
Secretariat memorandum

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Agenda item 10

TS013

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Northern line service improvements and future developments

1 Purpose of report

- 1.1. To advise members of the outcome for passengers of the revised Northern line timetable introduced in January 2008.
- 1.2. To assist members to consider possible questions to ask London Underground (LUL) in the event of proposals to split the Northern line.

2 Recommendation

- 2.1. That LUL be invited to make a presentation to London TravelWatch regarding its ideas for partial separation of the Northern line, and that scrutiny of such a presentation should be informed by the contents of this paper.

3 Background

- 3.1. At the meeting of the Board on 27 March 2007 ([Minute 16](#)) members discussed the possibly effects on passengers of the proposed changes to the Northern Line timetable. A year later, the Board received a report summarising the effects of the changes to date ([LTW 158](#)).
- 3.2. The Northern line was created in 1926 by an amalgam of two existing tube railways plus a new extension southwards to Morden. Between 1939 and 1941 extensions from Archway to High Barnet and Mill Hill East were opened, thus setting the line in its present form.



- 3.3. For convenience in this paper, the High Barnet / Mill Hill East branches will henceforth be referred to as the Barnet branch unless the context requires otherwise.
- 3.4. Service patterns have varied over the years. Peak services have always provided through trains between the two central area branches and the Morden, Edgware and Barnet branches. In the off-peak since the 1960s through trains have generally run from both Charing Cross and Bank to the Edgware and Barnet branches, and from Bank to Morden. Sometimes – as now - there have been no off-peak Charing Cross to Morden trains, and the off-peak Mill Hill East service now runs as a shuttle service from Finchley Central.
- 3.5. A high proportion of Charing Cross trains have always terminated at Kennington – even in the peaks, as there is a loop track there which enables them to do so without conflicting with Bank trains to and from Morden (see plan at Appendix 3).
- 3.6. The inter-working between branches has always made it difficult to operate a reliable service. A particular problem is that the distance between Camden Town and Kennington is longer via Bank than via Charing Cross – about 5 minutes extra running time. This means that trains run in one sequence through

the Camden junctions and then have to re-integrate in a different sequence at Kennington (and vice versa). As a result minor delays are more prone than on other lines to mushroom into something bigger, and once the service is disrupted it is more difficult to recover it back onto the timetable.

- 3.7. These features have resulted in the line having a bad reputation for erratic running, low frequencies (by tube standards) and overcrowding. The term “Misery Line” was coined during a particularly bad spell in the 1970s and – despite improvements – has been a stock in trade of a hostile press ever since.

4 The January 2008 timetable

- 4.1. In January 2008 LUL introduced a new timetable on the Northern line. It’s aims, in summary, were to improve performance by:

- Increasing some running times to reflect the realities of day to day performance.
- Likewise, slightly reducing the scheduled peak frequencies between Morden and Kennington and thereby to actually run slightly more trains.
- Reducing the ratio of peak Morden – Charing Cross through trains from about 1 in 4 to 1 in 5. This would increase the number of northbound am peak trains via Bank and thus ease passenger congestion at London Bridge.
- Increase the number of peak trains via Charing Cross – albeit with more starting / terminating at Kennington instead of running from / to Morden.
- As a by-product of these changes, segregate the northbound am peak contra-flow service so that between about 0700 and 1000 all Charing Cross trains would run to Edgware and all Bank trains to Barnet.

- 4.2. A general impression of the 2008 timetable, taken in conjunction with parallel initiatives such as improved train maintenance, is that the Northern line now operates better than at any time in the last 40 years. To quantify this view, LUL were asked to supply a detailed before and after performance report.

- 4.3. They have responded by saying that they don’t have a performance report as such, but they have supplied a note setting out the background to the change and the key benefits. They say that one of the main benefits is an average reduction in journey time of one minute across the line. This note is attached at Appendix 1

5 The line upgrade

- 5.1. As part of the line upgrade programme under the public private partnership, Tube Lines are currently equipping the Northern line with a new signalling and control system. This will enable automatic train operation to be introduced, allowing faster running and an increased service frequency. LUL state this will reduce journey times by 18% and increase capacity by 20%. The upgrade is due for completion in January 2012.

6 Advantages of splitting the Northern line – a perennial topic of discussion

- 6.1. Off and on over the years there has been speculation – never officially supported by LUL - that the Northern line would run a much better service if it was split into two separate lines. The location of train maintenance depots would most likely mean the two lines would be High Barnet / Mill Hill East – Morden via Bank, and Edgware – Kennington via Charing Cross. Removal of the inter-working through the junctions at Camden Town and Kennington would make it possible to schedule higher frequencies, minor delays would be less likely to escalate into significant disruption, and when disruption does occur it would be easier to recover the service back onto timetable.

