UNDERGROUND ITEMS FROM THE TELEVISION
AN OCCASIONAL SERIES

by Paul Raven-Hill

"SECRETS OF THE LONDON UNDERGROUND" – Series 2 – Yesterday Channel

This is the second series of "Secrets of the London Underground", presented again by Tim Dunn and Siddy Holloway. This new series comprised ten parts as against six parts of the first series. The original broadcast dates and times are noted below, but were repeated one hour later on Yesterday+1 and Friday and Sunday evenings.

EPISODE 1 – THURSDAY 5 MAY 2022 AT 20.00

In Episode 1 of the new series, they saw how the modern Underground functions, while at the LT Museum's Acton Depot, they root through the archives, unveiling documents, photographs, films, and artefacts that have never been seen before. Tim and Siddy also explored the disused Jubilee Line areas of Charing Cross station, now more famous as a film location, and walk down the service tunnels that were dug under Trafalgar Square to help with the Jubilee Line's construction.

Tim's introduction was made aboard the 1983 (Batch II) DM in the Depot. He showed an identification plate with a "Fleet Line" name, which it was claimed was the only LTM artefact to have the Fleet Line name on it *(I couldn't say whether or not that was true)*. He then explained the development of Charing Cross and its various former names when there were separate stations – "Charing Cross" (Northern), "Trafalgar Square" (Bakerloo) and "Charing Cross", now "Embankment" (Circle/District).

The Jubilee Line was originally named the Fleet Line, as it was intended to extend it in several phases towards and beyond Aldwych, under the river to Lewisham, which never happened. The Fleet (later Jubilee) Line opened in April 1979 and the original headboard for the opening train was shown, having been found in Neasden Depot, and now in the LTM Depot. Tim gave a brief history.

On entering the now non-operational Charing Cross Jubilee Line station, it was clear to see that the platform and tunnels are very much in existence and in a good state of repair. The line diagrams dated from its opening from Charing Cross to Stanmore. The area was used as a film location, such as the James Bond film "Skyfall", and Tim spoke to Kate Reston of the TfL Film Office, who remarked that it cost about £4,000 per hour to hire the station as a film set. Equipment was often brought in by train (out of operational hours). All of the proceeds were ploughed back into funding upgrades and improvements to the LU network. The platforms were frequently used for trials of innovative equipment, such as the "Harrington Humps" to allow level access for mobility impaired persons to at least one car per train, which had been rolled out across the network. Other experiments had not been successful and were not developed, such as luminous platform edge strips, which would light up in the event of a power outage. Charing Cross (Jubilee) was also used for emergency reversing of trains south to north, in the event of any line closure east of Green Park on the extension, once passengers had been detrained there.

They next looked at the tunnel construction methods. Tim then spoke to Roy Kenneth, an LU Emergency Planning Manager, who had to know "every tunnel, nook, and cranny" on the Underground. The running tunnels extended beyond the platforms under the Strand to around 100m from the former Aldwych station (where there would have been an interchange), and each overrun tunnel could hold two complete trains. This was the only part of the tunnels which had never seen any service passenger trains. Some of the cast iron tunnel lining segments in the construction tunnel dated from the mid-1960s, having been left over from the Victoria Line construction. Later ones were reinforced concrete, which were much easier and cheaper to make.

They also showed some of the construction tunnels, which sloped slightly downwards from the construction site alongside the National Portrait Gallery (where the Sainsbury Wing is now located) with an 'S' bend underneath Trafalgar Square to avoid the foundations of Nelson's Column, and which had used a 2ft gauge railway to move construction materials. The station also acted as the "lungs" for all three lines serving Charing Cross station – Bakerloo, Northern, and Jubilee – and showed the Craven Street ventilation shaft. There was a track walk (after traction current was turned off) along the overrun tunnels, as far as the stop lights, although the tunnels continued on for some 400m beyond.

Back at the LTM Depot, Tim Dunn looked at the Signs Store, with Matt Brosnan, Head Curator at the LTM Depot, and the many varieties of names associated with Charing Cross.

The next part dealt with Kennington station and the Kennington loop. Tim and Siddy were then with Alexander Garnett-Scherer, Northern Line Service Manager, on the 1972 Mk1 Tube Stock DM, which was one of the last trains to have traditional "strap hangers" *(did the 1973 and D Stock not have them? – Ed.)* and frequently traversed the Kennington Loop, which was opened in 1926, when the former Charing Cross and Hampstead Tube was extended from Charing Cross to Kennington to form the West End Branch from Camden Town. The loop was intended to be a quick way of turning trains around for their next journey northwards.

Kennington station was opened in 1890 as part of the City & South London Railway and is the only station to retain its original "dome" above the station building, which houses the lift winding equipment. *(Editor's note: Despite what was said in the programme, the domes did* ***not*** *hold lift equipment other than a pulley wheel. Since they were hydraulic, the equipment was at the base of the shafts. Since being replaced, the space in the dome at Kennington has been used for lift motors. (Reference: Printz Holman, The Amazing Electric Tube, page 24).*

Other C&SLR stations originally had them, but most have been rebuilt. An image of a C&SLR loco and three "padded cell" cars was briefly shown. It was remarkable that in the non-public hidden areas, much of the original brown and white and later green and black tiling was still in situ and reasonably well-preserved.

Siddy Holloway took a (rear) cab ride on a 1995 Tube Stock train to go around the Loop, which clearly showed the very tight curvature.

After a safety briefing, LU Safety Officer Gabriel accompanied Siddy Holloway on a track walk around the loop, taking about 15 minutes, after checking that the traction current had been discharged! About 100m into the loop there are the junctions with the NLE to Nine Elms and Battersea Power Station (Station). The construction of the "step-plate junction" was explained and the two different tunnelling methods could be observed at the junction of the loop and the northbound line from Nine Elms and BPS(S) – cast iron segments on the loop and concrete segments on the NLE. It was noticeable that the new NLE tunnels had a walkway on one side for easier access for maintenance and emergency passenger evacuation. 850,000 tons of spoil were excavated from the tunnels and removed by 700 barges down river to form a nature reserve in Essex.

Timetabling and integrating the NLE into the existing Northern Line was an art, which the timetablers had approached with vigour. It was hoped that the train frequency would be steadily increased to a 12 tph frequency on the NLE.

Meanwhile, as Siddy walked the Kennington Loop, back at the Acton Depot, Tim looked at some original plans for other loops elsewhere on the network.

Tim looked at the LTM Archive, with Assistant LTM Director Chris Nix, relating to other "turning loops" on the LU network. It was claimed that the Kennington Loop was the only one still in use. They looked at various plans of the former loops at Embankment (closed and sealed in 1926), where the northbound platform is curved to the line of the former loop (the southbound platform is straight) and also at former Wood Lane station, with its peculiar moveable platform end, closed in 1947, when replaced by the current White City, which is also unusual in having right-hand running at this point.

However, no mention was made of the Piccadilly Line Heathrow Terminal 4 Loop, from Hatton Cross to Heathrow T2 & 3, which has been closed to passengers since March 2020 because of the Covid Pandemic and the resultant fall off of passengers and the temporary closure of T4. However, some trains are still routed this way, after terminating and detraining passengers at Hatton Cross. Also, no mention was made of the Central Line Hainault Loop, which as the same effect of turning trains round, although that might not be considered as a "turning Loop" in the same way as Kennington.

All in all, not a badly-presented programme, with very few noticeable "faux-pas" or factual inaccuracies.

EPISODE 2 – THURSDAY 12 MAY 2022 AT 20.00

Tim and Siddy discover the hidden world of the Waterloo & City: the only Underground line entirely underground, taking a walk down part of the tunnel towards Bank station. Later, Siddy explores abandoned 'Mark Lane', by the Tower of London. Also, at the LTM Acton Depot, they rifle through the London Transport Museum's collection of unscanned photos before Tim learns about the Underground's seating moquette.

