

THE CENTRAL LONDON ELECTRIC TRAIN

5 – CLR PROGRESS

by Piers Connor

INTEREST

The opening of the Central London Railway (CLR) generated a huge amount of interest, not only in London but around the country too and even around the world. Many local British newspapers carried reports of the opening by the Prince of Wales on 28 June 1900 and then continued to publish bits of trivia as and when they could get hold of them. One such piece noted that the railway had collected 1,000 umbrellas that had been left on the railway during the first three months of operation. I found some of these reports whilst researching the history of the line so, this month, I've related some of the more interesting bits and pieces from newspapers of the period. I have also included some photos that add details to the previous articles in this series.

ON THE JOB TRAINING

Once the line started carrying passengers, the Central London management soon went into a steep learning curve, not only about the volume of passengers they were getting but also about some of the less scrupulous habits of some of them. The railway opened to passengers on 30 July 1900 but, within three weeks according to a newspaper report about the line¹, CLR managers realised that some of their passengers had already latched on to a system of ticket fraud.

Normally, a ticket was purchased for a single trip and it was handed to a ticket collector as the passenger passed through the barrier to the lifts at the beginning of his journey. The collector was supposed to examine the ticket and then drop it into a "cancelling box", the cancelling being done by operating a lever. At busy times, the collectors allowed passengers to drop their tickets into the box themselves because of the press of people passing through. The ticket collector would "cancel" the ticket as it was dropped into the box but he had little time to check that it was valid. It was soon found that some passengers were taking advantage of this system and were using other tickets, from buses, trams "or other imitations of tickets issued by the Central London Railway" as it was described at the time. The directors were said to be looking at "how such methods of deception could be prevented".

The same report, dated 21 August 1900, referred to "the present 5-minute service" and commented that sometimes, the 30-second dwell allowed for trains departing Bank was considerably extended by overcrowding, causing such delay that the service was often reduced to 10-minute intervals². The new railway was learning about crowds of commuters as people used the new trains to get to and from work.

In reality, according to the Chairman, speaking at the half-yearly meeting of CLR shareholders on 8 August 1900, the service, which had opened a week earlier with a 5-minute headway, was to be reduced to 4-minutes at peak times from 10 August 1900 and that this would be reduced further "as fast as trains could be got ready". This is interesting because it confirms something I suspected; that, during the first few weeks of operation, the CLR couldn't provide the 2½-minute service originally planned because they didn't have enough rolling stock. Readers may recall that, in Article No.3 of this series, I noted that 18 of the cars did not arrive until 1901. In fact, it is likely that little more than half the total fleet of 168 cars was ready for service by the public opening in July 1900.

The London Standard report also noted that, in order to regulate the flow of passengers to platforms, it was decided that certain stations should have "some form of electric communication" established to warn liftmen that a train was approaching. Exactly what this was or how it worked was not explained in the report but it is likely that it involved the signal box providing an alert in the form of a bell or buzzer at ticket hall level. This was presumably an attempt to reduce the crowding on platforms so that trains could get away within the planned 30-second dwell.

¹ The London Standard, 21 August 1900.

² Readers may remember that trains reversing at Bank did so via a siding to the east of the station, so the 30-second dwell was the time between the train arriving from the siding and its departure westwards.

The report also said that, even after only three weeks of operation, the number of passengers per day was approaching 100,000. Assuming a 4-minute headway, this would have amounted to something like an average of 660 passengers per train during a peak hour, virtually equal to the 665 capacity for a 7-car train, so it's not surprising that there were complaints of overcrowding. One writer to the *London Standard*³ a few days after the line opened to the public suggested that the gatemen should be instructed that no more persons should be admitted to a car once all the seats were occupied. He was surely to be disappointed.

SMOKING

As we have seen in earlier articles in this series, the end cars of Central London trains at least, were reserved for smokers. Smoking was allowed in all the lifts and some passengers complained about it. One correspondent to the *London Standard*⁴ wondered if, "it is too much to ask that the business man should extinguish his mutational cigar or the artisan his evening pipe for the convenience of non-smokers during the few seconds they are in the lifts to and from the platforms". It seems from his language that the writer considered that the cigar was a physical extension of the business man and that removing it might require surgery. In a curious incident a few weeks later, smoking was to lead to the death of a member of staff.

