

MEETING REPORTS

“SEATS OF LONDON: THE HISTORY OF MOQUETTE”

Presented by Andrew Martin

A talk to the Society given on Tuesday 14 March 2023
at The Gallery at Alan Baxter, Cowcross Street, London, E.C.1

Andrew is the author of the book “Seats of London” and is published by Safe Haven, which is available from bookshops and online.

The term “Moquette” is derived from the French for a light carpet. In the case of TfL’s use, it is made from sheep’s wool, with a small percentage of nylon. This makes it fire resistant and has thermal properties to keep warm in winter and cool in summer. It is often woven as loops of thread, which can then be cut or uncut. Either way, this gives a deep pile or texture to grip people to the seats. Moquette is a luxury, expensive item and many other transit systems now use a much thinner, cheaper, material or even just plastic, cork or stainless steel for their seats.

The Metropolitan Railway was one of the first to have moquette, although very little is known about it as all photographs are (obviously) in black and white. In 1898, *The Engineer Magazine* described the seating in each of the three classes thus: “Third Class: seats covered in Rep (a tough corded fabric), Second Class was velvet, and First Class featured a rose-coloured Baghdad finished with silk lace and cord”.

In the 1870s and 1880s, the earliest London buses had wooden bench seats with no padding. This was only provided for the driver’s seat and the one next to it which had leather coverings. When the London General Omnibus Company introduced its B Type Bus from 1910, this became the world’s first mass produced bus. It was open top and thus those seats were just wood. However, the lower deck had moquette on its seats and a swatch of the material was found when the London Transport Museum acquired a B Type in 2014. This is a red and black pattern reminiscent of a Celtic Cross. One of the oldest textile companies: Holdsworth’s of Halifax (now owned by Camira) re-created this pattern to reupholster the seats on the Museum’s two buses. This design “Pimlico” is one of those that the London Transport Museum now sells on furniture and furnishings. The biggest seller is the 1970s District Line D78, which features black, brown, orange and yellow repeating, stacked, bars.

Throughout his talk, Andrew discussed tram, trolleybus and bus moquettes, but for the sake of space, I shall concentrate upon those used on the Underground.

During the 1920s, Frank Pick and his colleague Christian Barman began work to harmonise the iconography and image of the Underground Electric Railways Limited [UERL]. Results from this include the roundel, Johnston Typeface and many posters. The first moquette, unfortunately the designer’s name is lost to history, was used across Underground trains, buses, trams and trolleybuses. It was an elegant and demure combination of teal and light brown, mainly the later as this was a colour often used on railway architecture and signs. The overall colour scheme can be described as stone, buff or dried mud – whatever, it was good at not showing the dirt!

By the later 1930s, technology had advanced to allow all motors to be placed below carriage floors and so customer comfort could become more prominent. The 1938 Tube Stock, for the Bakerloo, Northern, Central, Piccadilly and East London lines, along with the O Stock on the Hammersmith and City and other Sub-Surface lines, featured deep, well sprung seats in a cheerful assortment of mainly red, green and cream.

Enid Marx (second cousin, twice removed of Karl Marx) was trained by Paul Nash and Edward Johnson. She designed the red diamond on green grid moquette for the O Stock. Green and red were often used as an effective colour contrast combination and to symbolise town and country. Marx also designed the red/green dyad “Shield”. Its flowing motif has been said to resemble the Christian symbol IKTHIS. Shield is featured in the British Transport Film “Looking at Transport” released in 1959 in a montage of bus stops, litter bins and textiles which according to the voice-over “all achieve a decorative effect”.

Paul Nash was invited by Christian Barman to contribute to the 1938 Stock moquettes, although neither of his designs were eventually chosen and these can be seen as very much a “footnote” to his career as a textile designer. He had worked a war artist during World War One and then started designing textiles in the early 1920s. Some of his designs were featured in an exhibition at Heal’s Store on

Tottenham Court Road, and he was a founder member of the Industrial Artists Society. In 1936 he designed a series of posters for LT encouraging the use of season tickets. His design “Alperton”, which featured a black and grey geometrical design, was used for seats at Piccadilly Circus station.