Tim started at the LTM Acton Depot in front of the Southern Railway 1940 DM car 61, the only surviving vehicle from the 1940 fleet, now restored to its final full Network SouthEast livery. He explained that the Waterloo & City Line (nicknamed "The Drain") was the only line totally underground, including its rather small depot south of Waterloo station. The line had been built by the London & South Western Railway in the late 1890s and opened on 8 August 1898 as a means of getting passengers from Waterloo Main Line Station (opened 1848) to the City. It was the second oldest tube line in London, following the City & South London Railway (C&SLR) from King William Street (closed in 1900 when the line was extended northwards to Moorgate) to Stockwell, now forming part of the Northern Line. It is also the shortest tube line at 1.49 miles/2.37 km and has its own electrical substation and traction supply, taken from the National Rail network, being rated at 750v DC, compared to the standard LU voltage of 630v DC. The only access was formerly via the "Armstrong Lift" to the north of Waterloo main line station, which was removed in the early 1990s when the Eurostar platforms were built. Access is now via a wide shaft to the south of the station in Spur Road, using a large heavy duty road crane when rolling stock lifts in or out were needed, although there was a permanent crane for small items. There were many relics from the days of the LSWR, SR, BR, and NSE, whose logos were just still visible on the platform surfaces, although partly obscured by the obligatory yellow platform edge line.

Tim spoke to John Lane, Fleet Maintenance Manager of the W&C, who explained that the current fleet of 5x4-car 1992 Stock trains dating from 1993 were maintained in the depot, nicknamed "The Stable", which had small turntables for moving and turning car bogies/trucks around the depot as required. Maintaining the reliability of this small fleet was a major challenge for the maintenance staff. Arriving trains had to reverse via one of the depot roads to gain access to the departure platform. One of the trains was normally berthed at Bank Station, with the other four at Waterloo. The platform tunnels were some 12.5 metres below the mainline station and were constructed within the brick arches of the main line station.

Tim and Siddy then went on a track walk along the eastbound running tunnel towards Bank. The tunnels had been lined with concrete over the cast iron tunnel ring segments to reduce noise. They walked through the chamber where the link to the former Armstrong Lift diverged. There was a considerable amount of ground water seepage, as the tunnels were just below the river bed, and constant pumping out was necessary.

Bank station had had something of an identity crisis, as It had originally been named as "City", but was renamed "Bank" (after the Bank of England) in 1940 when the then new stock was introduced. The whole line was transferred from BR to LU on 1 April 1994 for the princely sum of £1.00!

Tim then spoke to Mo Goucha (?) who explained about the tunnelling methods, using Greathead Shields, with pressurised tunnelling heads, to excavate the tunnels under the river, which were then lined with cast iron segments, covered in concrete. The remains of one such shield could be seen and walked through on the walkway from the "W&C" to the DLR platforms which, along with the "Travolator", replaced both of the former Waterloo & City overrun tunnels at Bank. The "Travolator" was constructed in 1960 to reduce the time taken to get from platform to ticket office level from an intolerable 10 minutes down to a much faster 4 minutes, moving some 13,000 passengers an hour. A scale model of the Travolator was shown.

Tim then moved to the LTM Acton Depot and looked at the various styles of seating moquettes used on LU trains with Georgia Morley, Senior Curator. Many of these patterns were works of art. Current trains had two main styles, one of which was to identify priority seating. The collection had over 400 samples from the 1920s to the 2000s, including many of the Frank Pick inspired designs and the "triangles" for the former Metropolitan Line A Stock; the "Belsize" design of Enid Marx, from 1936-1940. Georgia's favourite was the 1947 roundel design by Joy Jarvis. Georgia explained how the moquette was made, using Jacquard looms. One of the latest moquettes featured four London landmarks, St. Paul's Cathedral, Tower Bridge, Big Ben, and The London Eye.

Posters not only advertised train services and attractions in London, but were used for destination marketing, in this case "Mark Lane" for the Tower of London. This was their next visit.

Mark Lane station had been opened by the District Railway on 6 October 1884, when the line was extended from Mansion House to Aldgate East to link into the Metropolitan Railway and Hammersmith & City Line. It had been renamed Tower Hill in 1946, but closed on 4 February 1967, when it was replaced by the present Tower Hill station. The former station ticket hall still existed (but as a café),

recognisable by its semi-circular windows. Quite a lot survived below street level, including 1949 maps which showed the Circle Line, District Railway wall tiling in varying shades of green, and old posters from the 1960s, still in situ, although rather worn after some 60 years or so. Only the former eastbound platform still remained, as the westbound platform had been removed to make space for track realignment. There were still a few Edwardian features, including a fireplace in the old 1911 waiting room off the eastbound platform. Electric trains had run since 1905, replacing steam hauled services, and trains could still be seen passing the old platform. The barrel vaulting of the "Cut and Cover" tunnelling supporting the roadway could be seen, as well as the remains of the former tunnel telephone wires, which were no longer used, but which had enabled train drivers to contact the line control rooms, using a telephone-style handset connected to the tunnel wires, and to cut off traction supply in an emergency.

EPISODE 3 – THURSDAY 19 MAY 2022 AT 20.00

In this episode, Tim and Siddy visit King William Street, the earliest disused station on the deep tube, dating from 1890 on the City & South London Railway. Siddy also sees new life breathed into Knightsbridge's long-abandoned lifts.

At the LTM Depot, Tim looked the only surviving C&SLR trailer car 10, nicknamed a "Padded Cell" car, because of its narrow slit windows and padded longitudinal seats, and the C&SLR electric Loco No.13, both dating back to the opening of the line in November 1890. The loco had been built by Messrs. Mather and Platt of Manchester.

Tim and Siddy then went to Monument Station (Circle & District) but it was the remains of the original King William Street station that they visited. The original C&SLR ran from Stockwell to King William Street, the original terminus, which was closed and abandoned in 1900 and was the first section of a "tube" line to become disused, more than 120 years ago. King William Street was therefore the "granddaddy" of all later tube stations. The former station was being used as an access point for the Bank Northern Line Upgrade to provide wider platforms, and involved constructing a new southbound running tunnel and platform.

King William Street closed in 1900, as it was far too small for the expansion of the C&SLR in the early 20th Century, before the rebuilding of the C&SLR tunnels in the early 1920s to link the C&SLR and the "Hampstead" Tube together into what became today's Northern Line. A large amount of original 1890 C&SLR tiling was still in place on many of the stairways and passages, along with the wooden treads on the stairs.

On looking at the running and station tunnels, it was clear that they were of a smaller diameter compared to later tube tunnels, which limited the size and length of the carriages. The original single track with a wooden platform on both sides was later changed to a single wooden island platform with a track on each side. The trains were only three or four cars long, plus the loco, and the station handled around 15,000 passengers a day in 1895. The running tunnels from King William Street dropped down sharply around a sharp curve to go below the River Thames, towards London Bridge, and the gradient caused problems with the limited power available on the small electric locos, which were not easy to drive! The contactors were open with the traction motor on each of the two axles protruding through the floor of the loco.

Tim and Siddy walked along the old running tunnels as far as the "plug" that had been installed during WW1 to avoid the tunnels becoming flooded. Pumping equipment was still in place as there was a fair amount of water seepage into the old tunnels. It was noticeable that because there was little or no air flow in the tunnels, a number of "calcite straws" hung from the roof, where salt water had seeped through.

Tim and Siddy then went down the Arthur Street access shaft to the new Bank southbound running and platform tunnel during the construction phase, where the tunnellers were breaking through the 'London Clay' to the original 1920s cast iron tunnel rings. The Construction Manager, John Cummings, commented that it was like "keyhole surgery"! There were some 500+ staff involved in the upgrade works, the first challenge being to sink the main access shaft. The new running and station tunnel was excavated and then lined with sprayed concrete and an impervious lining, rather than concrete lining segments. The new tunnel and platform would provide wider safer platforms, with the old southbound tunnel forming a passenger concourse, along with new escalators and lifts. The old running tunnels were being left in situ at each end, along with the track and conductor rails, as far as the "plugs" where the new line connected into the existing running tunnels, which had been upgraded in the 1920s. At the time of the visit, the track was in place, but temporarily covered over, whilst traction power supply,

signalling, etc, still had to be installed over the coming weeks (the rebuilt station opened on 16 May 2022). *(Actually unannounced but in the afternoon of 15 May – Ed).*

At the London Transport Museum at Covent Garden (in the old Flower Market building) Chris Nix showed Tim the C&SLR loco and "Padded Cell Car" which were very primitive and not particularly safe for the train crew. Each car had padded seats on each side, and a guard who opened the trellis gates at each end and called out the station names, as the cars had no windows (apart from some narrow slit windows) which were not thought to be necessary, as the line was entirely in tunnel. Later cars had windows! There was no class distinction, as there was no room for separate accommodation for different classes. He recounted the 1890s reports of travelling on the C&SLR by Mr A.H. Bevan, which were not exactly complimentary about the railway!