This was the Central London Railway's first reported operating death, which occurred on Saturday 6 October 1900 when a gateman, Mr. James Watts Field, aged 25, was killed whilst on duty. He was working on a westbound train between Bond Street and Marble Arch when a passenger noticed a series of "thuds against the car". The train arrived at Marble Arch but the end doors between the saloon and the entrance platform didn't open as usual. The passenger, who wanted to alight at Marble Arch, opened the doors himself and discovered that the gateman was missing. He alerted staff and a search was initiated.

In the newspaper report of the inquest⁵, it was said that another member of staff went back "in a spare motor"⁶ to look for Field. He was found, face down in the tunnel, still alive but he died on the way to hospital. It transpired that, as the train was leaving Bond Street, Field had told a passenger who was smoking that he was in a non-smoking car and that he should stop smoking. He then returned to his platform. He subsequently tried to observe the passenger to see if he had stopped smoking by leaning round over the gate to look at him through the window from outside the car. He apparently hit his head on a signal and fell between the train and the tunnel.

SUICIDE

In an unrelated incident, there was a suicide on the Central London Railway at Notting Hill Gate on Thursday 24 September 1903. It seems to have been the first such to have been reported. The inquest, held on 29 September, heard how the deceased, John Cocks, a gardener aged 60, jumped off the platform as a (multiple unit by then) train approached and was struck full on his side as the driver, Mr. Fred Pullard, applied the emergency brake. Pullard reported that he then "backed the train up" and, "seeing as the man, who had dropped into the culvert, made no movement, he sent the train on again so as not to alarm the passengers". The newspaper⁷ reported that, "the train was full of theatregoers on their way home" and that, "the body was pulled out when [the] train had gone on". No such operating luxuries are permitted today, the minimum time required to get the service started after a suicide usually being at least an hour and sadly, often much longer.

THE BLAME GAME

There was, in the wake of the departure of the Central London's electric locomotives, some attempts by those responsible for the design to distance themselves from the fallout. The Central London's suppliers, BTH, employed H.F. Parshall as their principal engineer during the design stage. He adapted the design of the locomotive supplied in 1895 by the American General Electric Company (GE) for the Baltimore & Ohio Railroad in his specification for the CLR locomotive. In the discussion

³ *London Standard*, 2 August 1900.

⁴ *ibid.*

⁵ *Morning Post*, London, 11 October, 1900.

⁶ This was no doubt the spare locomotive that they kept at Marble Arch.

⁷ *Exeter & Plymouth Gazette*, 29 September 1903. Obviously, West Country readers were fascinated by reports of railway suicides on the London tube railways.

following the presentation of a paper by F.W. Carter to the Institution of Civil Engineers in 1916⁸, Parshall admitted his involvement in the Baltimore and Ohio locomotive project. He was, he said, on the technical staff of GE at the time and was consulted with regard to the CLR design. His recollection was that “so much time was required by the electrical problems that the staff were not in a position to consider the more difficult mechanical issues”. It seems that, in dealing with the new electrical systems, they rather neglected the issues of mass, dimensions and suspension. Curiously, he went on to say how “the Central London locomotives were designed chiefly under the direction of the late Sir Benjamin Baker⁹ and for the problems presented at that time they were the only real solution. It was considered absolutely unsafe to run power-cables underneath the trains and gears at that time were so noisy that it was held to be more or less impracticable to use geared machines”. Subsequently he noted, “a certain amount of trouble from vibration – some psychological and some physical – occurred, and three of the locomotives were converted into geared machines, whose performance was in general more satisfactory, but not remarkably so”. These remarks, particularly the one inferring that some of the problems over vibration were partly “psychological”, could be seen today as thinly disguised “spin doctoring”.

Parshall went on to relate how the cost of the geared locomotive was rather higher, but “it ran more smoothly because there was less dead weight on the axle”. He described how the multiple-unit system, was designed “on the lines of a locomotive built at the end of the motor-car”. What he really meant was that the multiple unit design put half a locomotive on each end of the train in the front half of a motor car. He also said that there was “no very great gain in operation in the motor-car. Except for the matter of “mobility” (presumably he meant less weight), he had been “rather in doubt as to whether a motor-car was the best solution. The cost of maintenance of a motor-car had been found to be rather higher than that of an ordinary car plus a locomotive, and there were other advantages in the use of the locomotive.” He didn’t go on to say what these were, although one could speculate that he meant that you could separate the locomotive from the train and quickly swap it for another if a fault developed. He obviously hadn’t considered the operating advantages of multiple unit operation – eliminating loco changing at the terminals and speeding up the operation to the extent that they could increase the service by 25%. My view of Parshall is that he seems to have been totally focussed on electrical matters and omitted to give the mechanical and operational systems the attention they needed. It cost the Central London dear. This didn’t stop him becoming chairman of the company in 1913.

