

NORTHERN LINE HEADING FOR A SPLIT

by John Hawkins

After over 80 years together, separation looks increasingly likely for the Northern Line's branches, a long held idea whose time may now have come. With a great need for a new north/south line to relieve the Northern Line City branch, the Piccadilly and Victoria lines, planning is underway for Crossrail 2 which it is hoped may provide relief within twenty years. But if the cost is anything like the £16 billion of Crossrail 1, then the plans may be as difficult to realise. Especially when the equivalent of another Northern Line branch can be provided within ten years for the cost of only the additional trains and stabling roads.

Currently the Northern Line south of Kennington has a peak service nearly 30 trains an hour, but north from there only around 20 trains an hour because of complexities of interworking services from both central area branches to both northern branches. This has been the situation since the two separate central area branches were linked in 1926, at a time when interworking of services was favoured to provide a wider choice of services to the public. This appears to remain Network Rail policy south of the Thames!

Today if the junctions at Camden Town were no longer used, the 30 trains an hour service could operate throughout the line, providing another 20 trains an hour through the central area, half as many again split between both branches.

Camden Town station currently blocks such a change since there would be a big increase in passengers changing for their final destination, the platforms are not close and there are limited interchange passageways. But a long held plan to reconstruct the station includes opening up the area between the platforms to provide large interchange concourses. After twice failing to gain approval, it seems that agreement has now been reached on a suitable scheme. If a start can be promptly made, it is possible that improved interchange will be available soon after the London Olympics.

Although many passengers may then need to change at Camden Town, they will enjoy less crowded travelling conditions with a 50% increase in service on all branches north from Kennington. The simplified service would also remove the cause of many current delays and subsequent cross-infection of disruption between branches, and with a more frequent service Mill Hill East through trains could be reinstated. Passengers who already change to other lines may just choose an interchange point on the other branch. Interchange with the Metropolitan Line is currently limited to King's Cross, but a potential link between Euston and the eastern end of Euston Square platforms offers an alternative route.

This service revision will be much like the transfer of the Stanmore branch to the Jubilee Line in 1979, which required around half of Bakerloo Line passengers to change their travel plans, a change accepted without too much complaint. In time passengers adjust their travel to new services. This could bring the long demanded major upgrade of Northern Line service performance.

TRANSPORT 2025

The TfL Transport 2025 report has a section on the proposed segregation of Northern Line services which was added after the first draft had been published. This suggests that the proposal has only recently been accepted for further study. It

considers (in 'Newspeak') "strategically recasting Northern Line service patterns to provide greater capacity on the north-south alignment through the City and West End using the existing infrastructure if junction capacity limitations can be overcome". This is seen as a further stage after the PPP line upgrade in 2011, which will not meet projected demand. Whilst no time scale is provided, it is costed within the Rail 2025 programme which will be completed by that date. Given the high benefits from low costs, I expect that this project will be commissioned as soon as possible, probably running on from the current line upgrade.

CAMDEN TOWN REDEVELOPMENT

Planning for a new station at Camden Town commenced in 1996, and major schemes were announced in both 2000 and 2002 to overcome the current capacity limitations which have resulted in closure to incoming passengers at busy periods for some years. However, these plans did not receive local council support. At the time it was claimed that already nearly a third of passengers using the station are changing platforms, presumably from south to north, or less likely from north to south. An understanding is now reported to have been reached between LU and Camden Council on an acceptable scheme, and the planning process must recommence. The previous scheme envisaged a two-year planning process followed by a two-year construction project to complete a temporary station north of the current ticket hall, with new low-level interchange concourses. With a prompt start to this process a new service pattern could be introduced from 2012 at the earliest. Completion of the final top station in a landmark development on the existing site, which pays for the new station, would be a further five years away.

LINE RESIGNALLING

The current Northern Line resignalling is planned for completion by late 2011, and will provide for a 2-minute interval service south of Kennington and a 2½ minute service north thereof. However, to accommodate a 2-minute service to all destinations would probably require further resignalling, involving modification to around half of the new equipment installed. It would appear sensible to ensure that the current resignalling will accommodate the more frequent service, since it could immediately help deal with incidents which result in closure of one branch, enabling more trains to be diverted to the other branch. Provision for a more frequent service would also aid service recovery after delays.