Tim then returned to the LTM Depot at Acton and spoke to Rosamond Lilley-West, Modern Artefacts Curator, who showed several artefacts that had been recently added to the collection, including facemask wearing exemption badges, LGBTQ+ roundels, Elizabeth Line seating moquette, and a "Crossrail Trial Operations" leaflet about the test runs from Woolwich to Custom House, which had been placed in a protective covering. These artefacts would become very important in future years, as a record of the early 2020s.

Tim then looked at artefacts in the Design Store relating to "Knightsbridge", which include an old "GNP&BR" sign and some of the Leslie Green designed downlighters and uplighters used until the station's 1930s upgrade. The station was opened in 1906 as part of the "Great Northern, Piccadilly & Brompton Railway" (now the Piccadilly Line) from Finsbury Park to Hammersmith. The current entrance dated from the 1934 upgrade and the formerly disused "Harrods" entrance along with the old lift shafts were being brought back into use, with four new Otis lifts, to provide full step-free access from street level down to the trains. In the formerly disused passages and stairways, most of the original blue, green, white and cream glazed tiling and wayfinding signs were still in place and many of the tiles were being removed, cleaned, restored, and reinstated to give that part of the station something of a 1900s feel. One glazed tile still had the maker's name "W.B. Simpson & Co. Ltd." on it, which was very rare, and which would go to the LTM. A reinstated rear station entrance was also being constructed in "Leslie Green" style with semi-circular windows and red "oxblood" exterior tiling, in a nod to its heritage (and it looks stunning!).

Tim then spoke to Clare Taylor, Senior Manager Upgrade Projects, about step-free access and what that meant for the travelling public, to make use of the Underground much easier for the mobility-impaired, and those with luggage, prams, and pushchairs. She explained how these upgrades were planned, financed, and executed, often in partnership with private commercial property developers, because of the significant costs involved.

EPISODE 4 – THURSDAY 26 MAY 2022 AT 20.00

Brompton Road and St. Paul's: Tim and Siddy walk the Piccadilly Line at night to explore the hidden World War 2 remains of Brompton Road. Siddy reveals the unexpected wartime use for St. Paul's.

Tim opened the episode by showing the LTM's "one-man air raid shelter" which used to be at Hainault Depot (and actually climbed inside it!), displayed at LTM Covent Garden. There was a brief glimpse of a model (O-Gauge?) of a 3-car COP Stock train.

Tim explained about how tube stations had been used as air-raid shelters during WW2, particularly during the "Blitz" from September 1940 to May 1941 and during the V1 "Doodle Bug" attacks in 1944. An image of air raid damage to Q Stock at Plaistow was briefly seen.

One of the stations used for military purposes was "Brompton Road". It had opened in 1906 on the then Great Northern Piccadilly & Brompton Railway (now the Piccadilly Line) but closed in 1934, when the stations were rationalised and the line upgraded. The former station was sealed off from ground level, from which there was no access and the platforms and lift shafts were converted to an anti-aircraft brigade control centre for the London area to coordinate defence of the skies over London, with AA batteries being located around the London area. Historian Helen Fry recounted how the control centre was used, with some 120 staff there at any one time, 24 hours a day 7 days a week! Most personnel were women, who carried out vital jobs, such as plotters, telephonists, etc., during those dangerous times.

The station could now only be accessed by a track walk at night from Knightsbridge, after the traction current was discharged and as part of an engineering possession. The former platforms had been

removed and a brick wall constructed alongside the running lines, so no-one would know what was behind it! The Yerkes / Leslie Green tunnel lining bands were still in place where the station tunnel existed, as well as the GNPBR tiling on the walls, in some places. WW2 conversion included repainting in WD colours of green and cream/tan, with pinkish walls where there had been a briefing room and projection screen (still in situ!). The whole station was littered with WW2 evidence. The gun operations rooms 1-4 had been located in the lift shafts on several levels, with a thick reinforced concrete cover at the top as protection against a direct hit. There was even a map of London from 1940 on the wall of the lift shaft, albeit very faded. Communication between the various rooms and levels was by telephone or pneumatic tube for messages (shades of Grace Brothers in "Are You Being Served"). It was believed that Rudolf Hess was interrogated by Military Intelligence at Brompton Road, after his defection in 1941.

Chris Nix, LTM Assistant Curator, described the use of stations and uncompleted tunnels for wartime use, including 5 miles of the Central Line between Leytonstone and Newbury Park, which was used as a hidden factory by Plessey, for constructing and supplying radio equipment for the armed services, especially the RAF, and later parts for aircraft and tanks, the factory being accessed via the uncompleted station buildings. Some 2,000 personnel were employed during the war years. It even had a narrow gauge railway running along its length! There were images of the opening of the extensions to Stratford (1946) and later to West Ruislip, with "Standard Stock" trains. Chris Nix showed plans of Wanstead station and the "Ceremonial Key" used for the Stratford opening by the then Transport Minister.

Tim then spoke to Yvonne Weston (in the 1938 Tube Stock unit) who had been born at the start of WW2 and who recounted her earliest experiences of sheltering with her mother on the "Tube", hearing the bomb blasts above, and the air raid sirens, as well as having suffered from 'whooping cough' – then very common. Some 70,000 buildings were destroyed in the Blitz and over 30,000 people killed. A sobering number.

Brompton Road was not the only "Tube" station used for war purposes. St. Paul's was similarly used. This station had opened in 1900 on what was then "The Central London Railway" (now the Central Line), nicknamed "The Tuppenny Tube" because of the then standard fare. The CLR was the third deep tube line in London, and the station had originally been named "Post Office", after the nearby GPO Main Sorting Office and HQ. It had been renamed as "St. Paul's" in the 1930s when the station was upgraded. The lifts had been removed from the shafts which were now used for ventilation, but had been used from 1941 as a control centre for many of the power stations in the London area during WW2. It had been nicknamed "The Hole". The CLR green and cream paint was still in situ on the lift shaft walls, after some 80+ years.

Tim then spoke to Georgia Morley of the LTM about the various uniform exhibits. The Metropolitan Railway had introduced uniforms for its staff in the 1860s (a rather unflattering WW1 female uniform was shown) and the wearing of uniforms had continued to the present day. Various lithographed WW2 posters were shown. 25% of current TfL staff were female, and PPE for females had been introduced from 2015, of which an example was displayed. An LU turban (for Sikhs) and a "Crown Cap" (for Rastafarians) were also shown. Uniforms had to be all encompassing for all staff so as to avoid inadvertent discrimination.

EPISODE 5 – THURSDAY 2 JUNE 2022 AT 20.00

London Bridge and Ongar: Tim and Siddy explore the disused parts of London Bridge. Siddy visits Ongar in Essex, and nearby Blake Hall which, at the end, served less than 20 passengers a day. (It is now part of the Epping – Ongar Railway).

Tim opened the episode standing next to "Standard Stock" DM L134 in the LTM Depot (which appeared to be undergoing cosmetic restoration) and explained that the "Standard Stock" had been introduced between 1923 and 1934 and was the first to be built with air operated sliding doors *(not true – the 1920 Cammell Laird Tube Stock preceded it – Ed.),* which reduced the number of train crew and permitted quicker passenger loading and unloading. The former C&SLR had been extended and upgraded between 1922 to 1924 to form part of what is now the Bank Branch of the Northern Line. The first station north of Borough was London Bridge (which had not had a station on the original C&SLR) which had opened in 1900, when the line was extended northwards towards Moorgate and Euston. It was the only Underground station with "London" in its name, and handled around 220,000 passengers a day. The former lift shaft had been used as a ventilation shaft, the bottom of which was used as a sump to collect

ground water, which was then pumped out, as much of the land around London Bridge was of a marshy nature.

