

NEWS AND NOTES

55 BROADWAY

1972 STOCK RVAR MODS



Above: A new view of 55 Broadway at St. James's Park, made possible by the demolition of the old Scotland Yard buildings and creation of a new pedestrian space across the middle of the site.

Photo: Antony Badsey-Ellis

The first unit with RVAR mods is now in service on the Bakerloo Line, showing grab rails by the doors on 1972 MkII Tube Stock DM 3534 (Above, Right) and the wheelchair seating bay on adjacent trailer 4534.

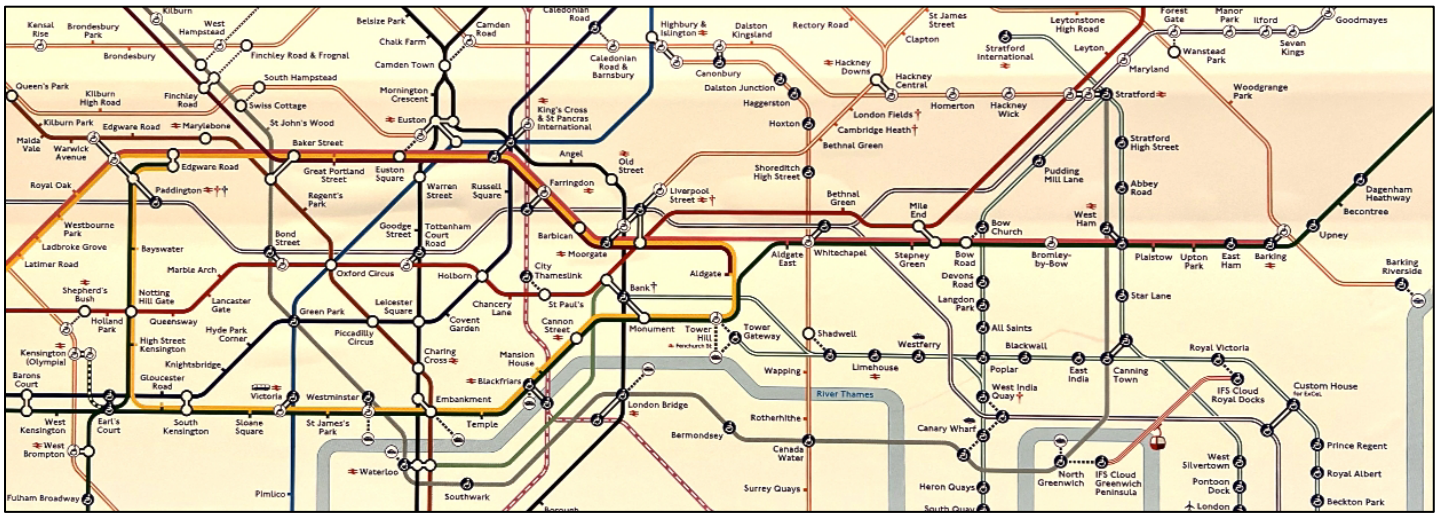


Photos: George Odlum (Top) and Jamie Marquis (Above)

S STOCK NEW CENTRAL AREA MAPS

After the opening of Bond Street (Crossrail) on 24 October 2022, followed by partial through services from 6 November 2022, most interior central area maps in trains were soon altered. One exception was on S Stock, but new maps were finally seen on 5 December 2022 (Opposite, Top).

Photo: Colin Smith



EARL'S COURT DEVELOPMENT



Above: An aerial view of the 'V'-shaped Earl's Court site. The District Line tunnel entrance at Earl's Court is right of centre at the bottom of the photo. Just to the right of the line of houses curving left is the alignment of the Wimbledon branch (underground) towards West Brompton. To the left of the line of houses curving right is the alignment of the Ealing/Richmond/Olympia branches (underground) towards West Kensington. The West London Line cuts across in the centre of the photo. Right of centre is Lillie Bridge Depot and left of centre is the Empress State Building.