During the same discussions, John Aspinall, the much respected locomotive superintendent of the Lancashire & Yorkshire Railway, told how Sir Henry Oakley, the CLR chairman, and Sir Benjamin Baker, asked him to look at the trains and, during his inspection, he was quite surprised to find that the locomotives had no springs. Aspinall “ventured to say to Sir Benjamin that such an engine would knock itself to pieces on the road, to which Sir Benjamin retorted: ‘That cannot happen, because this road is laid like a billiard-table and the locomotives will roll upon it just like a billiard-ball’.” Aspinall pointed out that “as soon as the brakes were used, flats would be formed upon the wheels and the engines would begin to jump”. He went on to say that “he had not the slightest doubt that a great deal of the vibration was due to the fact that the wheels, instead of being circular, had become polygons”. He was, of course, speaking on his own behalf and his view was not supported by the original Board of trade committee report. Being a civil engineer by profession, Baker would think that his track was perfect wouldn’t he? Since the locos were the responsibility of the supplier BTH and their manufacturer GEC, he would have had little to do with their design, despite Parshall’s assertion that it was done under Baker’s direction.

LOCO DISPOSAL

During the summer of 1903, once the multiple unit system had settled down, thoughts amongst the Central London’s managers turned to what might be done with the redundant locomotives. Initially there must have been some hope that they could be sold in working order to an existing electric railway but this was a very long shot. The locos had already been publicly condemned because of the vibration issues and they were unlikely to have had any takers on that score alone – assuming of course that any existing or planned railways were going to adopt a compatible traction supply

⁸ Carter, F.W. (1916), “The Electric Locomotive”, Proceeding of the Institution of Civil Engineers, Vol. 201, p. 221.

⁹ Baker was the chief engineer for the building of the railway. He died in 1907, so he was hardly in a position to defend himself against Parshall’s slur.

system. This was not to be. Only two machines were sold in working order, to Raworth's Electric Patents Ltd. These, comprising two of the three geared locos, were sent to the Metropolitan Railway's depot at Neasden for experiments with regenerative braking. Two others were used as shunters for the yard at Wood Lane. One of them, No.12, had geared motors and it survived until 1942. The other was scrapped about 1924.

As for the rest, it took until 1906 to get rid of them and, even then, the Central London had to do most of the work themselves. A report in the CLR board minutes dated Wednesday 21 November 1906, noted that a "Large number of tenders" had been received in respect of the invitation to purchase the remaining 24 locomotives. The offers were obviously all for the scrap value. They decided to go for the offer from T.W. Ward of Sheffield. Individual metals were separately priced and the CLR had to agree to break up the locomotives themselves, "the material being dismantled, properly separated, loaded up into trucks, [and] put on rails in London". It was recorded that "prices produce about £485 per loco excluding air compressors valued at £100 and some small electrical items". It was stipulated that the whole of the material had to be delivered by the end of March 1907.

PHOTOS

To provide some more background to the early history of the CLR, I have selected a few photos and added some detailed information as follows.