The new Highgate service control centre will be computer based, and so desks could be arranged to control segregated services separately. It is unlikely that services would in future interwork at any time, even during service disruption. Operation of the Jubilee and Bakerloo lines has been independent since 1979, although the track connections remain for stock transfers. With trouble north from Marylebone, Bakerloo Line trains are no longer turned at West Hampstead, something that would have been normal before the split. Similarly, with trouble at Bond Street or Green Park Jubilee Line trains are not diverted to reverse in London Road depot.

At Kennington the branches are linked by double-ended crossovers but, with now only 5 trains/hour scheduled in each direction during peak periods between Morden and Charing Cross, they make only 40 movements an hour. Interchange here is simply between adjoining platforms and many passengers must already take the first train and change there – it would be a minor matter to phase out the few remaining through trains. With service segregation the southbound crossover could even be removed, any stock transfer being made around the loop and over the northbound

crossover back into the siding or onto the line from Morden. Current signalling does not cater for such moves.

At Camden Town all junctions are south of the station, unlike the layout on the line diagram. The north and southbound are on different levels, with no flat junctions but the equivalent of scissors crossovers for both directions. There are eight sets of points, the Charing Cross branch having the southernmost junctions with the City branch junctions nearer Camden Town, so there are three sets of running tunnels between these two sites in both directions. This allows parallel running from/to either branch in each direction, with room to hold a train between the converging and diverging junctions to avoid delaying a following train. The original junctions from Charing Cross at this station were much closer to the platforms, so they must have been moved as part of the 1926 works. Does any sign of the original junctions remain?

Services normally alternate between branches with 20 trains per hour in each direction in peak periods. The points move for each train, giving 160 movements per hour at Camden Town, i.e. a point movement almost every 20 seconds. Don't ask how many in a day! In each move the points are unlocked, moved, locked and then proved in correct position. It is a wonder that there are not more points failures affecting the service. A split service will abolish all of these movements!

Will the connections be removed? The Bakerloo and Jubilee lines no longer interwork but the connections have been retained for engineers' train transfers. A segregated service will not use the eight points at Camden Town, so they could be removed with the Kennington northbound connection retained for stock transfers to the rest of the network. This would reduce maintenance costs and simplify track and signalling, reducing the chance of failures causing service delay. If a connection between Edgware and the City branch was preferred to a Kennington connection, it would require the retention of four points here rather than two on the loop.

CURRENT TIMETABLE

The January 2008 timetable introduced a first step towards separating the branch services by segregating northbound services until after the morning peak. At this time there are few travellers going out of town and the Camden Town interchange can cope with the flows. In consequence the number of point movements are halved, saving 80 point movements an hour with less chance of failures.

If this is successful, perhaps further periods of segregation may be tried, in the opposite direction in the evening peak, late in the day, or at weekends. However, a major split must await reconstruction of Camden Town lower station.

The traditional service split during service disruption, and now early morning, has Kennington loop trains serving the Edgware branch, with Morden trains serving High Barnet via the City. I don't know if passenger demand is biased in this way, but it has no historical basis since 'Hampstead Tube' trains always served the Archway branch too.

ADDITIONAL TRAINS

A more frequent service will require more trains. Allowing for spares, I calculate around 138 compared with the current 106, so where will the extra 32 trains be stabled? Back in 1979, with two train types with higher maintenance requirements and greater failure rates, there was a 20% spares holding requiring 8 more trains than today.

I calculate the Kennington – Edgware service will require 52 trains, which is around 5 more than the current stabling available at Edgware and Golders Green. A few extra sidings will therefore be required, with space probably to be found at Edgware. Golders Green would remain the maintenance depot.

The Morden-High Barnet service will need something like 86 trains, with current stabling roads at least 20 short. There will therefore be a need to recommission the south fan at Highgate together with Highgate Wood sidings. No doubt some additional roads could be squeezed in elsewhere to avoid stabling in platforms. Morden would become the major depot for the line.

The provision of additional stabling would not therefore require any expensive new construction. Additional trains will require extra staff, and it may be necessary to extend train crew accommodation.

