

SSR UPGRADE ON TRACK

by John Hawkins

The sub-surface railway upgrade is about more than new trains and signalling. It requires power upgrades and significant track modifications to allow for the planned more intense and faster services. Details are emerging of the track changes envisaged. New layouts may have to await commissioning of the new signalling system, as Stanmore platform 3 on the Jubilee Line has done, which on parts of the SSR could be as late as 2018. Although removal of crossovers, sidings etc. can be easily done, commissioning of replacement crossovers may have to await new signalling unless just a simple relocation is involved. In the meantime existing layouts may need to continue under the existing signalling until that is decommissioned. Recent changes at Whitechapel and West Ham were urgently required in connection with Crossrail construction and the Olympics, both of which provided funding. They are not typical of the envisaged changes.

Most current LU track layouts have remained significantly unchanged for a very long time. It was only with the PPP contracts that complex point and crossing layouts began to be renewed again, with higher speed turnouts being laid where possible to increase line speeds. Line capacity is usually limited by a few pinch points, such as those caused by severe speed restrictions over points and crossings.

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Track layouts out on the Amersham line mainly date from electrification, and are therefore about as old as the A stock, which is also due for replacement. At **Amersham** a new scissors crossing south of the station will allow Metropolitan Line trains to reverse in any platform, enabling the removal of both sidings north of the station. The middle platform will become bidirectional for Chiltern Railways trains to avoid any reversing train in the southbound platform blocking through trains. I have fond memories of those sidings back in the 1970s, when summers were always fine and Sunday services would layover for nearly an hour. With all doors open to allow the built-up heat to escape, crews would sit in a doorway with feet dangling, enjoying the country view and double-time pay! Weekend services were scheduled as training exercises for new timetables office staff, any inefficiencies only affecting one day of the week. With Amersham sidings to be removed, the chance for a photo of S Stock there will be limited!

Track simplification at **Chalfont & Latimer** involves removing the bay road, too short for S stock, and moving the Chesham junction further north, near where the branch diverges from the mainline. This removes the three-track section of line, and makes it a long walk from the station if required to secure points. However, it will shorten the single-line section a little, which might permit a slightly shorter service interval, or more likely allow additional recovery time from delays. The trailing crossover north of the station is also due for removal, preventing trains from being reversed short in the event of problems at Amersham, but perhaps the new signalling will allow trains to reverse on the single line whilst a train is at the Chesham end of the branch?

The only change reported at **Watford** is the removal of the first facing crossover which allows direct access to the south end of the siding on the right, access remaining from the north end of that siding. The crossover and sidings south of **Northwood** are due for removal, but a new trailing crossover is planned north of the station to permit trains to return south from the southbound platform, rather than departing south from the northbound platform as they do at present.

The crossings with moveable angles between the local and main lines south of **North Harrow** will be replaced with a ladder of facing crossovers to simplify the track layout. For the same reason, those south of **Harrow-on-the-Hill** will be replaced with two separate crossovers in each direction linking fast and local roads, with the same arrangement linking the northbound fast and down Chiltern lines. The trailing crossover north of the Chiltern platforms will be removed, perhaps being replaced by the second crossover of the link from the northbound fast line.

Out on the Uxbridge branch the facing crossover into **Uxbridge** sidings from Hillingdon is due for removal, a route that reduced pressure on Uxbridge station at peak times and provided a useful emergency reversing point. Simplification in the sidings probably includes removal of the northern reception road and the southern headshunt, together with No.37 road, the most northerly siding but one.

Rayners Lane is shown unchanged, unlike the 2013 promise of two longer sidings in the “TfL Investment Programme – London Underground 2010”.

Wembley Park will see the removal of its seldom used five sidings, although these were not long ago reconstructed. **Neasden depot** is undergoing substantial reconstruction, and the shed track layout can be expected to be modified, with the link between the shed fan and the yard fan being removed. The new layout at **Baker Street** has moved the scissors crossover north well into the tunnel, but the connections to the lengthened bay roads have moved closer to the station, allowing both loop roads to be removed but leaving bi-directional running for some distance on both roads. This must surely affect track capacity.

Over the C Stock network of lines, track modifications are required to accommodate the S7 fleet, which are about a car and a half longer than the current C Stock trains. At **Hammersmith depot** this will require the lengthening of the two eastern shed roads, and the replacement of the two western roads in the short shed by a single road. Direct access to the depot from the westbound line will also be removed, so that trains will need to shunt via the platforms. This will prevent passengers being taken into the depot unintentionally, as has happened from time to time! The crossovers north of the station are to be replaced by a scissors crossing. The unsignalled crossover at **Royal Oak** is to be moved to the west of **Paddington (Suburban)**, and presumably will be signalled. The layout at **Edgware Road** will be substantially realigned, with the western pointwork moving into the tunnel mouth. One siding is expected to remain.