Photo: Transport for London / Delancy

The Earl's Court site is London's largest cleared Zone 1 development site and comprises c.40 acres of land that formally housed the Earl's Court Exhibition Centres. Lillie Bridge Depot will be leased back to TfL at peppercorn rent and will continue to be an operational site while functions undertaken there are assessed for relocation. The whole Earl's Court plot will be used as a regeneration scheme to support local housing needs and create long-term income for TfL, re-using and building on the remaining parts of one of the original Lillie Bridge Depot buildings. A masterplan for the redevelopment of the site is to be launched early in 2023 and the hope is that it will be possible to relocate activities undertaken on the depot to unlock significant operational benefits for TfL. (*Options for relocation have already been mentioned in a previous issue of Underground News*).

MORE UNDERGROUND STATIONS OFFERING HIGH-SPEED MOBILE COVERAGE

A further six London Underground stations will begin offering high-speed mobile coverage to passengers, as the next stage of Transport for London and BAI Communications' (BAI) project to bring coverage to the Underground network gathers speed.

Passengers travelling between Holland Park and Queensway on the Central Line, will start to see 4G and 5G-ready mobile coverage from 21 December 2022, with coverage between Kentish Town and Archway on the Northern Line going live in the coming week. Coverage will be in ticket halls and platforms, as well as in tunnels between those stations, allowing passengers to get the latest travel information, access social media, check their emails, make calls, and stream videos whilst on the move underground.

All four mobile network operators – Three UK, EE, Vodafone, and Virgin Media O2 (VMO2) – are taking part in the rollout, with passengers on EE and Vodafone able to access coverage from 21 December and passengers on Three UK and VMO2 gaining access in the new year. Connecting these six stations marks the next milestone in the introduction of high-speed mobile coverage across the entire Underground network. Together with the existing 4G service on the eastern section of the Jubilee Line between Westminster and Canning Town, which was made permanent in April 2022, around ten per cent of Underground stations with platforms that are underground, and therefore usually unable to get a mobile signal, will be providing 4G and 5G-ready coverage.

Once fully delivered, more than 2,000 kilometres of cabling, as well as thousands of radios, are expected to be installed within tunnels and stations, all of which will be fitted outside of operational hours. Around 500 people are working overnight across the Underground network to install mobile equipment, with all works needed to be tidied away before the network opens for passengers every morning.

During the Christmas Holiday period, further testing is taking place at some of London's busiest stations, including Oxford Circus, Tottenham Court Road and Camden Town, to allow mobile coverage to start at those stations in the new year. Once live, this will also help the millions of visitors who come to the West End every year to better navigate the capital, make reservations on the move and ensure they can share their experience of London with friends and family. By the end of 2024, all Underground stations, as well as the Elizabeth Line, will have 4G and 5G-ready coverage.

(Source: TfL Press Release 22.12.22)

UNDERGROUND ROUND UP

Compiled by John Hawkins

ELIZABETH LINE COMMITTEE MEETING – 24 NOVEMBER 2022

On rolling stock, the first of the three remaining seven-car class 345 trains was withdrawn from service on 31 October for conversion to a nine-car Full Length Unit (FLU). All seven-car trains will have been converted by mid-December, at which point the Elizabeth Line will be running a homogeneous fleet of 70 FLUs. *Editor's note on 11.11.22 – 064 almost completed, return to service predicted for 14.11.22. 042 now a 9-car set but midway through testing/mods etc. Completion target date 21.11.22. 056 Stopped on depot, start conversion to 9 cars on 14.11.22 with a target date of 28.11.22 for completion.*

LU NOISE COMPLAINTS

A report to the TfL Customer Service and Operational Performance Panel meeting on 6 December 2022 provides an update on LU noise problems for both neighbours, passengers and drivers. Rail roughness or corrugation, caused by repeated acceleration or braking at the same place, takes two forms: longwave is more prevalent on lines with auto-train operation and tends to irritate neighbours; shortwave tends to bother customers and drivers in tunnels. Residents also complain about impulsive noise caused by trains passing over insulated rail joints, points and crossings, moving sleepers, and rail defects. Rail grinding is the most effective tool to remove corrugation, the principal cause of noise, but must be repeated every six months to yearly. In the last year, over 30,000m of noise-related rail grinding has been undertaken.