Tim and Siddy's visit took place during the closure of the Moorgate – Kennington section for the Bank Station upgrade, and there was still evidence of the 1920s upgrade in the disused C&SLR tunnels, which ran alongside the current running tunnels. The C&SLR tunnels were of a smaller diameter than the present ones, resulting in smaller and shorter trains, usually three "Padded Cell" cars and a diminutive electric loco (as featured in a previous episode). These former tunnels had been used as an WW2 air raid shelter from 1940 to 1945. The shelters had been opened at 20.00 each evening with a queue of shelterers referred to as "The Tunnellers Parade"! Flood gates had also been installed to prevent flooding of tunnels from bomb damage. The former staircase led up to the old ticket hall (which no longer existed) but much of the original decoration was still visible.

The Jubilee Line tunnels and platforms at London Bridge had been opened in October 1999, resulting in a much busier station. As part of the rebuilding, the southbound Northern Line station tunnel had been moved to create a wider concourse. The northbound station tunnel and platform was the original from 1900 (enlarged) 1922-1924. The disused southbound tunnel and platform was still in situ some 100 years later, including much of the station tiling and name panels, some of which were actually curved metal sheeting with a white tile pattern on, proved by attaching a fridge magnet to it.

Tim then spoke to Customer Service Manager Chris Entende about London Bridge station, who referred to its "heritage" nature and that he carried out a "Planned General Inspection" ["PGI"] every month to check on all areas of the station, even the disused ones. His favourite area was the Jubilee Line concourse, which could be "quite spooky at night", especially when engineering staff were around, as they might pop up anywhere!

Tim and Siddy explained that the running tunnels had been built using tunnel boring machines [TBMs]. They walked along the Jubilee Line construction tunnel, which had been built in the 1990s, but were now sealed off apart from those around the station. The tunnel had been built from concrete, rather than cast iron tunnel segments. There was a considerable amount of ground water seepage, resulting in algae covering some of the walls.

Tim spoke to Jubilee Line driver Kelly Grosvenor, who was a second generation employee, as her father had been directly recruited by LT in Barbados and had come over on the "Empire Windrush" in October 1957 to a very cold London. He became a driver and remained in that job until he retired back to Barbados in 2000. He had become very involved with sports and played in one of the LT cricket teams. He had been very proud of his job, as she was. Driver training took about six months and you didn't know to which line you would be allocated until training started. Jubilee Line trains were now fully automated, but occasionally had to be driven manually to maintain knowledge, e.g., to or from depots, or in special circumstances. Lining trains up with the platform edge doors was quite tricky.

Tim then spoke to Chris Nix, LTM Assistant Director, about Poster Art, and showed some examples of Underground posters, including one from 1886 on the Metropolitan Railway, which was very basic. Lithographic printing had allowed a greater diversity of posters and styles. Frank Pick, Chief Operating Officer of LT in the 1920s and 1930s, had commissioned posters from a wide variety of both male and female artists, including Charles McKnight Kauffer, Mary Koop's cascading "Umbrellas", and Man Ray's two-part poster "London Transport – Keeps London Moving", which were designed to be displayed alongside each other, and which was also the most expensive poster in the collection, valued at some £140,000.

Blake Hall Station: the former station roundel was shown in the LTM Signs Collection. Siddy then visited Ongar and Blake Hall stations, now on the heritage "Epping Ongar Railway", which had been part of the Central Line until closure in September 1994, and spoke to the EOR's MD Dean Walton. Ongar had been opened by the Great Eastern Railway in 1865 and the original station buildings (now restored) still showed evidence of its LT days with the shadow of an LT roundel on one wall. An archive photo showed the original roundel in position, alongside a 1962 Tube Stock train. The branch had had a varied history. It had been steam worked until 1957, when it was electrified, but closed in 1994 due to the dwindling numbers of passengers and increasing financial losses. The last train had been formed of the preserved 1960 Cravens Unit and photos of it were shown. The unique 1972 (but replica – the original had disappeared after LU closed the line) '0.o' Kilometre post at the buffer stop at Ongar was shown, from where all Km distances on the LU Network, at 200m metre intervals, were still measured,

even though Ongar was no longer part of the Underground! The fireplace in the station building still had the GER crest on it and the former 1896 "Foot Warmer Store" was still in situ.

Blake Hall had the record of being the least used station on the Underground network, with as little as 16 or 17 passengers a day using it. It closed in 1981, with the platform having been removed later, to prevent its use by passengers. After closure, it became a private residence and the owner had reinstated the platform, although not open to passengers.

Siddy spoke to Colin Dye (former Station Manager, Blake Hall) and Geoff Parker (former Central Line driver) who were now volunteer drivers on the EOR, both of whom recounted tales from their time on LT. Colin explained that the station lighting at Blake Hall had been fed from the traction supply, so when a train started at Ongar, the lights went dim, but brightened up when the single train stopped. The station had a regular staff of ONE, with the SM also selling the few tickets. He knew all of the passengers by first names. Geoff recounted the apocryphal story that any newspapers left on the shuttle train at Epping would be returned to Ongar and ironed flat for resale to later passengers! Film of GWR Pannier L97 and Met No.1 on the EOR passing Blake Hall were also shown briefly, as well as a glimpse of 1959 Tube Stock DM 1031 in 1990s heritage livery at North Weald (which seems to have been cleaned up).

EPISODE 6 – THURSDAY 9 JUNE 2022 AT 20.00

Episode 6 – King's Cross and Marlborough Road: Tim and Siddy explored King's Cross St Pancras, including a secret siding and the disused Thameslink station. Siddy also discovers the long lost Marlborough Road station.

The episode started with Tim Dunn showing some of the architects' models of proposed stations, including Farringdon, Oxford Circus, and Kings Cross St Pancras. That model had been constructed for the Fennell Judicial Enquiry into the disastrous fire at King's Cross Underground Station in November 1987.

Standing in front of Cubitt's magnificent 19th Century train shed at King's Cross, the underground station was below them. The name "King's Cross" was derived from the fact that there used to be a statue of King George IV at the crossroads. They now went into various disused areas no longer in public use.

The Metropolitan Railway's first station was opened in Pentonville Road in 1863. The first deep tube line was the Great Northern, Piccadilly & Brompton Railway in 1906 – today's Piccadilly Line. The original station building had been designed by Leslie Green, with its signature external oxblood tile cladding, and had 4 lifts down to the platforms. The now-disused passenger passageways still had remnants of the original wall tiling. The City & South London Railway (now the Northern Line) arrived in 1907 and has a separate, but connected, station. The Victoria Line arrived in the mid-1960s, opening in 1968.

Tim and Siddy went through a "secret door" hidden in the artwork on a tunnel end to access the former 'King's Cross Thameslink' platforms, which had been opened on the site of the original Met Railway Station in the 1980s, but closed in 2007 when the current wider and longer platforms were opened underneath St Pancras International station, with much better connections to SPI and KX. The abandoned platforms were still passed by Thameslink trains, now 8 and 12-car Class 700 EMUs, which were too long for the old station. The 1980s architecture and art mosaics on the walls of the former ticket hall (closed in 2020) were still in situ.

The Northern Line platforms were some 28 metres below street level and there were many disused stairways, complete with their glass wall tiles. The Metropolitan Railway station had been relocated to a position closer to KX/SPI for easier interchange, but one of the "quirks" was a "secret railway siding", located in a former running tunnel between the eastbound and westbound tracks, which had been used for spoil removal during the 1930s rebuild and which was still in situ, complete with its buffer stop. Tim Dunn referred to this as a "freight siding" *(This siding was installed in the 1990s as part of works to address a recommendation in the Fennell report to provide an additional subway between the Sub-Surface and tube platforms. Whilst there was to have been a reversing bay at King's Cross, it was never signalled and is questionable if this is on the same alignment).*

Tim spoke with Mike Guy who had been at King's Cross for over 10 years and explained about the way KX/SPI had developed into an underground warren linking several lines – Metropolitan, Circle, Hammersmith & City, Piccadilly, Northern, and Victoria. He also referred to the King's Cross fire in November 1987, which claimed 31 lives and many injuries, due to a discarded cigarette falling through the wooden escalator and setting fire to accumulated dust, oil, and rubbish. The damage to the station

ticket hall was server and it changed the mindset of LT as regards fire prevention, resulting in 157 recommendations by the Fennell Enquiry. King's Cross now had firefighting access tunnels, which were now part of all new and refurbished deep level stations, to enable the London Fire Brigade to access stations quickly. Many used disused lift and ventilation shafts, suitably modified and repurposed, as emergency exits and firefighting accessways, such as a former C&SLR lift and stair shaft, going up some 40 meters to "The Egg" (built in 2012 as part of the station upgrade) on King's Cross Square in front of the main line station.