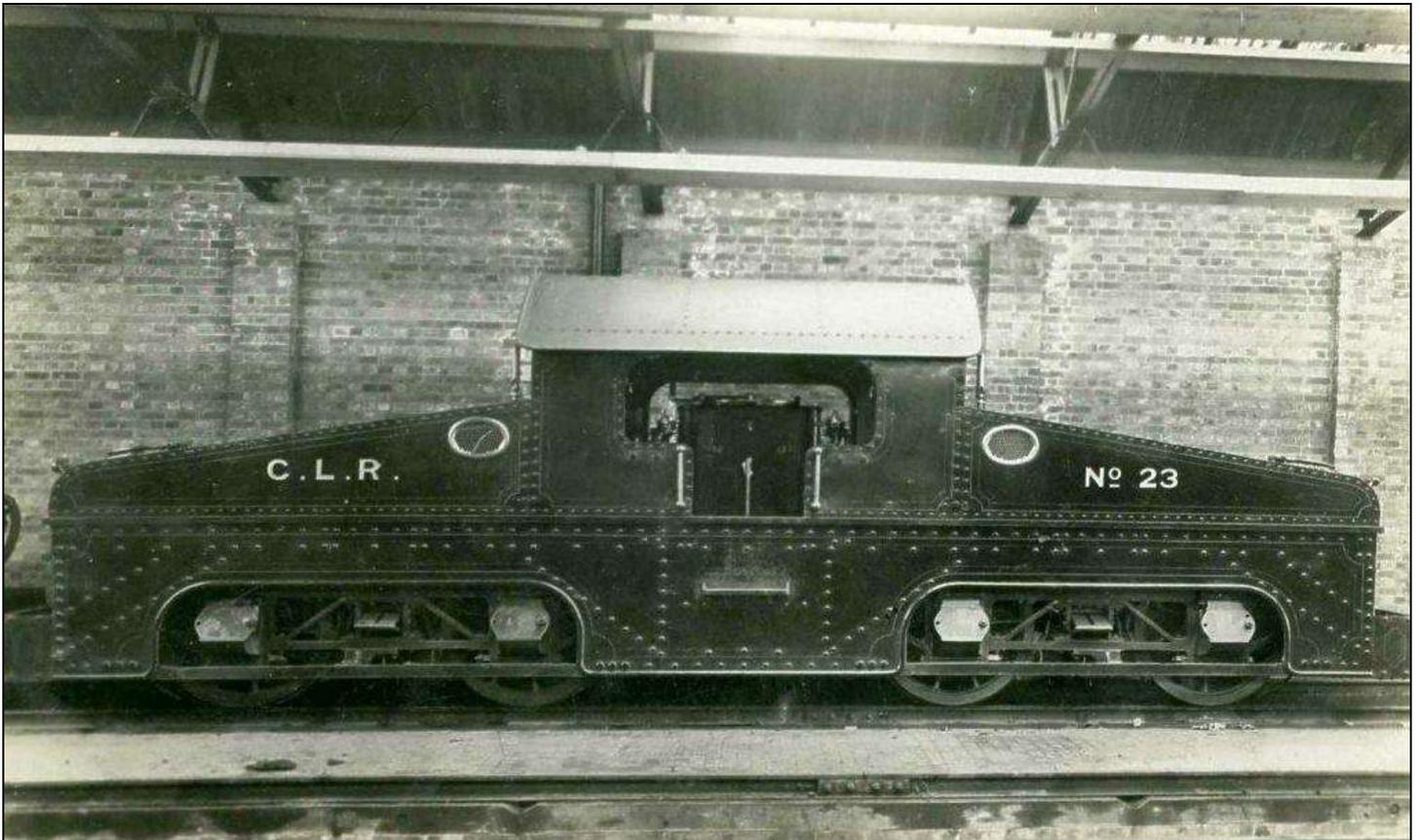


Figure 1 (above): A well-known photo of CLR loco No 23 inside the shed at Wood Lane. A point I didn't mention is that originally, the Central London ordered 32 locos. This was because it was intended that the line would go to Liverpool Street. In the end, they needed to save money, so the line was cut back to Bank and the locomotive order was reduced to 28 machines. In this photo, No.23 appears to be standing over an inspection pit. The huge power controller can be seen through the cab entrance together with two Westinghouse brake valves, one on either side. Two were provided to allow the driver to operate the locomotive in either direction from the same position. This loco has its original bogies but not its large lamps. How long these lasted as a feature on the fleet is not known and photos suggest that they were never fitted to the majority of the locos. One odd appearance in this photo is of the ducting that is apparently suspended over the locomotive from the shed roof. It is unlikely to be for lighting but it could be a cover for the overhead line equipment that was installed in the depot in 1901. Many years ago, I saw a photo of a CLR locomotive (No.4) with trolley poles mounted on either side of the cab roof but I don't have a copy. The late J. Graeme

Bruce mentioned in his book "Workhorses of the London Underground"¹⁰ mentions that there were two such locos.