Pandrol Vanguard, a resilient track fastening, was introduced in response to concerns over in-residence noise in 2016 ahead of Night Tube. This was effective in reducing residential noise but unfortunately increased-tunnel noise by trapping energy from the trains and causing corrugation to form on rails more quickly. TfL are working on alternative solutions, including trialling new products, and the use of rail grinding to address corrugations. Following a successful trial on the Jubilee Line between Baker Street

and St. John's Wood, TfL are now rolling out an alternative product (Delkor) at selected locations. This is effective, but very slow and costs £8,200 per metre with 6.7km replacement costing around £59.9m. An alternative being trialled is to remove the Pandrol Vanguard 'clips' (technically the clips are an integrated baseplate/fastening system) and re-rail followed by grinding, to go back to how the track was pre-Pandrol Vanguard and reduce corrugation build up.

A trial is also taking place of softer resilient rubber pads under the rails, helping to absorb energy from the passage of trains, together with grinding. On the Jubilee Line Extension, a trial is taking place of low-level reservoirs at noise sites where screeching is caused by wheels rubbing against rails. Also on the Jubilee Line, an on-train lubrication system is being trialled to minimise screeching noise in airborne sections. Altering or reducing speeds on automatic operation lines may help, but with an impact on service levels. The Northern Line has been chosen for the trial.

There is wide communications and stakeholder engagement. The Noise and Vibration Steering Group has a monthly internal meeting of engineering and stakeholder representatives to review complaints and hotspots. Frequent answers are drafted on the mayor's behalf to questions about noise from Assembly Members as part of Mayor's Question Time. Six-monthly updates are issued to London Assembly members on noise hotspots and mitigation plans. The Customer Contact Centre has dedicated representatives to handle noise complaint issues, and provide best quality information. TfL frequently attend meetings with residents and elected representatives to discuss noise concerns in specific areas. A Government Relations team Single Point of Contact for all London MPs and Assembly Members ensures that questions are handled in a timely and efficient manner.

TRAIN FLEETS MAINTENANCE

Victoria Line: Work continues on upgrading the pressurised ventilation fan system, with 28 of 47 trains completed. Delivery of coupler overhauls continues, with 24 of 47 completed. Door overhauls started in June 2022 and four trains have completed their phase one works.

Metropolitan Line: 18 out of 60 trains' bogie overhauls delivered. Work has progressed on increasing the time in service prior to overhauls which will enable delivery rate optimisation towards the end of the financial year.

District Line: Work continues to prepare for start of bogie overhaul, to follow directly after the Metropolitan line overhaul work.

Jubilee Line: The first phase of the overhaul programme continues to plan and the second more significant phase, including bogie overhaul, started at the end of August 2022. The project has supported mitigations needed to keep trains in operation until heavy overhaul takes place. Due diligence is progressing as part of preparations for invitation to tender for reliability works.

Tenders have been called for the modification of the 63 seven-car trains on the Jubilee Line to provide a long-term solution to fatigue cracking. Fractures were found on the longitudinal beams of underframes in 2019, and a large number of the trains had to be withdrawn until the implementation of a temporary repair which is now approaching the end of its life. The first of the contracts being tendered cover replacement of the cross-beam support brackets to improve the transfer of coupler loads into the car body structure, and changes to the inner longitude to remove the risk of continued crack propagation. A second contract will cover the replacement of the coupler release system to ensure it will function correctly in a collision and to eliminate costly maintenance requirements.

Piccadilly Line: LU have completed 98% of floor modification, as part of life extension works, and this will be fully complete by January 2023. There has been some disruption to wheel and motor overhauls owing to supply chain issues, but recovery is anticipated by the end of March 2023. LU have now completed 45% of the second lift cycle to take the fleet to the end of its operational life.

