

FROM RED TO 'SILVER' – AND BACK AGAIN!

(THE END OF UNPAINTED TRAINS ON THE LONDON UNDERGROUND)

For over 55 years, unpainted aluminium trains have featured on the London Underground. Now they are history, with the last train taken out of service on the District Line for refurbishment and painting in the early hours of Saturday 16 February 2008.

The story of the unpainted aluminium Underground train started its humble beginnings (also on the District Line!) with one single trial car in 1952, to an almost complete unpainted passenger fleet. This took some 33 years to achieve, with what was regarded as the last painted train running on 20 November 1985. In the event, the all-aluminium fleet on the Underground didn't quite reach 100%, as will be told below.

In the early post-war years, new rolling stock was required for the District Line, although plans for it were formulated for it during the war years. Steel was in short supply and not surprisingly the use of it was very 'restricted'. Thoughts therefore turned to the use of aluminium for car bodies and the second stage of providing the new¹ R Stock (the R49 Programme) saw all cars bodies built in aluminium. Although the price per car was more because of the increased construction costs, this was offset by a 16% saving in weight. Further savings could also be made if the bodies weren't painted at all – further weight savings and painting costs.

The decision to switch to unpainted vehicles was not taken lightly. The very first aluminium-bodied Underground car to be built (by Metro-Cammell) was R49 NDM 23231 and was finished two thirds in the standard Underground red and one third unpainted. Its construction began in October 1950 and it was finished in time to be exhibited at the Festival of Britain exhibition on the South Bank between March and September 1951. The unpainted end was really to show the finish that could be obtained on an aluminium-bodied car.

In August 1951, following static 'weathering' trials on aluminium sheeting, trials with unpainted aluminium panels were undertaken on P Stock DM 13216 and 1938 Tube Stock DM 11224, each having an aluminium sheet replacing a steel section. Half of each aluminium sheet was in 'polished' condition, while each other half was 'sanded'. Both ran in passenger service in this condition and no serious difficulties were encountered. Meanwhile the first R49 car was returned to Metro-Cammell at Birmingham for preparation to normal service (in red livery) and was delivered to Ealing Common on 28 May 1952.

The success of the unpainted panels led on to the next stage – a completely unpainted car. With the R49 Stock production in full swing, one of the new NDMs in the No.5 position was chosen to be delivered unpainted. This honour fell to 23567 and the car was delivered to Ealing Common on 17 April 1952, entering service on 12 June 1952. The only paint was black below floor level and a 3-inch waist-level Underground red stripe. Although it stood out 'like a sore thumb' its 'modern image' was soon accepted by the public, to the extent that London Transport then went one step further and ordered a complete eight-car unpainted train.

¹ Not all R Stock cars were 'new'. The NDMs were newly-built cars but all but six of the DM cars had been converted from Q38 Stock trailers. There were only six totally new R Stock DMs, built solely for the purpose of evaluating the performance of complete aluminium-bodied trains.



Above: NDM 23567 in service between red-painted R Stock cars at Wimbledon. It will be seen that the all-motored cars of R Stock didn't have wooden shoebeams when new. Instead they had bogie frame mounted shoes but had to succumb to 'conventional' shoebeams by the early-1960s.

Photo: F.G. Reynolds

To enable a true comparison to take place between an eight-car all-steel train, a painted aluminium train and an unpainted aluminium train, six new aluminium bodied DM cars were required, three being painted, the other three not.

The eight cars required to make up the unpainted train were delivered between October and December 1952. Because each R Stock car was built for a specific position in a train, different cars were delivered in what seemed to be an illogical order. It took all of three months for all eight unpainted cars to come together, as follows:

| | | |
|-------------------|-------------|----------|
| NDM No.3 position | 23346 | 01.10.52 |
| NDM No.2 position | 23247 | 05.11.52 |
| NDM No.5 position | 23579 23580 | 12.11.52 |
| NDM No.4 position | 23446 | 26.11.52 |
| DM 'A' end west | 21146 | 13.12.52 |
| DM 'D' end east | 22679 22680 | 31.12.52 |

Once all eight cars had arrived, they were quickly formed up with testing beginning straight away. London Transport's first unpainted aluminium train carried passengers for the first time on 19 January 1953 in the formation 21146-23247-23346-23446+23581-22679+23582-22680. All cars had the red waist stripe around the cars but on the DM cars the red band swept down and its width narrowed to form

a 'V' shape. This added a touch of 'class' to an otherwise very plain finish. Sadly, the red stripe did not find favour with the powers that be and some years later they were removed.

Such was the success of this unpainted train (both in aesthetics and savings) that the then London Transport didn't purchase another painted train for another 33 years. Indeed, the original trial car, 23567, also had its accompanying DM car (22663) 'painted' silver to match in 1956.



Above: Although the first aluminium-built R49 NDM (23231) was exhibited at the Festival of Britain exhibition in 1951, an 'aluminium' exhibition on the South Bank in 1955 saw the first unpainted car (23567) placed on show, where it is seen on 11 June 1955. The red relief came only with the waist-level stripe, the London Transport name and the red door open push buttons. The car number was in gold on the red band, close to the end single doors.