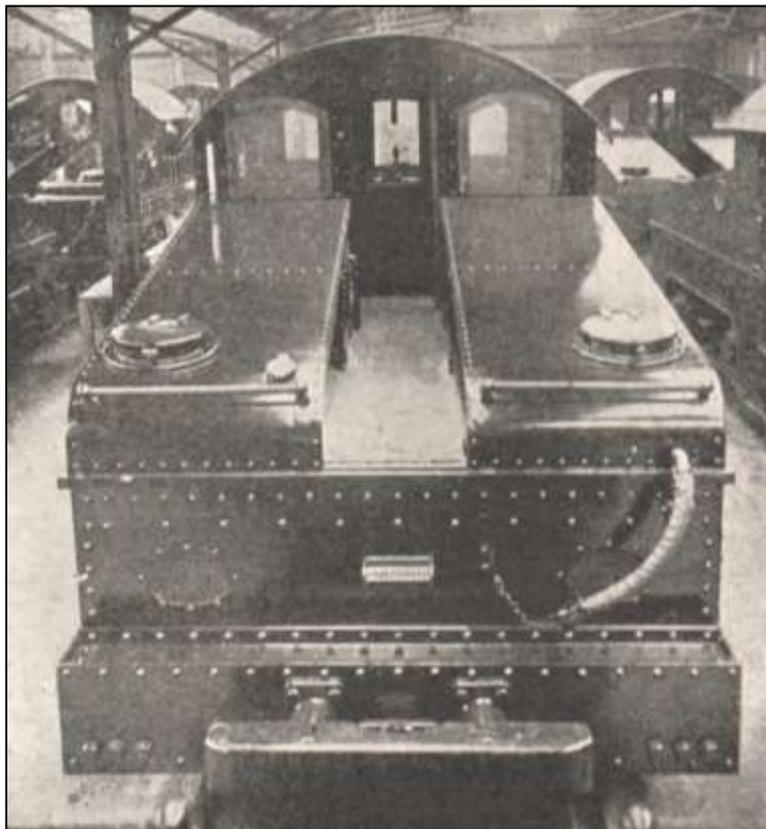
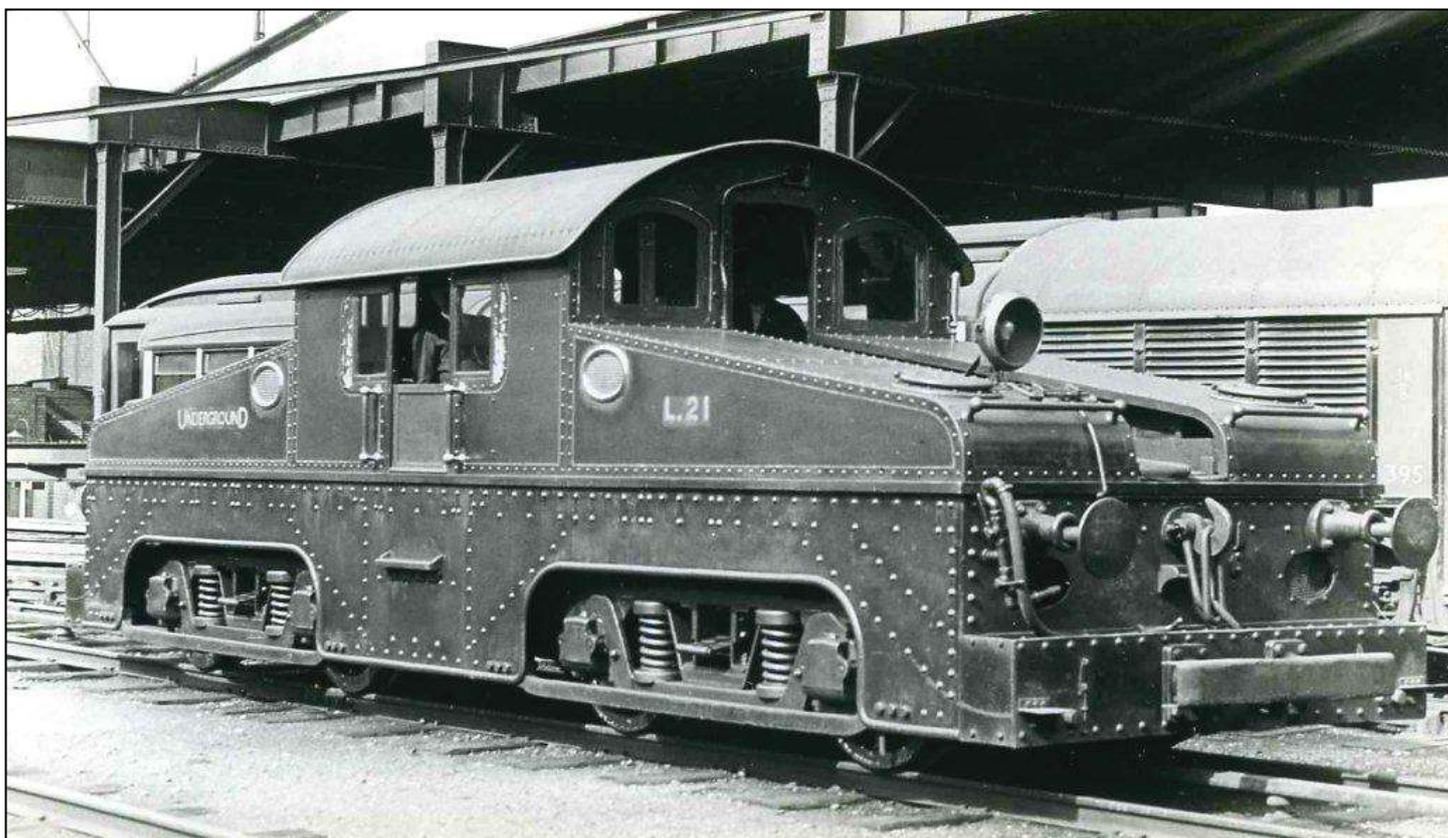