Central Line: The large-scale renewals programme continues to progress. LU have identified a fix for minor integration issues identified earlier for the prototype trains and are working through a schedule for introduction with the suppliers. Hardware design including CCTV is now completed and can move into procurement for these elements. LU are preparing for production readiness as designs have progressively been signed off and training undertaken. TfL transferred the prototype trains into the new facility at Acton for further works whilst another train was being prepared for conditional assessment to support the programme lift. LU also pulled forward critical doors overhaul items and started technical review to overhaul seats. The next major milestone is the completion of the final design review and sign off, which is expected to be achieved before the end of 2022.

Bakerloo Line: Work has continued on ongoing heavy overhaul activities. There has been some disruption to materials supply due to challenges with suppliers, but this is expected to be recovered by the end of the financial year. Fitting new LED lighting on 10 of 36 Bakerloo Line trains was completed at the end of September as planned. It is expected to complete the full fleet in the 2024 calendar year.

Bakerloo, Central and Waterloo & City lines (accessibility): A programme of works critical to improving accessibility continues. Passenger information prototype system testing for the Bakerloo Line fleet is progressing, and materials have been procured for the next train installation at Stonebridge Park. LU have procured passenger information systems, wheelchair units and flooring kits for the Central Line fleet after completing prototype tests.

[sourced from TfL Investment programme report 26 June 2022 – 17 September 2022]

SUICIDE PREVENTION PROGRAMME

Since 2018, a Suicide Prevention Programme has helped reduce the number of suicides by 45 per cent across the Underground network. [TfL Commissioner's report – December 2022]

SOUTH HARROW PROGRESS

In November 2022, work completed on the delivery of the DC cabling required to connect the new sidings at South Harrow with the substation at Sudbury Hill. In total, the team has now delivered and installed 8.2km of DC cabling and 1.4km of AC cabling. This supports the key milestone to bring all 12 sidings at South Harrow into use in February 2023. [TfL Commissioner's report – December 2022]

TfL 2023 BUSINESS PLAN TO 2025/26

This is the first business plan published by TfL since 2019, due to funding uncertainty. The Chief Financial Officer says, "The improvement in passenger demand, which increased from around 25% of pre-pandemic levels at the start of 2021/22 to around 80% by the end of October 2022, is the financial foundation for this Business Plan". TfL's financial report to 15 October 2022 showed LU demand now at 82%. The Interim Commissioner's foreword states "Firstly, we must win our customers back", and yet the business strategy only aims to increase passenger demand to 86% on LU and rail by 2025/26 (excluding the Elizabeth Line). TfL will largely maintain the overall volume of service operated on its networks, whilst ensuring services match the changing needs of customers. The Interim Commissioner's foreword says, "we need to ensure that the factory in Goole in Yorkshire, which will be building the new Piccadilly Line trains, can continue operation, building new trains to replace the ageing fleets on the Bakerloo and Central lines". The Business Plan includes new Bakerloo and Piccadilly Line trains, ordered new DLR trains, replacement of the original tram fleet, and new signalling on the Bakerloo and Piccadilly lines, subject to long-term certainty on Government funding. It also includes work to upgrade Elephant & Castle station.

Investment in additional rail capacity has been deprioritised to align with recent demand forecasts, which show excess public transport capacity in the medium term. An exception is for programmes that are fully funded by third parties, for example where additional public transport capacity is required to unlock new housing. TfL will continue feasibility work on the DLR extension to Thamesmead, Bakerloo Line Extension (now assumed to commence in the 2030s), West London Orbital, and Crossrail 2 (which may not commence within 20 years). However, any network extensions depend upon securing additional funding since the significant capital requirement is not affordable from operating revenue alone.

An accompanying TfL Capital Strategy 2023 confirms that over the coming 20 years, all LU fleets, apart from the sub-surface and Victoria Line fleets, will need replacement in addition to more recent DLR vehicles and London trams. Signalling includes a replacement system for the Piccadilly Line by the early 2030s, replacement of Bakerloo Line signalling, and incremental replacement projects across the Central Line and DLR. The TfL Climate Budget states that energy usage and emissions from rail modes could be reduced through further improving traction efficiency, which could include measures such as regenerative braking, energy storage and 'green CBTC' (where driving style is designed to minimise energy usage).