Another designer of the late 1930s was Marion Dorn. She was born in America and moved to London in 1923 and started designing scarves, curtains and carpets for clients such as Claridge’s, the Savoy Hotel and Cunard Cruise Lines. She married Edward McKnight Kauffer, one of Pick’s most radical poster designers and they became the “power couple” of Underground design. Her best-known design is Colindale (aka: Leaf) which features red and green leaves on the vine, which was used on the Northern and Bakerloo lines from 1938. Dorn’s obituary, published in the Guardian in 1994, described her as “seeing things through precise mental images of colour, texture and form”.

The 1938 Stock was gradually replaced by the 1959 Stock. This featured a moquette which Andrew dubbed “Post Office”. This is a complex pattern of post-box red and black on a silver background. It was designed in-house by Holdsworth’s of Halifax and David Holdsworth recalls working on it during his early days with the family firm.

Although Christian Barman left LT during the 1940s, he continued to work at the Transport Commission until his retirement. He was awarded the OBE for services to transport in 1963 and died in 1980. He is memorialised by the Barman Moquette which was designed by Harriet Wallace-Jones and Emma Sewell in 2011. This was the winning entry out of over 300 designs from around the world. LT’s objective was to find a new moquette which would reflect “the spirit of London”. Wallace-Jones and Sewell’s design features a grid of squares with representations of landmarks: London Bridge, London Eye, St. Paul’s dome, and (Harriett claims) Battersea Power Station’s chimneys. As an aside, Harriet also recently designed the lavender-blue moquette for the Elizabeth Line.

During 2007, the Piccadilly Line’s 1973 Tube Stock was refurbished with a new moquette called “Tube Lines”. This features red, green and orange lines and shapes on a blue background. “The Londonist” website described this design as looking like “a 12-year-old boy’s bedroom in the early 1990s”. After nearly 15 years of use, this moquette now often looks baggy and worn.

Andrew summed up the benefits of moquette in that the “key is cosiness, you are warm and cosy underground even when it’s cold and rainy in the streets above”.

There was a short comments and Q&A session, then the meeting heartily thanked Andrew in the usual manner.

Amanda Griffiths

THE METROPOLITAN ELECTRIC TRAIN

Presented by Dr. Piers Connor

A talk to the Society given on Tuesday 9 May 2023

at The Gallery at Alan Baxter, Cowcross Street, London, E.C.1

We welcomed Dr. Piers Connor to the May 2023 meeting, who gave an illustrated presentation “The Metropolitan Railway Electric Train”. Piers began by looking at the Metropolitan’s route towards electrification, which came about because of pressure from the public and politicians about the tunnel smoke caused by steam trains.

The early trials weren’t driven by the Metropolitan but by entrepreneurs who wanted to promote their electric traction systems. There were disputes between the Metropolitan and Metropolitan District as to the system to be adopted for the operationally shared Circle Line, and once (eventually) settled, the MDR’s favoured system was adopted by both companies as it was more advanced and had been tried and tested in America. (The Metropolitan’s scheme would have been financed by Ganz of Hungary, which would have been a 3-phase overhead system – and totally unsuitable for the Underground). The initial thoughts for electrification were just for the Circle Line because it was in tunnel – the rest of the railway would continue with steam traction.

Electric locomotives were among the early considerations but it was decided to use electric multiple unit control with ‘saloon’ type rolling stock. However, everything was very much trial and error and many modifications took place on a regular basis right up to the time the Met. was taken over by London Transport in 1933. The ever inconsistent Metropolitan Railway reverted to compartment stock in its last years and was the last type of train built for the company – it was what became known as T Stock.

In the end, the Metropolitan had a multiplicity of stocks, summarised thus:

- Those taking part in trials.
- Electric locomotives.
- Saloon Stock – seven different varieties built 1904-1921, known as ‘car stock’, the earliest of which had open gangways at the end until they were modified from 1911.
- Ashbury or Bogie Stock – built 1898-1900 prior to electrification.
- Two varieties of loco-hauled compartment stock – some new and some conversions.
- Main line compartment stock – initially conversions from 1910 and then new builds between 1912 and 1923.
- Electric compartment stock, designated MV (with vacuum brakes) and MW (with air brakes)
- Saloon Stock for the Hammersmith & City Line which was jointly owned (on a 50-50 basis) by the Met. and the GWR.