7 Advantages of integrated operation

- 7.1. The advantage of operating the line as a single entity is that it provides flexibility when there are major incidents – a feature which is not enjoyed by any other LUL line. To understand this, let us take some examples –
- If a northbound Victoria line train stalls at Warren Street, then if it is not fixed after quite a short time (say 15 minutes) the service has to be suspended in both directions right across the central area between Highbury and Victoria (the nearest reversing crossovers). Failure to do this would result in all the trains being stuck at the south end of the line, leaving no service anywhere north of Victoria.
 - If a northbound Northern line train stalls at Warren St, then all that is needed is to suspend the northbound service between Charing Cross (where there is a reversing crossover) and Camden Town. Because a northbound route remains open via Bank, there is no problem of trains being stranded at one end of the line as trains which scheduled to run via Charing Cross can simply be diverted via Bank. Therefore southbound trains via Charing Cross can continue to operate.
 - Similarly, the ability to divert trains in any direction at Camden Town and Kennington and at virtually zero notice means that most of the line can keep running in the face of an incident on one of the branches.
- 7.2. The benefits of this feature of the Northern line are difficult to quantify, but must be huge. It is something which is rarely talked about, but which Northern line people simply take for granted.

8 Challenges in splitting the Northern line services

- 8.1. The main difficulty with the idea of splitting the Northern line services is the capacity and accessibility of the interchange passageways at Camden Town. Plans of Camden Town are attached at Appendix 2. From these it can be seen that the lines are on two levels – northbound above and southbound below – and the Edgware and Barnet branches converge in a V shape just north of the track junctions. Interchange is available by wide passageways towards the north ends of the platforms. These are step-free between the northbound

platforms, but southbound interchange involves 11 stairs up and then down again. These passageways are also the station entrance and exit routes and are busy for most of the day.

- 8.2. Shorter – but narrower - interchange passages are available at the south ends of the platforms. These involve short staircases and conflicting flows for both directions, so their capacity is limited.
- 8.3. A significant minority of passengers (exact number unknown) already change at Camden Town, in the hope of getting a quicker journey than by waiting for a through train to their destination. The interchange passages can cope with these, and of course those for whom stairs are a problem can simply decide to wait for a through train – for which the scheduled waiting time on the present timetable is rarely more than nine minutes and less than this for most of the day.
- 8.4. Occasionally, when the service is disrupted, the line control office implements a split service on an ad hoc basis, which means that (roundly) 50% of Edgware and Barnet branch passengers have to change at Camden Town. In terms of safety, the station can cope with this extra traffic, but it does become congested to a level which would not be acceptable as a permanent arrangement. Also, passengers with mobility problems have no choice in the matter and – as they move slowly – they are likely to be additionally stressed by having other passengers trying to hurry past them.
- 8.5. If the line were split permanently, it is unlikely that as many as 50% of Edgware and Barnet branch passengers would change at Camden Town, because would adopt alternative routes in accordance with their final destinations. For example, passengers to Tottenham Court Road might instead change to the Victoria line at Euston and go to Oxford Circus, or those for St. Paul's via Tottenham Court Road might go to Bank and change there. No doubt LUL could model the numbers likely to use alternative routes, and could maximise the number by use of appropriate publicity.
- 8.6. Nevertheless there would clearly be a big increase in interchange at Camden Town, with significant congestion at peak periods (which in this case are not just during the commuter peaks) and southbound passengers would have no option but to use stairs. These would be major issues for London TravelWatch.
 - 8.6.1 For several years LUL have had plans to reconstruct Camden Town station, which at booking hall, escalator and lower circulating areas is now so overcrowded at weekends that entry restrictions are imposed. These plans would also improve the interchange routes, and would provide lift access for all platforms. However the work would substantially change the area around the station, and would include a property development to assist with funding. The scale of the proposed works has resulted in refusal of planning permission, and LUL and LB Camden are currently working together on a revised scheme. There can be no certainty that this will be either acceptable or fundable. In any case it will be so complex that it will take 7 or more years to construct. It is therefore highly unlikely that the station could be upgraded to modern standards much before 2020. Whether the interchange routes could be improved more quickly by working independently of a big scheme is a question which would be worth asking.