TfL INVESTMENT PROGRAMME REPORT 26 JUNE – 17 SEPTEMBER 2022

DLR new rolling stock manufacture in Spain continues to plan with four trains completed and on their test track before delivery of the first two trains to Beckton in early 2023. TfL anticipate having completed the manufacture of 12 trains by the end of March 2023. At Beckton, work on the northern sidings and sub-station continues, to be commissioned in late 2022. Tenders have been returned for the

maintenance facility building and additional southern sidings, and contract award is expected later in 2022/23.

Assembly of the first new Piccadilly Line train continues to plan, with the third of nine cars now assembled with two further cars now in body build. TfL remain on plan to deliver the first train fully assembled for testing at Siemens' test track in summer 2023. The new trains are now expected to begin entering service from summer 2025.

PROGRAMMES AND INVESTMENT COMMITTEE MEETING 14 DECEMBER 2022

STATION ENHANCEMENTS

At **Paddington** Bakerloo Line, the two step-free access lift installations are under way, and work continues on the fit out of the new areas of the station entrance. The final structural works to tie the old ticket hall to the new one are due to complete around the end of December 2022. The project is expecting to open in mid-2023, with testing and commissioning of the enhanced and step-free entrance to begin in early 2023.

Detailed design is completed for a new station building at **Colindale** with increased capacity and step free access. The project is ready for a construction phase, but currently paused pending availability of funding. This project was included in the GLA's Levelling Up Fund bid, to deliver the build phase with a decision expected soon.

Negotiations are nearly finished at **King's Cross St. Pancras** on a development agreement to secure a developer-funded scheme to upgrade the entrances on the south side of Euston Road, as part of a wider redevelopment of the area. The scheme unlocks a LU retail opportunity to mitigate any increase in operational cost as a result of a new lift in place between the street and station.

The new Brompton Road entrance at **Knightsbridge** is now open whilst the new Hooper's Court entrance, connecting passageways and providing two lifts, is still under construction. The project remains on target to open this new entrance and provide step-free access in summer 2023.

At **Leyton**, TfL continue to work closely with the London Borough of Waltham Forest to develop plans for a new ticket hall, with the aim of increasing capacity and providing step-free access. The £500,000 grant from the GLA has enabled the project to progress the concept design towards completion soon, to undertake value engineering reviews and construction planning workshops. Following completion of the concept design, the project will be paused until additional funding is secured. This project was included within the GLA's Levelling Up Fund bid *Transforming Colindale and Leyton for All*. The London Borough of Waltham Forest also submitted a Levelling Up Fund bid which included a request for Leyton station, reaffirming its commitment to progress this project. A decision is expected soon.

TfL are working with a third-party developer to open a new Borough High Street entrance at **London Bridge**. This would result in reduced journey times and congestion at street level, especially on Borough High Street itself. The next phase of the design will begin once the developer has secured planning consent.

TfL are working with the developer Berkeley Homes on a new ticket hall at **West Ham** to serve the Twelve Trees Park housing development to the south-west of the station. The main construction works associated with the new entrance are progressing well, with the construction of the main abutment walls, which will support the bridge deck over the Jubilee Line, now complete. The new footbridge just to the north of the station was lifted into place on 19 June 2022.

At **Waterloo**, as part of a wider redevelopment scheme that will see Elizabeth House demolished, TfL are progressing agreements to ensure step-free access to the Northern Line platforms is secured. This would involve constructing shaft structures and connections to the northbound platforms during the progression of the development works. This will enable the future fit-out of the shaft after the development, subject to future affordability.

A new south-western entrance is planned to open at **Stratford** in early 2024. It is a collaborative venture between the London Legacy Development Corporation, London Borough of Newham and the GLA, which are fully funding the capital works. Detailed design is under way, alongside preparation for construction to begin on site in early 2023.

(Sourced from TfL Investment programme report 26 June 2022 – 17 September 2022)