

# SOCIETY SECTION

## A REPORT OF THE SOCIETY MEMBERS' PRIVATE VISITS TO THE LONDON TRANSPORT MUSEUM DEPOT AT ACTON

by Paul Raven-Hill

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These visits were arranged following a chance meeting with Keith Raeburn (Depot Logistics Supervisor) at one of the LTM Depot Open Days in late September 2022, and an earlier discussion with Geoff Thorne (Engineering Lead for the Q Stock Restoration Project).

After a series of e-mails, these visits took place on Saturdays 14 January and 11 February 2023. There were 13 members on the first visit and 23 on the second visit.

Saturday 14 January was a very wet and windy day, but that didn't dampen our enthusiasm for all things Underground! The weather was somewhat kinder on the 11 February visit – dry, chilly, and cloudy.

On both visits, we were met by Keith Raeburn (Depot Supervisor), Geoff Thorne (Technical and Engineering Lead), and Steve Green, who is a member of the Restoration Team and a former BR loco and train driver. Keith made an introduction about the Depot and its purpose. It held 95% of the LTM Collection, the other 5% being at LTM Covent Garden, and is a working museum, only being open to the public on selected dates every year. Personally, I thought the Depot was far more interesting, so far as LURS is concerned. Members will know very well what is there.



*A view of the shed looking west from the mezzanine showing Tube, Sub-Surface stocks, engineering vehicles and (in the foreground) classic LT signal heads.*

Our main focus was the train shed area, which has six tracks and a wide variety of LU locos and rolling stock, and to look at the Q Stock Restoration Project. Some of the vehicles are currently stored, but securely sheeted over, outside on the loading apron yard, including G/Q23 DM 4184; 1986 Tube Stock DM 16 (the green one), and 1978 D Stock DM 7012. There were also two ex-BR Brake Match Wagons and a former A Stock trailer reserved for the Q Stock Project, possibly to be converted as a diesel generator/battery power car with a modified look-alike K/Q27 style body to supply traction power for the Q Stock train on non-electrified lines.

After proceeding to the first vehicle, **Q38 Stock DM 4417**, Geoff Thorne gave a brief summary of his railway career with, in particular, LT and RAIB, a short rundown of DM 4417, its history, how it had been



operated in LT days, what restoration work had been and was being carried out, especially various modifications that had to be made to meet current safety requirements, or where the original equipment was obsolete.

The Q Stock was very important to the LTM, as it began at the “crossroads” of evolution of the London Underground sub-surface train, with the body style being very “art-deco” but its electro-magnetic contactor traction equipment, although new, dating back to the earliest days of Underground electrification in the early 20<sup>th</sup> Century, largely financed by American money through a certain financier, Charles Tyson Yerkes (who was later found to be less than honest in his dealings), Frank Sprague (the inventor of the multiple unit control system) and Charles Ward (who designed the couplers used by the Underground until the advent of the “Wedglock” automatic couplers on the 1938 Tube Stock), one of some 50 US engineers who came across to the UK in the early 1900s to oversee the District Railway electrification.

The American influence could be clearly seen in the terminology used (‘cars’ instead of ‘coaches/carriages’) and the body styles of the original A, B, C, D and E Stocks, from 1903 through to 1914. Only with the 1920 F Stock did the appearance change to a more British appearance, but the American-influenced clerestory design reappeared with the G, K, L, M and N Stocks (later Q23, Q27, Q31, & Q35). The later flare-sided Q38, O/CO, P/CP, and R Stocks from 1938 to 1959 had a much more modern British appearance.