Photo: John H. Meredith



Above: The complete eight-car unpainted aluminium train of R49 Stock is seen at Whitechapel heading west on a rush-hour working to Hounslow West, which continued to be served by the District Line in rush hours until October 1964. This shows how the red stripe was adopted on the cab ends of DM cars, lowering slightly under the train set number box and sweeping down to form a 'V' shape. Car numbers are still in gold on the red band and were difficult to read unless you were close up!

Photo: D.A. Jones

The next type of stock to be built for the Underground in unpainted aluminium was the three prototype trains of 1956 Tube Stock for the Piccadilly Line. Although early artists' impressions had shown a red stripe (and 'V' at the driving ends), they were completely unpainted, the only 'colour' relief being the red London Transport fleet name (on DM cars only) and small red car numbers at the car ends. The subsequent large orders for 1959 and 1962 Tube Stocks followed exactly the same principle, as did the prototype trains of 1960 Tube Stock, including the painted trailer cars, which were converted from Pre-1938 Tube Stock.



Previous Page: (Top) The Metro-Cammell-built 1956 Prototype Tube Stock is seen eastbound at Acton Town, probably a couple of years after entering service with DM 41000 leading. When they were new, they were numbered in their own 4xxxx series

but were later renumbered to conform to the numbering series of the subsequent 1959 Tube Stock. At the outer end, the DMs only had mechanical couplers, so great care had to be taken during the operation of short trains in the off-peak, so that two (or even one!) mechanical coupler didn't end up in the middle during coupling up! One of the features on this train was that there was a white-on-blue No-Smoking label on one of the tilting quarterlights in each bay.

Previous Page: (*Lower*) The rear of a 1959 Tube Stock train and DM 1048 at Barons Court after a few years in service but before its first heavy overhaul (which took place in December 1967). This was overhauled about three years (later) out of sequence, as the unit spent some time under repair, being an early collision victim. At that time, oil tail lamps were still in use.

The electrification of the Metropolitan Line from Rickmansworth to Amersham and Chesham and the provision of two additional tracks from Harrow-on-the-Hill to Watford South Junction was a project from the 1935-40 New Works Programme. Being deferred because of the Second World War, work didn't restart until 1959. A total of 31 new eight-car trains of A60 stock were ordered from Cravens Ltd. of Sheffield, each comprising two four car units (M-T-T-M). The first six four-car units were delivered with black-painted roofs, but all others had grey roofs. The first overhaul of the A60 Stock saw the elimination of black roofs on this stock. A further order for 27 trains of A Stock, almost identical to the first batch, was provided to replace the F and P stocks on the Uxbridge line. This second batch was originally designated A61 stock but subsequently became A62 and followed on without interruption after the A60 batch. All A60/62 stock trains were in service by December 1963.



Above: The Metropolitan Line's A60/62 Stock, of a similar vintage to the 1959/62 Tube Stock, also followed with the same finish, save for the car numbers, which were in the traditional size and location. They were delivered to Ruislip depot and after commissioning were transferred to Neasden via North Acton and Ealing Broadway (there was no Ruislip siding connection then!). Two units are undergoing commissioning in Ruislip depot next to new 1959 Tube Stock.



A four-car unit of A60 Stock is seen in the yard at Cravens of Sheffield, being formed up for delivery to Ruislip depot, where it arrived on 20 July 1961. Nearest the camera is DM 5028 which is now 5232 – the other end of the unit was involved in the Kilburn collision on 11 December 1984 and the best four cars were formed to make one unit.



Seen at North Acton on the Central Line on transfer from Ruislip depot to Neasden is the last A62 Stock unit, 5230/31. This was delivered to Ruislip on 30 November 1963 and transfer to Neasden was on 12 December.



The first six units of A60 Stock were delivered with black roofs, which they retained until their first overhaul. DM 5004 is seen at Marylebone on 12 May 1961 during a railway exhibition. This car was delivered on 29 April 1961 and went to the exhibition from there. This unit (with 5008) formed the first A Stock train to enter service on 12 June 1961.

More unpainted aluminium stock continued to be built, the Victoria Line's 1967 Tube Stock, the C69 Stock for the Hammersmith & City and Circle lines and the 1972 MkI Tube Stock for the Northern Line. The only difference with these trains was that 'London Transport' transfers had given way to 'Underground'. The surface stock continued to have large red car numbers but the tube stock had small numbers at the car ends.

Although unpainted trains continued to be the norm, there was a small splash of colour with the red passenger doors on the 1972 MkII Tube Stock. This variation was unique to that stock and gave way to half red cab fronts from the 1973 Tube Stock, which then set the trend for the following D Stock and 1983 Tube Stock.