- 8.7. Splitting the line would also compel all passengers between the Morden and Charing Cross branches to change at Kennington. A plan is attached at Appendix 3. From this it can be seen that this is much less of an issue than at Camden Town, because in both directions the platforms are parallel, there are several interchange passages and they are all short and step-free. In short, the interchange is as good or better than that provided by the several cross-platform interchanges between the Victoria line and other lines such as at Oxford Circus, Highbury and Finsbury Park.
- 8.8. The main issue at Kennington is that in the southbound direction – particularly in the pm peak and late at night (the “third peak”) – passengers alighting from a succession of terminating trains from Charing Cross may be faced with joining heavily crowded trains from Bank. It would be essential for London TravelWatch to be satisfied that the frequency – and therefore capacity – of Bank trains is sufficient to enable passengers from the Charing Cross branch to board at Kennington without delay.

9 Splitting the Northern line – the current position

- 9.1. As explained above, discussions about splitting the line have never been officially endorsed by LUL. However this position is now changing. Although they are not formally advocating a split, the line general manager – clearly with approval from the highest level – is actively encouraging stakeholders to consider the idea (or at least a variant of it) and has asked to give a presentation to London TravelWatch.
- 9.2. The thinking behind this is that after the present line upgrade has delivered a 20% capacity improvement in 2012, a further 20% increase could be achieved within a few years by splitting the line at Kennington only or – as LUL phrase it – by partial separation of the line.
- 9.3. From LUL’s point of view a big issue is that this would require the purchase of additional trains and creation of extra depot capacity to maintain them. These costs are not included in TfL’s business plan, and in the current financial situation it would need strong political support to obtain funding. This is why they are keen to present their ideas for consideration by stakeholders, and they have already started to talk to London boroughs at their liaison meetings.
- 9.4. It will be important that when LUL gives a presentation to London TravelWatch we are able to ask appropriate questions in order to understand the implications for passengers.

10 Partial separation of the line - suggested issues to consider on behalf of passengers

- Would full through running between the Charing Cross / Bank and Edgware / Barnet branches be retained all day, every day, or would these also be separated outside the peaks? Any separation of these services (apart from the present northbound am contra-peak separation) should be regarded as sufficient to trigger serious concerns about congestion and lack of step-free interchange at Camden Town.

- What would the proposed service frequencies be – on all sections of the line – compared with after the 2012 line upgrade but before partial separation?
- Would the frequency – and therefore capacity – of southbound Bank to Morden trains at Kennington be sufficient to enable passengers from the Charing Cross branch to board at Kennington without delay?
- What is really meant by 20% increase in capacity? Is it on every section of the line, or is just what would be achieved on the section which gained the most benefit?
- If 20% increase is to be provided on all or several sections of the line, what is the detailed explanation of how is this to be done? On the face of it, as partial separation would only affect the relatively small number of trains in the peaks (1 in 5), plus some at the extremes of the day, which presently run between Morden and Charing Cross, it is difficult to see how such a small change could produce such a large benefit (Detailed study of this issue might best be remitted to officer level.).
- Will signalling at Kennington be retained so that trains can run between Charing Cross and Morden at zero notice in emergency?
- Will all train drivers retain route knowledge of the entire line so that any train can be diverted onto any branch at zero notice, and thus retain the enormously beneficial flexibility which the present integrated Northern line enjoys when there are major incidents?



Northern line

Recent service changes

June 2009

- Historically the Northern line was one of London Underground's worst performing lines. This was a result of the combination of a number of factors, including tired and worn-out assets causing train and signal failures and the complexity of the design of the line and service pattern, which meant that when failures did occur they had a high impact.
- As a key north-south transport route through London the Northern line is the busiest Tube line on the network - with around one in every six journeys being made using the line. It carries over 200 million journeys per year (around 800,000 journeys per day) and has seen significant growth in demand over the past 3-4 years.
- In recent years this growth in demand led to increasing congestion on the line and the worsening of late running and delay as trains were no longer able to run to time due to the high numbers of customers boarding and alighting trains at some stations on the line.
- In response to these problems, and ahead of the upgrade of the line which will be delivered by the beginning of 2012, London Underground introduced some changes to the timetable early in 2008 in order to boost reliability and respond to increasing demand.
- These changes have led to a dramatic improvement in performance on the line and the Northern line is now one of our best performing lines. We are now consistently able to run trains to schedule and there is a reduced impact when failures do occur - with the capacity to recover much improved.
- There has been a 15% reduction in train delays and passenger journeys are now on average a minute shorter as a result. Congestion has also been reduced on some of the most overcrowded parts of the line. Through increasing capacity on the Bank branch by 10% in the morning peak, the severe overcrowding between London Bridge and Bank has been somewhat alleviated. Congestion at stations between Clapham and Stockwell has also been slightly ameliorated. Overall, platform wait time has decreased by 5% - in spite of increased demand.
- Following the re-negotiation of the train maintenance contract between Tube Lines and Alstom, fleet performance has also improved, with fewer train failures.
- Customer satisfaction has increased over and above the network average as a result of these changes.