*Q38 DM 4416 at the driving end (Above, Left) and the trailing end of DM 4417 (Above). Looking towards the guard's controls (Left), the tip-up seat for the guard can be seen to the left of the communicating door. On the right-hand side is the additional handbrake installed for when the car was used on the East London Line.*

After climbing up and through the cab, we were able to see the traction and brake controller and the interior restoration, with replica fluted lampshades and period posters. Light bulbs had been replaced by LED lights, which would consume less power but still gave the right degree of illumination and appearance. The guard's position had its panels restored, plus the handbrake wheel fitted when the car was used on the East London Line, to prevent runaways in New Cross Depot. The attention to detail in carrying out the restoration was astounding. It was neither easy nor cheap, but the Q38 Stock had a major place in London Underground history, with early 20<sup>th</sup> century traction equipment, and what was a very modern-looking mid-20<sup>th</sup> Century body design, which would not look out of place today, with its flared bodysides, designed to eliminate separate footboards.

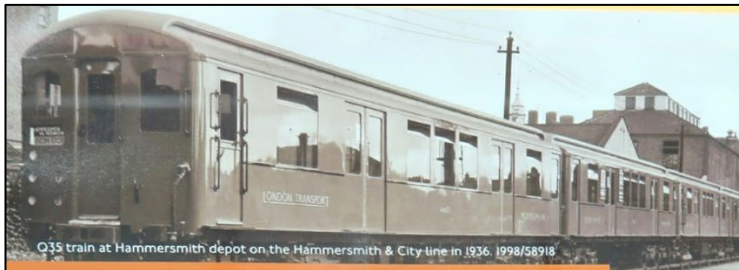
Geoff commented that the Q38s were one of the worst LT designs for repair and maintenance purposes, as many components were extremely difficult to reach or replace. It should be used as an example of how *not* to design an Underground car!

We then proceeded to the other two Q Stock Cars; **Q38 DM 4416 and Q35 (formerly N Stock) Trailer 08063.**



As a “West-End” car, **DM 4416** was in a poorer condition than 4417, possibly due to its being more exposed to weather than east-facing DMs, because of the District Line’s train formations until the Q Stock withdrawal in 1971. It was undergoing major restoration, including a complete rewiring from 600 volts to 50 volts for auxiliaries, lighting, etc, and replacement of worn out or obsolete equipment, as well as restoration of the car interior. One of the more fascinating parts was the manufacture of the central clerestory roof panels from sections of 5mm aircraft plywood, around a wooden former (colloquially known by the team as “the sarcophagus”). At the time, there were only two more panels to be made and installed. A major problem was obtaining the right type of rebated glass for some of the windows, as only one company in the UK made such glass.

**Q35 Trailer 08063** was one of the last built with a “clerestory” roof of the American-influenced style used by the Underground from 1905 through to the mid-1930s, apart from the 1914 E Stock and 1920s F Stock, which had elliptical roofs. Its restoration was more advanced, but there was still a lot of work to be done, especially with the interior, as the car was originally built as a Trailer Composite, offering first class between 1935 and 1940, (from when first Class was abolished during WW2) with smoking and non-smoking 1<sup>st</sup> Class saloons and a small 3<sup>rd</sup> Class smoking saloon. The doors between each saloon (two doors in all) would have to be constructed and fitted, along with ‘Briton’ automatic door closers. The company who made the originals still existed. Car interior lighting was wired in series, at line voltage, so if a light bulb was removed, the other light bulbs went out or dimmed. There was one ‘odd’ light, which was positioned above one of the vestibules, and could easily be reached by anyone wanting to remove the bulb! – not an ideal location with a 600v supply.



Q35 train at Hammersmith depot on the Hammersmith & City line in 1936. 1998/58918

## Q stock trailer car 08063 (1935)

Trailer car 08063 is the Museum’s only Q35 car. Built in 1935 by Metropolitan-Cammell Carriage and Wagon Company Ltd, it was originally designated as N stock. It ran in passenger service until 1971.

This was the last type of car built with a raised clerestory (pronounced ‘clear story’) roof and with hand-operated passenger doors. Air-operated doors were installed when the car was re-designated Q35 in 1950. Until 1940, the car also had separate first and third class accommodation, which followed the practice on national rail services.

