recommendation was approved for submission to the Chairman's meeting.

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