At **King’s Cross** the hand-worked points by the erstwhile centre platform will go, as will the trailing crossover to the east of the station. A new scissors crossover west of the station will improve reversing capacity during service disruption. At **Farringdon** the current layout will be removed, including the trailing crossover in the platform area and the three short sidings. In their place a new double track junction will link with the former City Widened Lines to provide stabling accommodation through to Moorgate. It is currently suggested that the junction lines will merge in the tunnel mouth before again splitting for two tracks through to **Moorgate**, where they will again join with only the western platform track being relaid. Such a layout more than halves the points required if scissors crossovers were to be laid at both ends to provide the same flexibility. This layout could be used for emergency service reversal east to west, but almost certainly not as an alternative routing for passengers. It is believed that this would be the first four-rail electrification through the route since 1926, when some eastbound Metropolitan Line trains last joined the City Widened Lines west of King’s Cross, but westbound trains rejoined their own line just west of Farringdon. That came to an end in 1935 in the then new LTPB’s rationalisation of services. However, the Farringdon to Moorgate route will be in demand for Crossrail worksites until 2019, so this track is unlikely to be relaid in the near future.

The trailing crossovers at both **Moorgate** and **Liverpool Street** are due to be removed, to be replaced by a scissors crossover between the two stations to again improve emergency reversing capacity. At **Aldgate** a substantial realignment of the junction is planned, with the removal of the reversal route from the outer rail platform 1, and of the direct route into platform 2 so that those trains will need to enter by the route they now use to depart.

THE SSR SOUTH

Upminster Depot is expected to be subject to major modifications to accommodate the new trains. The wheel lathe road has to be extended. The short shed will be extended forward, with the loss of a short road but the extension of the two current roads. Realignment of the current shed roads will result in the loss of two roads, but a new fan of tracks north of the sheds will provide an additional nine roads. The **Hornchurch** trailing crossover is expected to be removed.

At **Barking** the points from the eastbound into the bay road and also into the sidings are to be relaid for higher speeds, and the trailing crossover from **East Ham** is to be moved to Barking to allow direct reversal from the eastbound platform. Surprisingly, the awkward bay platform at **Plaistow** is to remain, despite the flexible new West Ham centre siding layout, which is also effectively a scissors crossover, although the **Bromley-by-Bow** trailing crossover is to be removed. Perhaps Plaistow will provide additional reversing capacity for Olympic crowds, but it suits neither continuing eastbound travellers or westbound passengers, and blocks both roads when trains depart. The same problems remain at **Dagenham East**, where the little used siding will also remain.

Whitechapel is to become a single (wide) island platform layout, with trailing crossovers at either end, one replacing that currently at **Aldgate East**. A surprise is the proposal to open up the bay road at **Tower Hill** to provide a layout similar to West Ham, but with reduced flexibility due to the platforms

being in the three-track section. It would be good if the wider bay platform could become the usual eastbound route during heavy passenger traffic, although this could not happen whilst service reversal was scheduled. Reversing trains will no longer have to crawl into the platform as they approach the end of the line. This contrasts with the abolition of the centre bay road at **Mansion House**, which becomes the eastbound line, allowing the current eastbound platform to be abandoned. The station will be left with plain track either side of the broad island platform.

The trailing crossovers at **Embankment**, **South Kensington** and **Gloucester Road** (Circle Line) are to be removed, with a new scissors crossover provided between Embankment and Westminster. The westbound link from the Circle to the District Line immediately west of Gloucester Road will also be removed, ensuring that each line uses its own platform.

At **High Street Kensington** the links between the District and Circle lines, together with the crossover into platform 3 are to be substantially realigned for higher speed working. Interestingly, the crossover out of platform 4 together with the westbound District line track are to be removed, so that trains reversing in both platforms 3 and 4 must return on the eastbound line until the entrance to **Triangle Sidings**, where the existing trailing crossover will enable them to regain the westbound line. Relaying of the sidings has resulted in the loss of the outer of the two eastbound sidings, and the loss of two of the four westbound sidings, one of which was unelectrified.

At **Earl's Court** the only change proposed is the replacement of the facing crossover on the eastbound lines west of the platforms with a scissors crossover, again allowing trains from Wimbledon to use either platform. This route was removed during the last resignalling of the area in the 1960s. On that branch the existing trailing crossovers at **Parsons Green**, **Putney Bridge** and **East Putney** are all due for removal. In their place a scissors crossover is planned 'south' of Parsons Green alongside the sidings. The cynical may think that this provides for full service reversal when the proposed Chelsea – Hackney Line takes over the branch service south of this point. At Putney Bridge the existing westbound track will be abandoned, with all trains routed through the short bay road, which will be extended through to the westbound line. This location will therefore see a major change, becoming a two-platform station with plain track throughout.

The crossover at **West Kensington** is to be realigned further west, clear of the platforms. At **Acton Town** the direct connection into "the Works" headshunt is to be removed, requiring all trains to shunt from the westbound local platform instead. **Ealing Common Depot** sees some roads relaid, with the loss of two shed roads, whilst **Ealing Broadway** sees the removal of the three sidings that once provided access to the Central line before the Ruislip siding link was built.

I suppose that the removal of crossovers avoids additional resignalling complications and costs, and avoids more possibilities for failures, but loses the additional service flexibility that crossovers provide. The questions to be asked are "how often are they used" and "what alternatives are available?".

Where proposed track layouts must await the new signalling system, this could be as late as 2018. The resignalling programme has yet to be released, but is expected to work towards the District Line, which will therefore have the last sites to be renewed.