The car was donated to London Transport Museum by the London Underground Railway Society in 1997. The current restoration project builds on earlier work by the society, led by the late Bob Greenaway. At present the car has a 1960s interior.



In the 1940s and early 1950s, the car was part of the H (**H**and worked door) Stock, until it was converted to Q35 Stock with air operated doors. This particular car had originally been purchased and preserved by the LURS on its withdrawal in 1971 but was donated to the LTM in 1997. There is a poster (*Left*) about this in one of the car windows:

It was clear to see that between the two visits, progress was being made on the restoration of the three Q Stock cars.

It is planned that all three cars (4416-08063-4417) will form a Q Stock Heritage Train for operation on certain parts of the LU network, although the 4LM Scheme with TBTC will be a bit of an obstacle. All three cars will eventually be moved to an outside contractor for full overhaul of electrical, air, and safety systems, with a potential target date of September 2024 for entry into heritage service (alongside the 1938 Tube Stock unit and Met Electric No.12 “Sarah Siddons” with LU’s ex-BR 4-TC unit and ex-LMS Special Inspection Saloon No.17 “Florence Nightingale”).

At the present time, G/Q23 DM 4184 is not included in the restoration project, but could be if sufficient funds became available in the future. It is currently stored outside under a secure tarpaulin.

After this, the groups were able to go inside the 1904 Met Saloon Driving Trailer No.4 (sadly fire damaged, but otherwise intact), which was the only survivor of the original Met electric stock; the 1927 Tube Stock DM 3327, the 1983 Tube Stock DM 3730 (not a successful design because of its single leaf doors); R49 Stock DM 22679, which brought back many memories for a lot of us who travelled on the “Dizzy” from the 1950s until withdrawn in 1983, and refurbished C77 DM 5721. Even its successors, the D Stock, has also gone, although DM 7012 is stored outside under a tarpaulin. The 1986 Tube Stock prototype DM 16 (the green one!) is also stored outside under tarpaulin, as there is simply no more room inside the train shed.





**Above:** Two views of the fire-damaged 1904-built Metropolitan Saloon Stock driving trailer. The 1904 cars were distinguishable from the 1905 and 1906 batches in having narrower saloon windows. The clerestory is evident in both photos, but the remains of the decorative ceiling panels (Right) may still be seen, despite the damage.

**Left:** The Metropolitan Railway coat of arms seen on the side of Milk Van No.4.

**Below:** More modern exhibits are the 1967 and 1972 Mk1 Tube Stocks (Left), identical in design but built for ATO and crew operation respectively, and the interior of Jubilee Line 1983 Tube Stock (Right).



**Left:** The famous 1938 Tube Stock four-car unit. Nearest the camera is the original 10012, first delivered on 11 May 1938 and part of the first train into service on 30 June 1938.

The five preserved cars of Pre-1938 Standard Tube Stock were in varying degrees of preservation. 1927 Tube Stock DM 3327 was complete (it's the ex-Science Museum one), but the other four are in varying stages of restoration – 1927 Tube Stock DM 320/3370/**L134**; 1934 Tube Stock DM 3693/**L131**; 1925 Tube Stock CT **5279/S27**; and 1923 Tube Stock Trailer 846/7296/**S49**. The two DMs are in Departmental

yellow livery and have had some cosmetic restoration commenced, with L134 having had its cab front painted train red. L131's cab and equipment compartment and one side of Trailer S49 have been stripped back to bare metal. The other side of S49 still bears its former Network SouthEast livery, more than 30 years after it returned from the IoW Island Line in 1990 (with Control Trailer S27 and three other now-scrapped cars, two DMs and a Trailer). The CT is currently in a brown rust preventive primer, but





nothing further has been done to it. The cars are currently being used for storage of seats and other small items and are not able to be accessed, except by Museum staff.



**Above:** The exterior and interior of 1927 MCCW DM 3327, originally preserved in the Science Museum. Two examples of seating moquette are on display.