The 13-mile Victoria Line was constructed in the mid-1960s and was the first fully automated underground railway in the world. It is entirely in tunnel, except for the surface depot at Northumberland Park. Archive film clips of its construction were shown, including testing of the ATO system on the Hainault Loop with a converted 1960 Tube Stock unit. The original 1967 Stock was replaced from 2009 (not 2007 as stated by TD) by new trains – the 2009 Tube Stock units – which also had full ATO, which allowed closer train frequencies. Stage 1 of the Victoria Line had opened on 1 September 1968; Stage 2 on 1 December 1968, and Stage 3 to Victoria on 7 March 1969, opened by HM Queen Elizabeth II. The 3.5 mile Brixton extension opened in 1971.

Tim and Siddy then boarded the cab of A Stock DM 5034 (formerly 5008) in the LTM Depot *(Left).*

Photo: Paul Raven-Hill

They then proceeded to visit the disused Met Line station at Marlborough Road. The station ticket hall was still in situ, following its closure in the late 1930s, and had been used as a restaurant, but was now an electricity sub-station. The tall semi-circular tops of the widows betrayed its origin. There

There had been three stations on the original Met Railway Northern Extension – St. John's Wood Road, Marlborough Road, and Swiss Cottage. These closed in November 1939 when alternative stations on the Bakerloo (now Jubilee) Line was extended north of Baker Street. *(Swiss Cottage Met. closed 17 August 1940 – Ed.).*

Marlborough Road, which had been located in one of the two open-air sections of the Met, was now used as an emergency evacuation point. The line had originally been single track with passing loops at stations, but was doubled in the 1880s, and steam worked until electrification in the early 1900s.

Tim and Chris Nix, LTM Assistant Director, examined what was left of a 1904 Metropolitan Railway Trailer Car No.4 *(Left)* in the LTM Acton Depot. It was once part of one of the original Met Railway Saloon EMUs and is the only survivor of that stock. It had been sold to the Army in 1940 for use as an office and store at Shoeburyness. It was disposed of in 1985 to the North Woolwich Station Museum, but was subsequently damaged by fire, caused by vandals, but it was potentially restorable.

Photo: Brian Hardy

The fire damage to the surfaces of the wooden body had revealed its construction methods, with its cornicing and roof timbers now exposed to view.

An image of the former Met Railway coach bodies, with their recognisably round-topped doors, now used as beach huts at St. Helen's Duver, IoW, was also shown. Also featured was Met Railway "Jubilee" Coach 353 *(Below),* restored from a wreck by the Ffestiniog Railway at Boston Lodge Works, and now in use on the Kent & East Sussex Railway, as part of their Victorian Train, to show what was possible, with enough time and money.

Below: '353' is seen at the LTM Acton Depot Open Weekend on 14 April 2013.

Photo: Paul Raven-Hill

EPISODE 7 – THURSDAY 16 JUNE 2022 AT 20.00

Episode 7 – Elizabeth Line and Angel: Tim and Siddy explored the brand new Elizabeth Line and had access to two of its stations, weeks before the line opened on 24 May. Siddy also explored the disused parts of Angel station and Tim looked at the former City Road station.

The episode opened with Tim at the LTM Acton Depot, looking around the signs and roundels displays, which had varied styles until the formation of the LPTB in 1933. The Metropolitan Railway had "diamond" style until 1933, whereas the Underground Group had used a bar and circle style for over 100 years, which then became the LT standard from that date. The most recent iteration was the purple "Elizabeth Line" roundels.

The Elizabeth Line is the first new line for nearly 25 years, the Jubilee Line Extension being the last one. Constructed by Crossrail Ltd., forming a 100km line from Reading and London Heathrow, through central London to Shenfield and Abbey Wood. The "epic" scale of the new stations was noted, as the new stations themselves are vast, with long and wide platforms.

Tim and Siddy then went to the completely rebuilt Liverpool Street Station, which was one of 10 new stations on the Elizabeth Line, and has been effectively combined with Moorgate, and was a huge project, with 124,000 passengers per day expected to use the station. Each station had architectural detail reflecting its location. The station design included sound-dampening concrete wall cladding panels, which were cast using 3D-printed wax moulds. The central concourses had "totem pole" direction signs at frequent intervals. Lighting was subtle, with warmer lighting on the platforms and main passageways, but cooler lighting in the cross passages. All platforms were 238 meters long and had platform edge doors, to reduce wind effects and for fire safety. The trains were 208 metres long, formed of 9-car Class 345 EMUs, but the platforms allowed for up to 11-car trains, should that be required in the future. The trains featured regenerative braking to reduce power consumption. Tim and Siddy viewed at test train calling at the station, but were not permitted to board it!

Mark Dewhurst, Crossrail Lead Engineer for Liverpool Street Station, explained that it was one of the hardest stations to build, as the platform tunnels were only 5 metres below the Northern Line tunnels (at Moorgate), especially as an interchange with other LU lines. Film of the construction was shown, with the TBM break-through into the platform tunnel. All of the spoil had to be removed through one temporary access shaft.

Construction involved major archaeological excavations and examinations by Museum of London Archaeology [MOLA], which had to catalogue and record all finds going back over 2000 years. Don Walker of MOLA explained that one of the major discoveries was 3,300 burials at the former "Bethlehem Hospital", or 'Bedlam' as it was called, opened in 1247, as well as municipal burial grounds and cemeteries outside the former walls of the City of London. There had been many other interesting finds, such as old Roman roads, as well as horseshoes, footwear, etc, some of which was now in the Museum of London.

Tim then went on to Farringdon Station, which had been completely rebuilt, as a major interchange with LU lines and Thameslink. It was possible to go from here to any one of three London airports, Heathrow, Gatwick, and Luton.

Outside of the public areas were the emergency evacuation routes and the purpose-built HVAC (Heating, Ventilation, and Air-Conditioning) equipment rooms to maintain an ambient atmosphere within the station.

The station had many long escalators, as well as inclined lifts for mobility impaired persons, etc, to get to street level, as vertical lifts could not be installed because of space limitations.

Tim then went to the plans archive at LTM Acton Depot and Chris Nix, LTM Assistant Director, showed plans for a cross-London railway line going back over 75 years! "Route K1" was very similar to the route of the Elizabeth Line from London Airport (later Heathrow) and "Route B" was virtually the Fleet, later Jubilee, Line. Some prosed lines were never built. After 1933, LPTB took a coordinated approach and proposed plans in the 1935 "New Works Programme" to expand the Underground network, primarily in North and East London. A 1946 Harry Beck tube map showed the proposed "Northern Heights" and Central Line extensions to the west and east of London. After WW2, because of population growth outside London, the Central Line extensions won over the Northern Heights proposals, which were later abandoned, although construction had commenced before the war. Any expansion had to have reasons

and obtain the necessary funding. Not always easy, as was seen with Crossrail/Elizabeth Line and other proposed extensions.

Siddy then visited Angel station on the Northern Line Bank Branch, which was one of the busiest stations on the Northern Line. It was originally opened in 1901 as part of the first extension of the City & South London Railway. The line was extended to Euston in 1907. The station originally had a single narrow island platform, like those that still existed at Clapham North and Clapham Common. It then still had its four lifts and a passimeter booking kiosk in the ticket hall. The station was reconstructed from 1989 to 1993 to have separate northbound and southbound platforms at a cost of £119m in today's money. The station was provided with escalators, some of the longest on the Underground. A new northbound running and station tunnel was constructed, with the former island platform being widened as the southbound platform, with step plate junctions at each end to link to the existing running tunnels. The now disused northbound running tunnel still had its track in situ, but without the 3rd and 4th rails. Very eerie. The disused passageways still had 1920s tiling and poster fragments in situ. The 30m deep emergency stair shaft used to have stairs, which became overcrowded when the lifts broke down (frequently!). These were now used for traction power supply cabling. In the former ticket hall (now bricked up) parts of the stairs and handrails were still visible.