Figure 2 (left): The interior of one of the Wood Lane sheds with rows of CLR locomotives being painted. Some have already been lined, lettered and varnished, others are just painted. In this view, the wooden frames of the cab windows can just be made out. In the foreground, the lids of the sandboxes can be seen on the ends of the bonnets. On the left hand bonnet is the socket for the train lighting cable. On the front of the right hand bonnet is the brake pipe. A whistle can be seen in front of the left hand cab window, indicating that this is the driver's side so we are looking at the west end of the locomotive. Also, we can just see that the insides of the bonnets are exposed, to allow the resistors to be kept to a reasonable temperature. Photo published by "The King" magazine, June 1900.

Figure 3 (below): CLR locomotive No. 12 at Wood Lane after it had been renumbered L21 by the Underground in about 1929. It

was the last survivor of two locomotives retained by the Central London after they had been replaced on passenger trains by the 1903 motor cars.



The other one (number unknown) must have had its original gearless motors since No.12, as shown here with its 1901 bogies, was fitted with gears. We are told by Parshall that, in 1901, No.10 was gearless, No.12 was also gearless then and No.13 was recorded as geared. While we know No.12

¹⁰ "Workhorses of the London Underground", J. Graeme Bruce, Capital Transport Publishing, London, 1987.

survived with geared bogies, we should not be surprised that it was once recorded as being gearless. Swapping bogies was normal practice (and still is on many railways) so it is most likely to have been as a result of a maintenance swap. On the other hand, perhaps the records kept during Parshall's tests were in error – possibly just a wrong number gave us No.12 as gearless. Later alterations include a fully enclosed cab, side buffers, additional footsteps on each side of the headstock and a 3-link coupling to assist with shunting coal wagons to the power station. This machine survived until it was officially written off on 30 June 1942. I was told by J. Graeme Bruce that there were suggestions that it should be preserved but it was broken up so that the steel could be supplied for the war effort.

Figure 4 (below): The four experimental motor cars that had been converted from trailer cars in 1901 for the trial of multiple unit operation, as related in Article No.4 of this series, had an interesting later history. This photo, taken in the mid-1930s, shows the surviving two experimental motor cars equipped as battery locomotives. When originally converted, they were used to prove the multiple unit concept and led to the purchase of the 64 new motor cars that were to replace the original locomotives. They were renumbered 201-204 in 1903 when the new motor cars arrived, as it was originally intended to include them in the main passenger fleet but the Board of Trade didn't like the wooden framed switch compartments, so the cars weren't allowed to carry passengers for long after the experiments ended in 1902. Early in 1906, two cars, Nos. 203 and 204, were converted back to trailers as Nos. 171 & 172 but 201 and 202 were retained as motor cars. In 1910, according to J. Graeme Bruce, 201 was fitted with batteries that allowed it to operate as a locomotive when traction power was off. In 1924, No. 202 also got batteries. Bruce says the cars were loaned to the Bakerloo in 1915 to assist with equipping the line's extension to Queen's Park. They had to be equipped for 4-rail operation. At least No.202 was used on the Edgware extension for a time during the early 1920s. It was still officially allocated to Golders Green in 1931. They were renumbered again as L22 (in 1930) and L23 (1931) by the Underground and were scrapped in 1936 and 1937 respectively. At some point in their lives, the original short switch compartment was extended by two more windows, as seen here. The location of the photo is Lillie Bridge. The two cars are stabled on the road next to the wall separating the yard from the West London Extension Railway. The structure in the background is the walkway that connected the original Earl's Court exhibition site with the additional exhibition buildings to the west of the original Lillie Bridge depot. The site of these additional buildings became part of the depot from 1933. The area where the two cars are seen here is now covered by the "Earls Court Two" exhibition building.