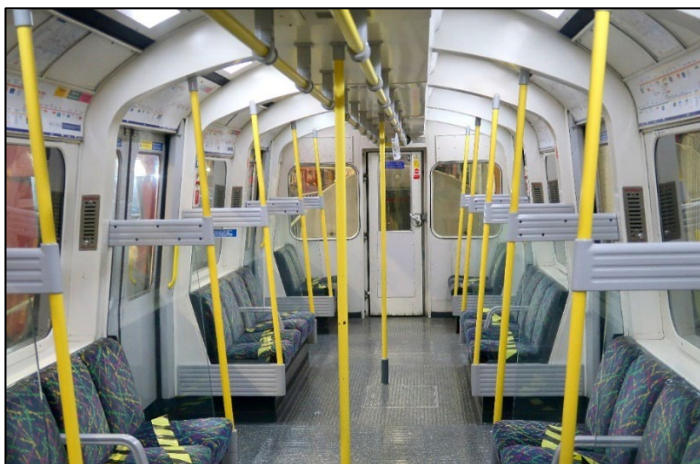
**Below:** Work has begun on the cosmetic restoration on former pilot motor cars L134 (Left) and L131 (Right).



**Below:** Interior of C77 DM 5721 in the LT Museum at Acton, looking towards the trailing end. Refurbishment in the early-1990s saw windows cut into the car ends.



**Below:** The only survivor of the Waterloo & City Line's class 487 Stock of 1940 is motor car 61, seen at the equipment compartment end after restoration in Network SouthEast livery.



After a short tea break in the lecture room, we were shown round the Poster, Art, and the "Small Objects" Stores. The posters and artworks were fabulous, with many well-known artists' and designers' works in the collection, many of which would be familiar to many LURS members. The "Small Objects" collection ranged from large to small scale models of trains, buses, trolleybuses and trams, including a 5" Gauge live steam model of an original Beyer-Peacock A Class 4-4-0T, through ticket machines, signalling equipment, signs, uniforms, seating moquettes, etc, to the many trophies awarded by and to various LT associations, especially sports.



The final area on the visits was the station maps, signs, and large architects' models collections. Of interest was the original Harry Beck Underground 'map' of the mid-1930s, which was more of a line diagram than a map, and a real stroke of genius, and the 3D model of King's Cross LU station, constructed for the Fennell Inquiry into the 1987 King's Cross Fire Disaster, to show the inquiry how the station was arranged on the day of the fire and where the fire had started on the up Piccadilly Line escalator, which had wooden treads at the time. This led to the complete ban on smoking on the entire national rail and Underground networks. Also, a 3D model of Oxford Circus, when the station was rebuilt for the Victoria Line in the mid-1960s.



**Above:** The sign outside the former signal cabin at Hounslow West, which opened on 28 November 1926 and closed on 25 March 1972. It was replaced by a temporary cabin on the embankment adjacent to platform 1 until that closed on 19 July 1975 when the Hatton Cross extension was completed and opened to the public.

**Left:** A station line diagram from the eastern end of the Piccadilly Line at Arsenal showing westbound stations. The extension to Heathrow Central (today's T2 & 3) is an

add-on from 1977. Note that both King's Cross and Earl's Court do not have apostrophes. There is no mention of the Aldwych branch from Holborn.

We were also able to take brief views of the buses, trams, and trolleybuses, some of which were contemporary with the later Q Stock. The Friends of the LTM sales stand was opened especially for us, which was much appreciated, and they took some money, all to help LTM.

It is hoped to plan further visits to LTM Acton Depot in the future to see how preservation and restoration of the Underground rail vehicles, especially the Q Stock, has progressed.



The Society would very much like to place on record its sincere thanks to Keith Raeburn, Geoff Thorne, and Steve Green for hosting our visits to the Museum in such an informative and entertaining way.

**Left:** Tread plate from Q35 trailer 08063, which was "BUILT BY METROPOLITAN-CAMMELL CARRIAGE & WAGON CO LTD 1935".