Angel was one of four LU stations named after pubs, the others being Swiss Cottage, Royal Oak and Elephant and Castle.

Tim then visited the disused C&SLR City Road station, closed in 1922, when the tunnels were rebuilt, which had now been rebuilt and repurposed as the "Bunhill 2 Energy Centre", using waste heat from the tube lines to heat local homes, a school, and a leisure centre. He met Rodrigo Malbueno (?) the Islington Borough Energy Centre Manager there, who explained how the centre operated, in partnership with LU. The lifts had been removed from the lift shafts and massive fans had been fitted to draw out hot air from the tube tunnels. Down on the station platforms, some of the original wall tiling was still in place.

EPISODE 8 – THURSDAY 23 JUNE 2022 AT 20.00

Episode 8 – Quainton Road and Kingsway: Tim and Siddy visited Quainton Road in rural Buckinghamshire, 50 miles from Central London, which was once part of the Underground network (a 3-car train of COP Stock and two 'T' Stock DMs are preserved there). Siddy also explored Kingsway tramway tunnel.

The episode opens with Tim Dunn at the LTM Depot, Acton, looking at the restored Met Railway Milk Van of 1986. It is not often remembered that the Met Railway carried freight from the late 1860s, right up to the 1930s. The Met's furthest outpost was the very rural Verney Junction, reached in the mid-1890s, which connected with the "Varsity Line" from Oxford to Cambridge, although there is no station there now. The northern sections of the Met beyond Aylesbury were abandoned by the LPTB in the 1930s, and later retracted back to Amersham in 1961, when the Met Line was electrified from Rickmansworth. Aylesbury was left to BR Midland Region, and, of course, is now part of the very successful 'Chiltern Railways'.

Tim and Siddy visited the marvellously-restored Quainton Road station as part of the Buckinghamshire Railway Centre (BRC). The former Brill branch ran from Quainton Road to the village of Brill, originally to carry goods from the various farms and estates to Quainton Road, for onward travel to London. Passengers came later when small steam locos, including a rather odd-looking traction-engine like 'Aveling and Porter' machine pulled wooden four-wheel carriages, one of which was in the BRC Museum. The branch had been opened in the 1890s but had been "modernised" by the Met by the introduction of steam locos, but had been closed by LPTB in 1935 and the track removed. A few items survived at Quainton Road and along the old route.

Tim and Siddy walked along the old trackbed of the Brill branch to Westcott where the old ticket office (with a grounded coach body) survives in the back garden of a fairly recently-built house. The line ran through what is now the back garden. The station building has a replica station nameboard.

Tim and Siddy returned to Quainton Road Station which could be viewed from the footbridge linking the two main platforms. The old line from Aylesbury to Calvert has been severed (because of HS2 construction) and the main up platform is now the limit of operation with a "Stop Board" at the northern end of the platform. Tim recounted that he had had several birthday parties at the BRC in its earlier days and mentioned his 7th Birthday Party there in March 1988 *(so you can work out his age!).*

One major omission, in my view, was the lack of any reference to the preserved Met "T" Stock cars or the preserved COP Stock unit at BRC.

He saw Met No.1 ('E' Class 0-4-4T) under overhaul at BRC. He then showed Met Railway Beyer Peacock No.23 of 1863 in the LTM, Covent Garden, along with Met Railway 'Chesham' Coach 400, restored to its 1900s condition (four others are on the Bluebell Railway as the "Chesham Set").

Tim spoke to Laura Sleath at LTM Covent Garden aboard Met Coach 400 and related some of its history. It had been built in the late 19th Century and had been withdrawn in 1960, on electrification of the Met to Amersham and Chesham, and the introduction of the A Stock electric trains in 1961, which gave a much smoother and faster ride into London. Locomotives had been changed from electric to steam and vice-versa at Rickmansworth from 1925 to 1961. Both locos and the coach were a reminder of the days of steam operation on the Met.

Tim visited the LTM Acton Depot to explore the Maps archive with LTM Director, Sam Mullins, who showed an original enamelled pre-WW1 Met Railway map, which was topographical in style. In the early 1930s, Harry Beck had invented what became the London Underground map, in diagrammatic style. In 1933, the LPTB had been formed with the legendary Frank Pick as its Managing Director. He didn't like the diagrammatic style at first, but eventually agreed to "give it a try" and the public loved it. It was much simpler for passengers to understand, showing the location of stations and lines in relation to others. The Harry Beck map only used horizontal, vertical, and inclined 45º angles and Pick eventually gave in as it was "the most convenient and tidy-looking map they had ever had".

Not only did LPTB (and later LT) run trains, buses, and trolleybuses, they also ran trams from the early 1900s right up to 1952. Tim and Siddy explored preserved 'E1' Tram 1025 of 1907 at the LTM. LT had operated around 3000 trams at the peak of tramway operation, carrying over 1 billion passengers a year over 366 miles of track. Trams were simple to operate and were an integral part of London's transport system, particularly in South and East London, which had not been well served by the tube network.

The Kingsway Tram Tunnel had been constructed in 1907 to link the northern and southern tramway networks and the tunnel ran from the northern entrance ramp in Southampton Row, under Kingsway and the Strand, emerging through a portal alongside the old Waterloo Bridge. When it was rebuilt in the 1930s, the tunnel portal was relocated under the bridge onto Victoria Embankment. The tunnel closed in April 1952, as the tramway network was being closed down in stages until late 1952. The tramway ramp still exists along with its "conduit" power supply system, as LCC would not allow traction standards and overhead trolley wires in Central London, so the latter were confined to the outer suburbs. Trams were eventually replaced with trolleybuses from the 1930s to 1962, and also with diesel buses (mainly RTs and later RMs).

The southern part of the Kingsway Tunnel had been converted in 1964 to form the one-way Strand Underpass from Waterloo Bridge to the southern end of Kingsway, passing through the site of the former Aldwych Tram Station. Further north, Kingsway Tram Station still existed and the marble terrazzo platform tiling from the 1930s modernisation were still in place, over 70 years after closure. The northern section was now used for storage and had been a flood control centre in past years. Part of the "Last Tram Week" film was shown. The resurgence of modern tramways, including Croydon from 2000, was described, with some video images of Manchester and Croydon trams.

Chris Nix, LTM Deputy Director, explained how the London tramway power supply had worked with the 'conduit and plough' system, with archive footage of a "change pit" (possibly Tooting Broadway), to show how tramcars changed from overhead to conduit and vice-versa, using a "plough fork" to remove or insert the "Plough" under a tramcar. The conduit system, although very safe, required a lot of heavy infrastructure below the road surface, which was very expensive to maintain and operate, and contributed to the eventual demise of what had been a very cheap and serene mode of travel in London.

EPISODE 9 – THURSDAY 30 JUNE 2022 AT 20.00

Episode 9 – Greenwich and Notting Hill Gate: Tim and Siddy visited the cathedral-like Greenwich Power Station, which stands ready to power the Underground at short notice. Siddy visits hidden parts of Notting Hill Gate.

The episode opened with Tim Dunn alongside Battery Electric Loco L35 in the LTM Depot, Acton, and briefly explained its purpose, to provide haulage of engineering trains and equipment when the main traction supply was switched off.

It was explained that, apart from trains and buses, and also trams until 1952, London Transport also operated several electricity power stations, at Neasden (closed 1962) *(1968 – Ed.),* Lots Road, Chelsea (closed 2002) and Greenwich, which was the only one now in use, although usually only for emergency back-up power supply, if there was any interruption of the main National Grid supply.