After the formation of the LPTB in 1933, electrical engineer Cyril Birkbeck from Acton Works and a team of Underground engineers were sent to Neasden to analyse and inspect the Metropolitan’s stock. In short, the condition of the stock caused great concern!

Much is owed to Frank Sprague from the USA, the inventor of the multiple unit system, which had been developed from the operation of lifts, and Thomas Parker, who was based in Wolverhampton. He was involved with the Metropolitan’s experiments at Wembley Park in 1900 and obtained permission to develop previous experiments that had taken place outside London. The test track at Wembley Park was about 1,200 yards long, from the station to near Watkin’s Tower. Two bogie coaches were built for the trial with Parker’s equipment. After the experiments had ended the two coaches were absorbed into the Bogie Stock fleet.

More well known was the next experiment, which was conducted jointly with the District, using Siemens equipment on a train between Earl’s Court and High Street Kensington with ‘outside’ current rails, which was deemed more successful than the Wembley experiment and thus electrification plans were advanced forward. To that end, the Met. ordered 10 electric locos built by Metropolitan Amalgamated with British Westinghouse equipment and a further 10 built at Saltley with BTH equipment. Finally, there were 20 locos built in 1922 at Barrow-in-Furness, which replaced the first 20.

The first batch of ten had a ‘camel body’ – a centre cab with sloping body either side – and were fitted with both Westinghouse and vacuum brakes. The locos and all Metropolitan driving motor cars were ‘double equipped’ – i.e. had two sets of traction equipment, which were twice as powerful as the contemporary District trains.

The second batch of electric locos had a cab at both ends. The 1922 locos were different again in design. Equipment on the 1905 locos was ‘scattered all over the place’, whereas the equipment on the 1907 locos was on both sides of a centre gangway. The 1922 locos had the equipment in the central area with a gangway each side.

Because of the complexities of this group of stock, only a brief summary will be attempted here.

The 1904 Stock motor cars had a driver’s compartment with luggage compartment behind, passenger saloon and an open end platform with gates. The initial shoe gear provided was at the ends of the shoebeams beyond the radius of the bogie. This meant that shoes drifted off the centre line of the conductor rail on curves and hooked under the current rail lip, thus causing the current rail to come away from the supporting ‘pots’. This problem came to light on the District side of the Circle, where the District had used cheaper rails. The completion of the Circle Line electrification turned out to be six months late because all the (Metropolitan) stock had to be modified. We also saw that one of the 1904 motor cars had been fitted with a pantograph to test overhead traction at Trafford Park. When the Uxbridge line had been electrified, it was desired to run short trains comprising a motor car and two trailers, which meant that in one direction, the train was being driven from the rear. The Board of Trade intervened and subsequently, as the cars were double equipped, the equipment from the trailing end of a motor car was moved to one end of a trailer, creating a driving trailer. The 1904 order included enough cars to run seven-car trains, of which, more below.

The 1905 Stock was very similar, except that the car body had wider saloon windows and the ends were enclosed with hand-worked sliding doors. In other respects, they were the same as their 1904 counterparts. Nonetheless, they still had a man on each platform to open and shut the doors. The 1904 cars ends were subsequently enclosed. In the meantime, the desire to run seven-car trains was thwarted because platforms were too short, so the run-on 1905 order was reduced to allow 6-car trains, which included cars with gated ends to match the spare 1904 cars.

The 1906 Stock had steel frames and were delivered with enclosed ends. They comprised BTH equipment, which had been the preferred choice of the other Underground lines – the CLR, three LER tube lines and the District, which was known to the American engineers designing the different lines. The 1906 driving trailers were built as such rather than being trailer conversions. Destination blinds originally provided above cantrail level were difficult to change and maintain and they had all been removed within two years. The Hammersmith Line stock, also built in 1906, was similar but had an additional (purple) light at roof level to denote it was an H&C train and not one on the Metropolitan – there were no train describers at that time. The droplight windows on the 1906 Stock were soon replaced by tilting opening windows as they soon distorted in bad weather and seized up.