Each new stock, of course, reduced the number of properly painted trains left on the network and by the time the D Stock had replaced the CO/CP and R Stocks in 1983, the only painted trains in service was the remaining 1938 Tube Stock on the Bakerloo Line and the (three) converted 1938 Tube Stock trailers running with the 1960 Tube Stock on the Central Line. Once the last 1938 Tube Stock train had run on the Bakerloo Line on 20 November 1985, one could assume that all the

Underground's trains were in unpainted aluminium. However, this wasn't quite the case, because the three 1938 Stock trailers running with the 1960 Stock on the Central Line, although 'silver' in finish, were still 'painted'. It was just three vehicles therefore, that prevented the Underground's train fleet from becoming 100% unpainted aluminium!

By this time, graffiti had grown from being a 'nuisance' to a serious epidemic, and thoughts turned once again to painted trains. After cleaning off the graffiti on aluminium-bodied stock, there was still a 'shadow' left on the bodywork, and the more graffiti, the more shadows it left.

The 1986 Prototype Tube Stock went part way in achieving some colour to an aluminium body, the first prototype train being delivered in October 1986. This was the 'green' four-car train (the 'blue' train arrived the following month and the 'red' train in March 1987 – they entered service from 4 May 1988). The month before, in September 1986, the first of five previously withdrawn 1938 Tube Stock trains had re-entered service on the Northern Line because of increasing passenger numbers – and of course these were painted trains. All five trains of 1938 Tube Stock re-entered service between September 1986 and January 1987.

Whilst the 1986 prototypes offered some colour with future new stock orders in mind, experiments were underway with painting existing unpainted trains. This began with the East London Line's handful of A60 Stock and followed with three 1972 Mk1 trains on the Northern Line, along with a prototype refurbished unit of C Stock and two cars of A62 Stock. From three different colour schemes, the red (doors), white (body) and blue (skirt) livery was chosen as the corporate style, being that devised by an LU rolling stock engineer, rather than the two suggested by consultants!

The decision to refurbish the C Stock (1990-94) and the 1967/72 Tube Stocks (1991-95) also meant that they would be exterior-painted as well, the end result making inroads into the unpainted fleet. The refurbishment of the A Stock (1997-97) and 1973 Tube Stock (1993-2000) followed and three new stocks had also been provided – the 1992 (Central), 1995 (Northern) and 1996 (Jubilee). Unpainted trains were thus becoming a minority, the last lines to operate them being as follows:

| | | |
|----------------------|---------------|--------------------|
| Circle & Hammersmith | February 1994 | C Stock |
| Victoria | November 1994 | 1967/72 Tube Stock |
| Bakerloo | January 1995 | 1972 Tube Stock |
| Central | January 1995 | 1962 Tube Stock |
| Metropolitan | December 1997 | A60/62 Stock |
| Jubilee | July 1998 | 1983 Tube Stock |
| Northern | January 2000 | 1959 Tube Stock |
| Piccadilly | August 2000 | 1973 Tube Stock |

This left the District Line to be the last with unpainted trains. The trailer car (17008) of a three-car unit was given a trial interior refurbishment but the whole three cars were also 'wrapped' in corporate livery. But this trial refurbishment on one car took over 2½ years to achieve and the unit didn't re-enter service until 17 July 2002, about three years and four months after first being sent to Acton Works! Full refurbishment of the fleet at last kicked off in the summer of 2003 although it was June 2005 before the first (three) trains actually entered service. The first two trains were refurbished at Wakefield, the remainder at Derby.

And now the D Stock refurbishment project is almost complete (and will be by the time this is read). The prototype refurbished unit went away for a proper

refurbishment on 23 November 2007. Because of it being non-standard because of its early trials, this was actually part of the designated last train, although it had to go before the last because of additional work, being 'different'.

The last unpainted train thus ran on Friday 15 February 2008 and into the early hours of Saturday 16 February, working train 103 in the morning peak and 106 in the evening peak and through to the end of traffic. The honour fell to units 7534 +7115 which had been formed up on 5 February. For the record the scheduled trips on the last day were as follows:

| Train 103 | | Train 106 | |
|--------------|-----------------------------|--------------|----------------------|
| 05.11 | Ealing Common – Ealing | 16.14 | Upminster – Ealing |
| 05.21 | Broadway | 17.54 | Broadway |
| 06.59 | Ealing Broadway – Upminster | 19.33 | Ealing Broadway – |
| 08.39 | Upminster – Ealing Broadway | 21.13 | Upminster |
| | Ealing Broadway – Upminster | 22.54 | Upminster – Richmond |
| | | | Richmond – Upminster |
| | | | Upminster – Ealing |
| | | | Broadway |

As will be seen in “Rolling Stock Changes & Movements” (page 333 this issue), unit 7534 departed Ealing Common by road on 18 February and unit 7115 the following day. The story of the Underground’s unpainted trains has thus come and gone full circle, although three painted 1938 Tube Stock cars running with 1960 Tube Stock in 1985/86 on the Central Line then prevented a 100% unpainted aluminium fleet.



District line

The display (above) was carried by train 106 for the last runs of train 106 during the evening of Friday 15 February 2008. It depicts one of the unpainted R Stock trains of 1952 on the left and an unrefurbished D Stock on the right.

Photo: Kim Rennie