Greenwich Power Station ["GPS"] had been constructed in 1906, with two 76m high chimneys, for supplying electrical power to the local tramway network. GPS was expanded in 1910 with two further 55m high chimneys, die to objections from The Royal Observatory (also at Greenwich), who claimed that their readings and measurements were being affected by the vibrations from the steam piston and later steam turbines, as a "Menace to the Meridian"! There was evidence of "tram tracks" around GPS and a wagon turntable, which were for moving coal in and ash, etc, out to the coal jetties.

LT had taken over several power stations in 1933 and had gradually rationalised them, so today, power comes directly from the National Grid, via sub-stations, to convert the high-voltage AC supply down to a more usable 630v DC for traction supply. Lots Road and Neasden no longer existed, but GPS still had period detail in its high and large windows, as well as glazed tiling and brickwork. The Turbine Hall was a vast space, now only used for storage and measurement equipment.

Russell Fleetwood, GPS Manager explained that GPS was now a "dual fuel" power station, using oil and gas. The original engines had each produced 14000kWh. These were later replaced by steam turbines producing even more power for the Underground. In the 1970s, the steam turbines were replaced by 8 Rolls Royce 11mW gas turbine (effectively jet) engines, capable of being run up and operational in 4 minutes from a cold start, of which 6 were fully operational! And they were *very* noisy when at full power, just like sitting on the end of a runway on take-off. Two of the engines were tested and run on a regular monthly basis in rotation. GPS has a staff of 14 engineers and technicians, of which 2 were on duty at any one time, 24/7, 365 days of the year.

At the LTM Depot, Acton, Chris Nix, LTM Deputy Director, showed plans of the electricity supply network, supplying the Underground and the tramway network (finally closed in July 1952) and explained the operation of electricity substations, including the control panel obtained from the Manor House substation, when it was upgraded. Rectification (conversion) of AC current to DC current had been by the use of Mercury arc rectifiers, introduced from 1902, of which archive images were shown – AC/DC & Mercury; could be 'Heavy Metal Fans' perhaps! It was all solid state rectifiers now.

Lucien Nunes, Founder of the 'Museum of Electrical and Electronic Technology' ['MEET'], who owned 21 mercury arc rectifiers, and demonstrated how a portable mercury arc rectifier with its large glass bulb containing mercury (formerly used in a cinema projection room) worked, and which weighed in at around 100 kilos, so it was no lightweight piece of equipment!

Tim and Siddy then looked at one of the largest items in the LTM Collection was an enormous ventilation extractor fan from Swiss Cottage Station (Bakerloo Line), which had been removed when the ventilation system had been upgraded with new fans.

Tim and Siddy then visited Notting Hill Gate station to explore the hidden areas away from public gaze. The first Notting Hill Gate station was on the Circle and District lines, opening in 1868. The Central Line station opened over 30 years later in 1900, but was quite separate from the Circle and District station. Notting Hill Gate was modernised in 1959-1960 and both stations were combined, with the Central Line station being relocated closer to and below the Circle & District Line platforms. Notting Hill Gate was the first "tube" station to have steel escalators (instead of wooden ones) and vast ventilation shafts were constructed, after it was realised that tube tunnels were much hotter than elsewhere and the heat had to be removed.

Notting Hill Gate was unusual, along with several other stations on the Central Line, in that the two platform tunnels were placed one above the other, because of space limitations, as the tunnels had to follow what were then narrow roads in the 1900s, without having to pass through privately owned property. In the case of Notting Hill Gate, the eastbound tunnel was above the westbound tunnel. In the abandoned sections, many CLR details existed, including glazed and glass wall tiling, and an array of posters, with their very vivid colours from the late 1950s. One of the old stairways had been bricked up in the late 1950s, when the station was modernised and upgraded, and a number of almost pristine posters, such as Royal Blue Motor Services (a coach company), 'Pepsodent' (toothpaste); and various movie posters, such as "Too Many Crooks", were still in situ, when they were discovered in 2010 whilst maintenance was taking place. All of the posters were photographed, but the decision was made to

leave them in place and reinstate the brick wall, as this would preserve them as they had been for over 60 years.

Tim spoke to Mike Ashworth, former LU Heritage Manager, about Notting Hill Gate and its posters, which had been entombed for such a long period, and his decision to leave them there in a stable environment. He also mentioned that stations used to have kiosks, such as the "Finlays" kiosk from East Ham, which would sell newspapers, cigarettes, and tobacco, when such items were permitted on the Underground. Mike Ashworth's greatest achievements were saving the control panel from Lots Road Power Station when it closed in 2002 and the 3 year restoration of the 1938 Tube Stock unit from 1998 to 2001, after which it regularly ran on railtours around the LU Network from 2002.

Tim then spoke to Shashi Verma, TfL Director of Strategy and Chief Technology Officer, about tickets and ticketing systems. It had not been practical to sell tickets on trains, so ticket offices were a necessity, to purchase a ticket before boarding a train. LT had pioneered the use of automated ticketing systems from the 1930s onwards, firstly in ticket offices, then in Passimeter ticket kiosks, and then in automatic fare collection ticket machines, of varying styles and design. The first fully automatic ticket gates were introduced when the Victoria Line opened in the late 1960s, but were rather cumbersome and awkward to negotiate. Later versions were much simpler. The first automatic "yellow" tickets with a magnetic strip, also came with the Victoria Line *(following trials earlier in the 1960s on the west end of the District Line – Ed.).* The Oyster Card appeared in 2002, but full contactless payment was introduced by LT, in conjunction with the main banks, in 2010 on buses and in 2012 on the Underground, as an alternative to the Oyster Card. It was LT which had pioneered contactless payment, well before shops and other locations, and today, 86% of all fares paid were by contactless payment.

EPISODE 10 – THURSDAY 7 JULY 2022 AT 20.00

Episode 10 – Baker Street and Edgware Road: *Tim and Siddy explore the Underground station with the most platforms, Baker Street. Siddy visits the disused Edgware Road signal cabin with its very last operator, Charley Monroe.*

The episode opens with Tim at the LTM Depot, looking at LT Sports Associations' trophies, including the Metropolitan Railway (later LT) Rifle Association, for which there was an underground shooting range at Baker Street Station.

He also showed the Metropolitan Line Departure Indicator that had been at Baker Street station until replaced by digital Passenger Information Systems. The Met Line indicator has been restored to full working order so that visitors can see how it worked. Baker Street holds the record for the most platforms at an LU station – 10. 4 Met; 2 Circle/H&C; 2 Bakerloo; 2 Jubilee.

Baker Street had opened in January 1863 as one of the first stations on the 3.5 mile Metropolitan Railway from Paddington to Farringdon, although it was much extended later. The Metropolitan Railway had been constructed as an answer to London's chronic traffic congestion in the 1850s and 1860's *(no change there then in the 21st Century!).* Archive images of steam operation were shown.

The original 1863 footbridge was still in situ but no longer accessible to the public after the 1911 redesign of Baker Street station.

Sam Mullins, LTM Director, explained that the original Metropolitan Railway had been built just below ground level along "New Road" (now Euston Road, which had been intended as a bypass for central London) using the "Cut and Cover" method, which caused huge disruption during the construction, with many objections being made about loss of business and access. It had all been done by hand, with little mechanical help until later years, with steam-powered excavators. It had taken 3 years to build the 3.5 mile line. The line had opened on 10 January 1863 and an estimated 25,000 people travelled on it on the opening day. It became apparent that there was a problem with the atmosphere and steam from the small locomotives, resulting in more steam outlet openings being made along the line to allow steam to escape. This continued until electrification in the early 1900s.

The next line to arrive, in 1906, was the "Baker Street & Waterloo Railway" – the present day Bakerloo Line – which had been financed by a certain Charles Tyson Yerkes and had been constructed using deep level bored tunnels, rather than "cut and cover". The station had been designed by Leslie Green in the Yerkes style. The tunnels were 25 metres below ground level and were originally accessed by four lifts and a staircase.

When Baker Street was redesigned and modernised in 1911, these lifts were taken out of use, but they were used just one more time on VE Day 8 May 1945 to allow crowds to access the platforms. The lifts were later removed and the lift shafts were then used for ventilation of the Bakerloo Line tunnels and

platforms, but the unique blue and white glazed tiling was still in situ on the stairways, which had been closed in 1939 at the outbreak of WW2.