The Metropolitan soon discovered that passenger loading and unloading was slow, because of the end single doors. A programme was then begun to provide centre double doors. This idea was then included on the next batch of stock – the 1913 Stock – but was basically the same layout as the 1906 cars but with the centre door built in. The cars had elliptical roofs rather than clerestory, which had highlighted the problem of water ingress and making the interiors cold. It had become apparent for equipment reliability that additional motor car spares were always needed. 23 cars had British Westinghouse equipment and 10 of them swapped it with the BTH equipment with the second batch of electric locos, which meant all 20 locos then had British Westinghouse equipment.

The next order was for 1921 Stock and although it was the same general design, had three doors on trailers and two on motor cars, and they were mainly allocated to the Circle Line. This was the last of the newly-built Saloon Stock, apart from two experimental 1925 cars which had the equipment behind the driver instead of under the floor. With so many Saloon Stock variations, it was apparent that the Metropolitan was not choosy in organising its train formations and basically anything was to hand was used, without any due regard to cosmetic appearances.

The wooden car bodies of the earlier batches were far from crash-worthy and we were shown the result of a collision at West Hampstead on 26 October 1907.

The V Stock comprised various train lengths of Saloon Stock, comprising any of the 1904-21 types. It is believed that the 'V' denoted 'Vestibule' Stock. These worked the Circle and Uxbridge services. (It was noted that the 'main line' was Farringdon to Paddington – which seems odd today! – and north of Baker Street was the 'extension line' or 'the Wood line' – the first part of it served St. John's Wood).

In 1919 a six-car set of Saloon Stock was converted into what became known as the Hussle Train. A number of single doors were provided along the car which was aimed at improving passenger flows at stations. It was found that the costly conversion offered no benefits in passenger flows and was taken no further.

The H&C operated Hammersmith – Aldgate/New Cross/New Cross Gate and were often short of stock and trains from the Metropolitan were loaned.

We were shown a photo of two Saloon Stock motor cars fitted with Metadyne equipment in 1934 that had become a prototype for the forthcoming O and P Stocks.

One of the first things the new LPTB did from 1934 was to upgrade the Circle Line trains, taking 90 cars and refurbishing them, creating 18x5-car trains, seven for each Circle and four spares – five-car Circle trains had been the norm since 1926. It is thought that only the first train was outshopped in red and cream, the remainder in all red. The luggage compartment behind the driver was converted into passenger accommodation with eight extra seats but the cost of doing the other 17 in red and cream was considered not be cost effective. The guard was demoted to the rear cab in consequence, which continued with the H&C O Stock replacement from 1937.

Piers then continued with the Ashbury or Bogie Stock, which were conventional vehicles but shorter in length than more modern stocks. Both first and third class carriages were provided but from 1905 some were converted to electric working, using a Saloon Stock motor car for motive power. Subsequent conversions from 1908 saw driving motor cars included with the equipment behind the driver – there was no room for it on these short wheel based vehicles.

The N Stock followed and was formed into four-car sets. Full-length block trains of M Stock were made up of Ashbury Stock and then examples of W Stock formations were seen. The first complete train of new stock was in 1927 and comprised compartment stock with vacuum brakes – the MV Stock. Those with Westinghouse brakes were designated MW Stock. It was also the intention to run the new motor cars with existing steam coaches.

In short, the Met. had so many varieties of stock to the extent that even the staff had difficulties in understanding what went where – there were trains with Westinghouse equipment and trains with BTH equipment. Moreover, there were trains with 200 h.p. motors and others with 150 h.p. motors, neither of which could be used together. To identify the differences between the types of cars, symbols were added to the car ends.

There was also VT Stock which comprised compartment motors and Saloon trailers. The two shuttle cars were then covered, both being conversions from previous mishaps (the West Hampstead collision and the other following a fire at Swiss Cottage). They had the ability to run singly on services that had light traffic or could be strengthened by adding a Saloon Stock driving trailer if traffic warranted it. The final stock built for the Metropolitan was the steel-bodied version of the MW Stock, which had GEC equipment based on the Swiss company Brown-Boveri.

Piers then went on to show the different types of cab interiors and the different equipment provided and then the Fox's bogie. Samson-Fox was an innovator and founded the Leeds Forge company. One of the things he designed was a bogie frame, which became the standard Metropolitan pressed steel bogie from 1898 until the 1920s.

The meeting then showed their appreciation to Piers for an interesting and informative presentation, who promised us more details of "The Metropolitan Electric Train" in another series in *Underground News*.

Brian Hardy