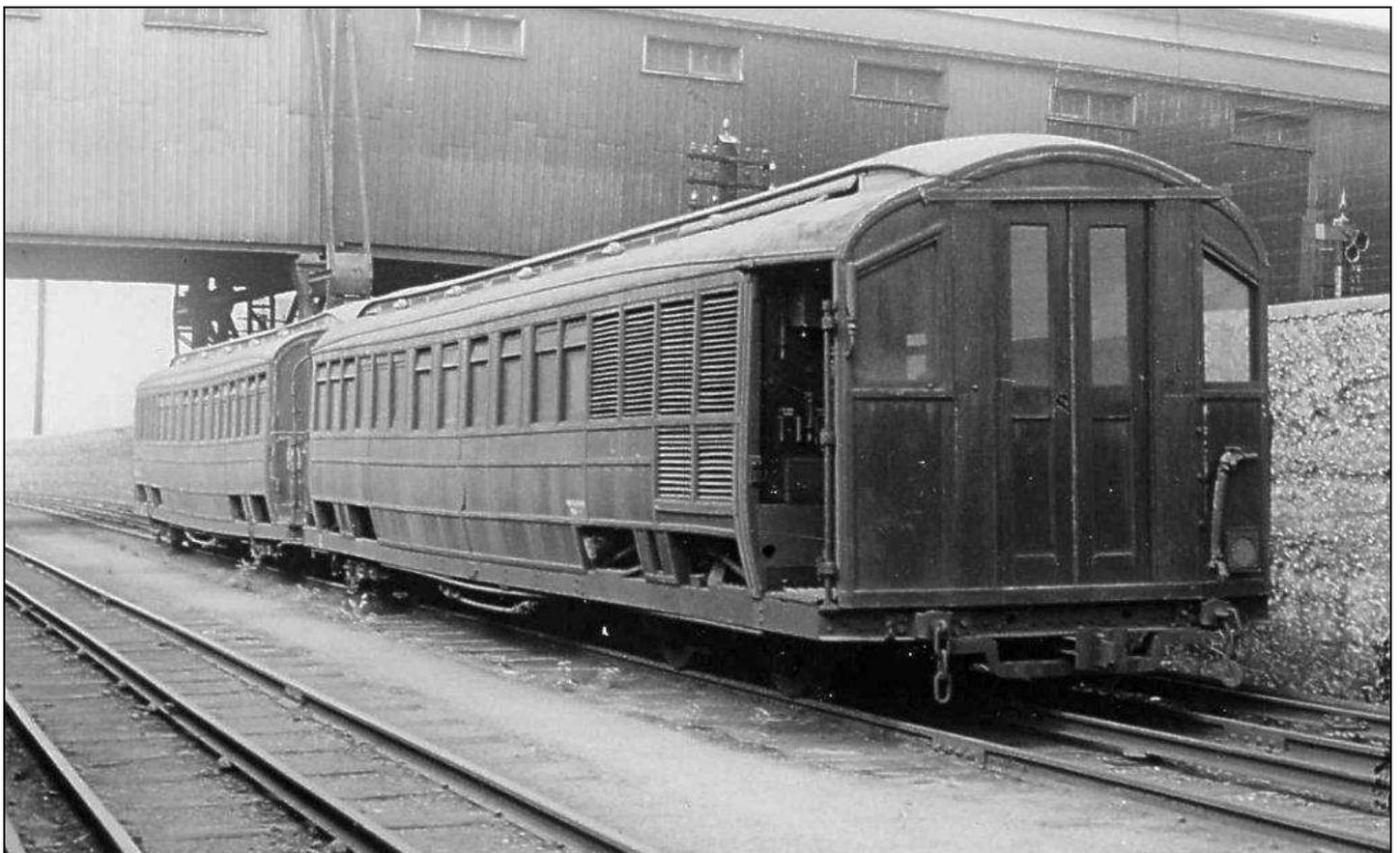
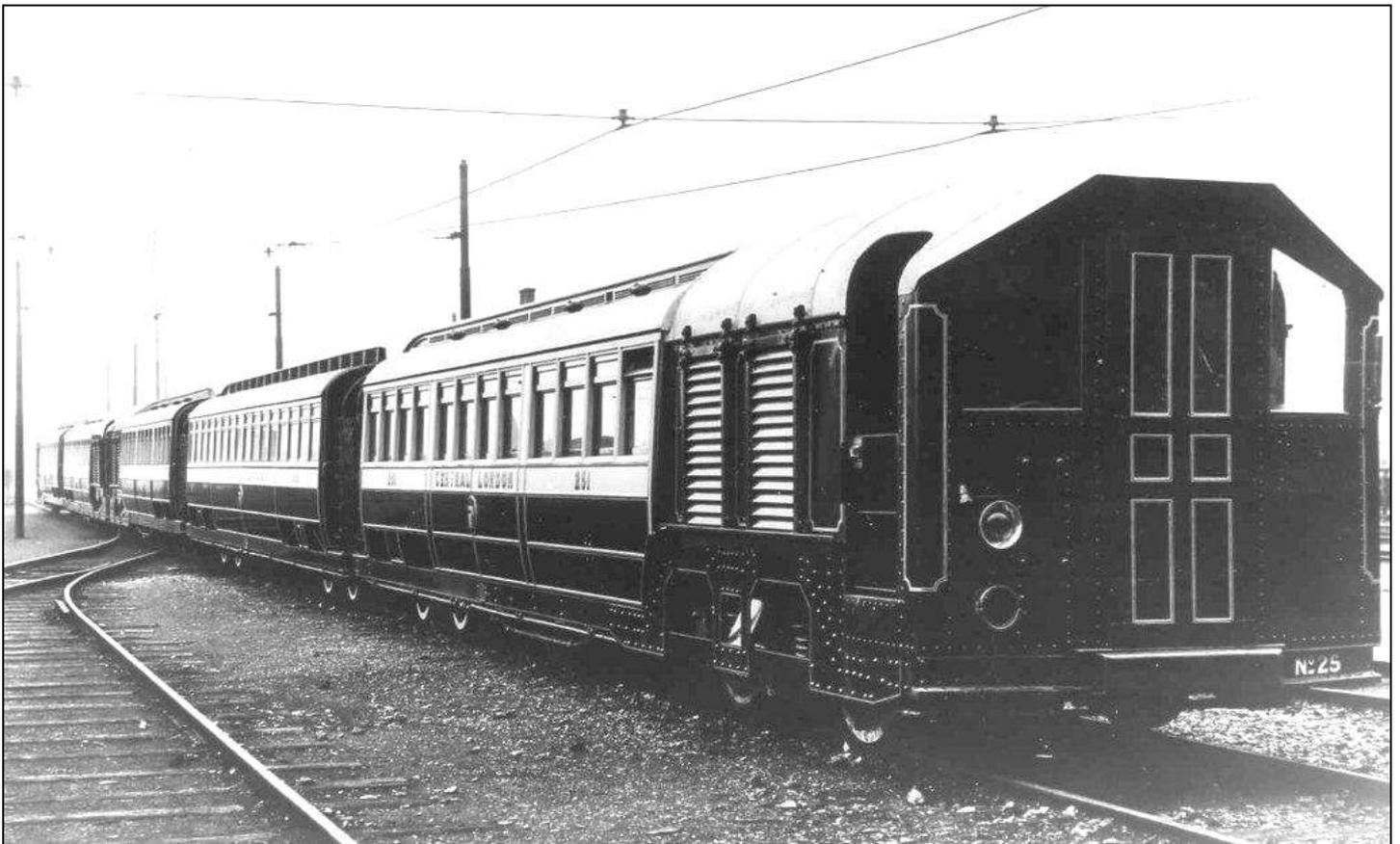


Figure 5 (below): A set of five new cars freshly arrived at Wood Lane from Birmingham, standing “under the wires” outside the car shed. The second car is one of the six steel trailers built experimentally by the Birmingham Railway Carriage & Wagon Co. These trailers were the first all-steel car bodies built in the world. The other four cars in the photo are motor cars. The one nearest the camera is No.251. The number 25 on the headstock relates to the number of the motor car pairs that the Central London adopted as a strategy. The motor cars were arranged to run together in pairs, one at each end of the train. The train was allocated a number and the motor cars carried that number, both on the headstock and on each side of the switch compartment. Although they carried the same pair number, it was decided to distinguish between them (apart from the individual car numbers) by designating the car at the Bank end as the “A” car while the car at the Shepherds Bush end became the “B” car so this car, No. 251, became 25A. The car at the other end of Train 25, which was No. 221, became 25B. There is no evidence that the trailers were locked into train formations in the same way.



To be continued