The last tube line to arrive was the Jubilee (formerly Fleet) Line in 1979, with construction having commenced in 1972, as evidenced by dates on the cast iron tunnel lining rings.

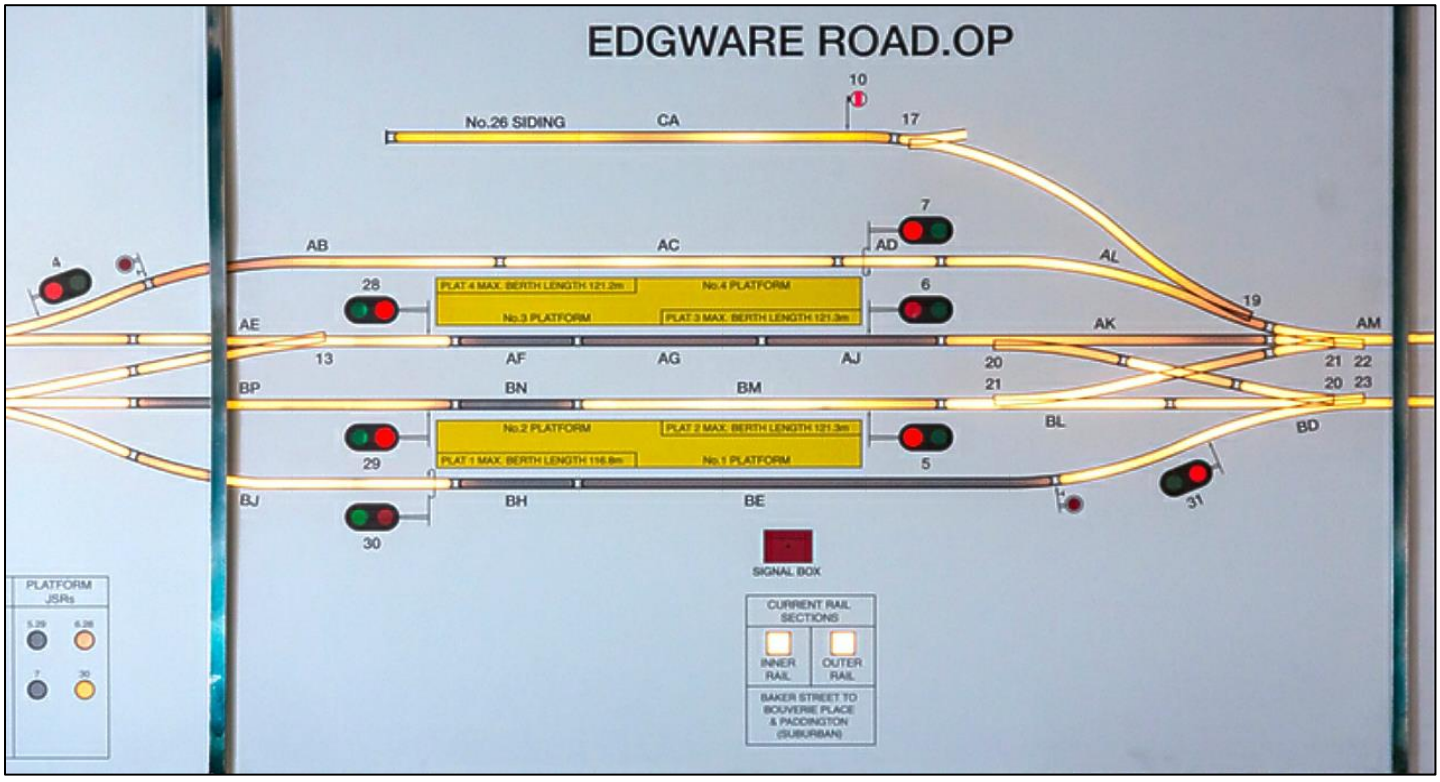
The 1911 rebuilding involved construction of the Metropolitan's new headquarters, with Chiltern Court above, which became a very desirable address in the early part of the 20th Century. Chiltern Court had been designed by Charles W. Clark, well known for other large buildings. Not only did Chiltern Court house apartments, but also LT staff accommodation, including a rifle range underneath the escalators! It was not well-known that the "Special Operations Executive" had been set up in June 1940 by the wartime government in Chiltern Court.

Baker Street had been at the heart of the London Underground network for many years, as it had been the location for the LT Catering Department Training Centre, where many of the catering staff in the many (178) staff canteens had been taught their skills. Archive footage of the Catering School, dating from the early 1950s, was shown, with many of the gender stereotypes from that period; men working on the buses and trains, women in the catering area, for example.

Tim spoke to Paul Furze, who had been LT's Catering Dept Procurement Manager, who explained how staff were trained and how mass-produced meals had been prepared, from the Food Production Centre in Croydon. LT had its own brands, such as "Griffin Tea". LT had produced its 1 millionth jam tart in a specially-made metal jam tart dish, now in the LTM Collection, along with many LT branded crockery and cutlery, intended to prevent theft of such items, although a lot went missing over the years! Changes in eating habits changed from the late 1970s and early 1980s and canteens were gradually closed. There are now very few staff canteens existing and these had been privatised in the 1990s.

Tim and Siddy then looked at a Victoria Line Signalling Programme Machine from the 1970s, which used a moving punched roll to make electrical contacts in order to send signals to control trains. This had been in service until the early 2010s, when the Victoria Line became computer controlled.

Siddy then visited Edgware Road Signal Cabin, which had been opened by the Met in 1926, but modernised later by LT. The cabin had closed on 1 September 2019, when the signalling was taken over by the modern TBTC systems on the H&C, Circle, and District lines. The cabin was now in the care of the LTM *(Below),* as the then oldest working signal cabin on the LU network. The only other surviving signal cabins are at Harrow-on-the-Hill and Rickmansworth, both on the Met.



Charley Monroe had been the last signaller at Edgware Road and had had the privilege of working the last shift. The operation of the cabin was explained, with the use of miniature levers and a track diagram, showing the position of trains as they passed through or terminated at, the station. On average, there were 56 trains per hour in both directions, on three lines, H&C, Circle, and District. The lever frame had

38 levers, red being signals; black for points, white for spare, and yellow for release levers to allow routes to be reset in the event of a problem. There had always been two signallers on duty at any one time, but only one worked the frame, as space was very limited. There was also a whistle, which were used to summon particular members of staff (Signal Technician, Permanent Way, Train Technician etc.) who were out on the track in the days before mobile phones. Charley was the last one to use it (at 01.30!) on 1 September on the last operating shift.

Siddy then had special access to one of the three relay rooms under the signal cabin, to show how the interlocking of signals and points had been carried out from 1926 onwards until closure in 2019. Care had to be taken – the highest voltage was 100v but there was a 600:100v transformer in the room! These had been replaced by modern computer-based interlocking systems in the new control room, still using the same principles, but taking up much less space.

The LT Lost Property Office had been based at Baker Street for some 86 years, closing and moving in 2019. Tim spoke to Paul Cowan, Lost Property Manager, about the LPO, now based at 200, Baker Street. From hand-written ledgers, listing every lost property item handed in, the system is now computer based, and is called “Sherlock”! Very appropriate title. The LPO has handled over 15 million items of lost property. Such items are kept for three months from date of handing in and logging, then they become TfL property, but may be kept for many months, especially if an item is valuable, such as a tiara worth over £200,000, to reunite them with their owners. The most common items until recent years were umbrellas, but there are fewer, but around 100 mobile phones are handed in every day *[people can be so careless!]*, as well as sets of false teeth!

POST-SCRIPT:

This now concludes the reviews of the ten episodes of Series 2 of “Secrets of the London Underground”. I hope you have enjoyed reading them. The series is being repeated on various days on the Yesterday and Yesterday+1 channels, as well as on UKTV Play. On the whole, I thought that Series 2 was better than Series 1 in its presentation and subjects covered, even though there were a few “howlers”! *(Corrected where spotted – Ed.).* Here’s to a third series in the future.

Other examples of preserved Underground stock in the LT Museum at Acton.

Photos: Brian Hardy