Since the northern branches are similar in length, a split of Kennington – High Barnet and Morden – Edgware services would require very similar stock numbers and the same additional stabling on the High Barnet branch.

NEW TRAIN ORDER

Will another 32 trains of 1995 Tube Stock be constructed to run with the existing fleet, just as additional trains of 1996 stock were made for the Jubilee Line? I think this unlikely as there is now a newer design available with 2009 Tube Stock, and the Piccadilly Line 2012 Tube Stock is also being developed. With the pace of electronic developments, these newer designs promise improved performance and lower maintenance needs.

Following upon 2009 Tube Stock and S Stock, I think it likely that new stock will revert to 7-car formations with block trains. This allows around 5% longer trains that offer additional passenger accommodation at the cost of an additional car of equipment. Keeping trains in block formations avoids the incompatibility problems caused by trains turning on the Kennington loop.

If 32 new trains are purchased, one line will have a mixed fleet which requires a higher spares holding and a more complex maintenance regime. This has been avoided in recent years. But if a complete new fleet of trains is provided for one line, what use can be made of the existing modern trains?

The Morden – High Barnet service could be re-equipped with 86 new trains, releasing 54 of the existing trains. This is about the number required to replace 1972 Stock on the Bakerloo Line in 2018-20, allowing for an extension to Watford Junction. However, the longer cars of 1995 Stock would increase the gap at curved platforms such as those at Piccadilly Circus and Waterloo. Perhaps the 'gap filler' to be fitted to S Stock doorways could also overcome this problem. Some tight curves may also need to be opened out a little. If the 1995 Stock does serve the Bakerloo Line, then it will probably retain the Tube Lines' fitted Seltrac signalling system, rather than the Westinghouse system favoured by Metronet.

Alternatively, the Kennington – Edgware line could be re-equipped with only 52 new trains, leaving 20 spare 1995 Stock. By removing the trailers from 7 trains, these could provide 13 lengthened trains to boost the Jubilee Line service. The trains with trailers removed could release the Waterloo & City Line trains to boost the Central Line fleet, or replace 1938 Stock on the Isle of Wight. Else their fate could be the same as that of 1983 Stock.

Current Bombardier production of 2009 Stock followed by S Stock will take until autumn 2015. Piccadilly Line 2012 Stock production is required from 2012 to 2014, although an order is still awaited. Bakerloo Line replacement stock is not expected until 2018-20, so a production window exists from 2015 to 2018. At the rate of S Stock production, one every ten days, the additional 32 trains required for a split service would be available within a year, with the balance of trains within six months or eighteen months depending on order size.

NAME OF NEW LINES

How will the split service be presented to the travelling public? I expect that the Morden – High Barnet service, being the majority of the current Northern Line, will retain the name and black line colour to minimise resigning costs. This colour was used for the City & South London Railway from the first official colour map back in 1907, strengthening the case for its retention. If a name change is felt desirable to emphasise a new service pattern, then a return of Northern City Line (formerly used for what became the Highbury Branch, to avoid confusion with the Northern Line City Branch) with its link to the current name may be used, or else City Line for short.

Back in 1907 the Hampstead Tube used violet, a colour which was retained until the two lines amalgamated under the black colour. This violet remains available for the Kennington – Edgware service. It is similar to the dull mauve adopted for the Victoria Line in the early stages of construction, before it was felt unsuitable for the image of a new line. Perhaps it would be more suitable for this old line, being closer to the current black colour, and with a historical link to its early days.

As to a name for the Kennington – Edgware service, should it revert to the Hampstead Line, or maybe the Edgware Line? I am not in favour of lines being named after one station. I have helped visitors travelling on the Victoria Line who wonder why the train never arrives at that station: they have to be directed to a train travelling in the opposite direction! At least the Piccadilly Line serves Piccadilly Circus, rather than plain Piccadilly.

A manufactured name like Kenware Line may suit some people, but I would prefer the opportunity be taken to use a real name to honour a person with important historic links to the line or area. How about the Ashfield Line in honour of Lord Ashfield, a driving force behind the development of the Underground between the Wars, including both Edgware and Kennington extensions?