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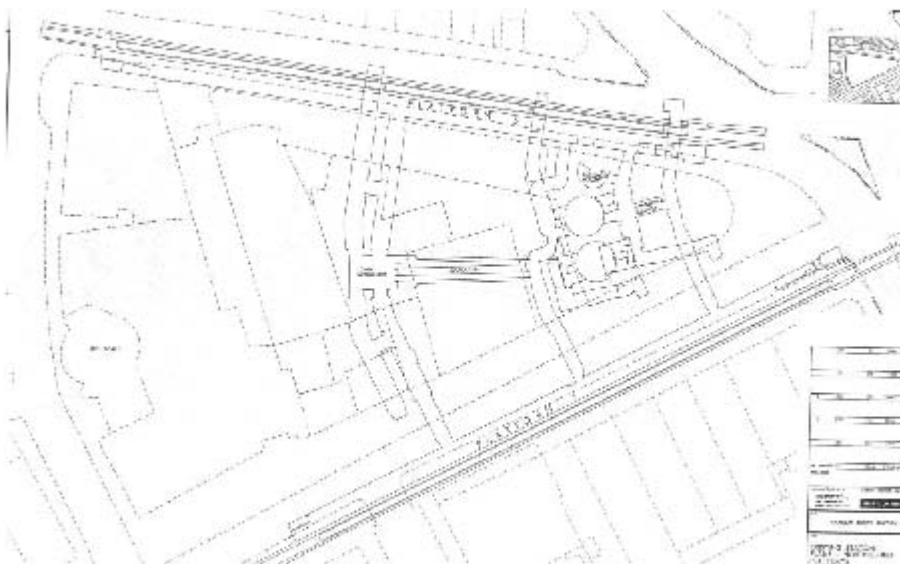
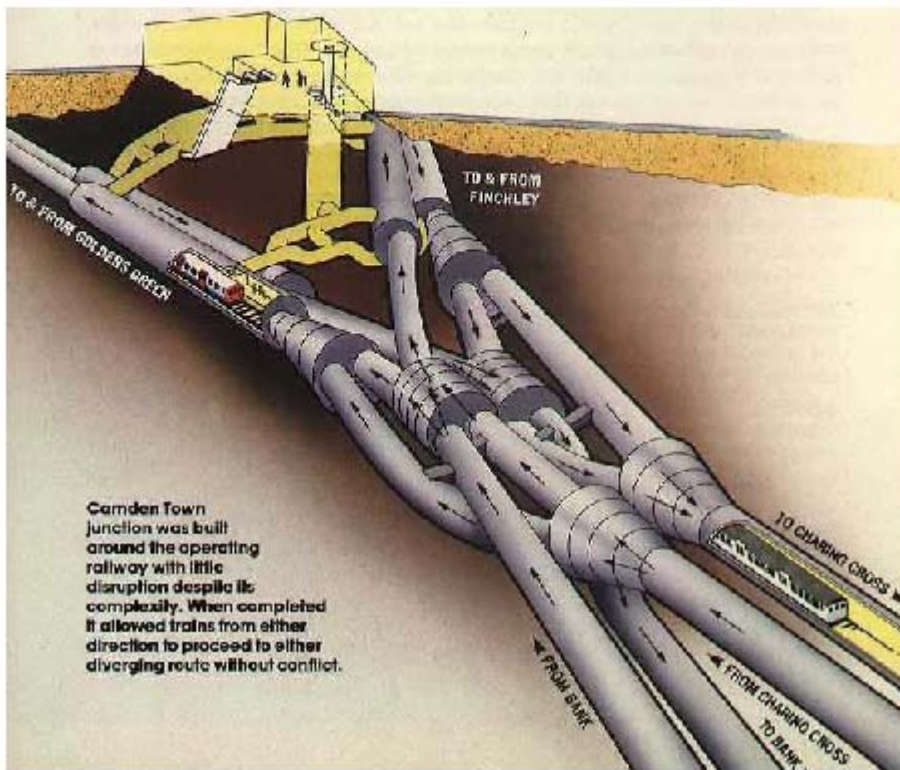
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a company controlled by a local
authority within the meaning of
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MAYOR OF LONDON

Appendix 2

Station and track layout at Camden Town



Appendix 3

Station and track layout at Kennington

