

# UNDERGROUND NEWS

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## THE TIMETABLE

### Tuesday 1 April

Library Evening, 1830. The Society's Library open for inspection at 9A Dunrobin Court, 389 Finchley Road, London, NW3 6HE.

### Friday 11 April

Talk 'Advertisement Posting on L.T.' by Mr. Roger Fernley, Advertisement Service Manager, London Transport. 1900 for 1915 at Hammersmith Town Hall.

### Sunday 13 April

The Society will be operating its Sales Stand at the London Bus Preservation Group's 7th Open Day and Flea Market at Cobham Bus Museum, Redhill Road, Cobham Surrey; 1100 to 1700. Admission: 50p, accompanied children under 12, free. Please note that there will be no car parking facilities at the Museum, but free parking will be available at Weybridge station, from where a free bus service will be provided to and from the Museum.

### Tuesday 15 April

Morning and afternoon visit to Aldwych and Holborn disused platforms and tunnel between. FULLY BOOKED.

### Monday 28 April

Library Evening, 1830. Other details as for 1 April.

### Thursday 8 May

LURS members are invited to this meeting of the Southern Electric Group, which will be a talk on 'L.T. Rolling Stock' by Mr. R. Veness of Acton Works. The meeting will be held at the Abbey Community Centre, 29 Marsham Street, Westminster, London SW1, commencing at 1915.

### Friday 9 May

Talk 'The History and Development of the L.T. Tube System' by Mr. D. F. Croome. 1900 for 1915 at Hammersmith Town Hall.

See page 146 for further Timetable items.

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## FEBRUARY HAMMERSMITH MEETING

For the first part of this meeting, Mr. B. R. Hardy presented slides to illustrate the theme of 'Now defunct, and unusual, L.T. railway workings of the recent past'. The period under review was defined as from 1945 to the present day. He showed a very large number of slides (with acknowledgement to those who had lent them from their collections) so that it is possible to mention only a selection of them. Brian's talk revived memories of former workings and practices, including tube line uncoupling to run shorter trains outside the peaks, District Line operation to Hounslow West, and the Circle Line on Sundays, Metropolitan Line guards giving the starting signal by placing their metal flag-shaft on two wires above the platform, the North Weald loop, and 1959 stock trains on the Piccadilly Line showing plain 'Hounslow' and the early morning workings at West Kensington (District Line) in the days where Hatton Cross used to be the terminus.

Slides of stock which has now been scrapped included 'standard' tube stock on the Central, Northern City and Piccadilly; gate stock in use as service stock; Experimental 1935 tube stock when stored - just after the war and as used later, including the Central Line shuttles; Metropolitan Line saloon stock and District hand-door stock; F stock at Olympia, on the District main line, on the Uxbridge branch of the Met., and on the East London. Examples of stock now on a different line (or since withdrawn) included 1938 stock on the East London, Northern and Piccadilly lines and also en route to White City as an instructional train. There were several interesting shots of 1972 MkII stock on the Bakerloo Watford branch before the opening of the Jubilee in 1979, and of surface stock stabled at Willesden Green sidings for the 1963 Centenary celebrations. Abandoned special workings included those of the Northern City stock transfers via Kings Cross main line, and the Bakerloo stores train. Several enthusiasts' special trips were shown, including a Q stock tour of 1971 and a Brake Van tour between 'Sarah Siddons' and 'John Hampden' in 1972. The CO/CP stock tour in 1977 was featured, as was the 'Farewell to 1938 stock on the Northern Line' in June 1978. The sad business of scrapping old stock was illustrated, starting with F stock in 1963/4 at Risca, South Wales, and currently the CO/CP stock in Cohens yard at Kettering, all taken to the scrap yards by train. The procedure of cutting up non-movable stock in depots was illustrated with the Pre-1938 Ballast Motors in September 1978, showing how they were cut, loaded onto lorries and then taken away by road. Similar views of 1938 stock being cut up at Neasden were also seen, including a convoy of three lorries each with a piece of a car, on the North Circular Road! Finally, Brian took us on a trip from Drayton Park to Elstree and Alexandra Palace to recall the partly completed and subsequently abandoned works of the 1935/40 schemes for the Northern Line, which also covered the period from 1945 to the present day. Views of the conductor rails already in position at Stroud Green were seen (in 1945) to the closed and abandoned Highgate High Level station - overgrown with trees (in 1979) and the houses and flats being built on the Bushey Heath extension land north of Edgware to Brockley Hill (late 1950's). The record-sized audience expressed its appreciation to Brian for assembling so many interesting slides.

Ian Robins, Modelling Secretary, then described the place of modelling within the Society. As modellers were individualists, working in different scales, his role was mainly to co-ordinate and to give advice. His own preference was 1 in 24 scale static models, of which three examples of tube stock were shown, but the other models exhibited were of OO scale, including a working Ashbury stock electric train, steam locomotives, wagons, and tube trains of standard, flat-

fronted 1935, and 1960 types. The Chairman felt that the present approach to the subject would have to continue, in the absence of accommodation for a permanent layout, and he thanked those who had brought models for display.

### THE 1960 TUBE STOCK TRAILERS

by Brian Hardy

Now that there are only four trailer cars of Pre-1938 tube stock left in passenger service with the Cravens 1960 prototype DMs on the Hainault-Woodford ATO branch of the Central Line, it is worth reflecting at this stage, the history of the twelve converted cars and other developments to date.

It was intended that the number of converted trailers would be 350, to run with 350 newly-built DMs, to provide 175 4-car units or  $87\frac{1}{2}$  trains for the Central Line service. Before it was decided to convert all 350 trailers, twelve were converted as prototypes to run with 12 new DMs built by Cravens Ltd. of Sheffield, forming three prototype trains. The plan was to test these three trains thoroughly before further new DMs were ordered and further trailers converted, so that the later cars would incorporate all the necessary refinements and modifications which would have been highlighted in the prototypes. In the event, no more DMs other than the original 12 were ordered, nor were any other trailers of Pre-1938 stock converted. This was due to the urgency to replace the Central Line Pre-1938 tube stock fleet as soon as possible because of the high failure rate of the Pre-1938 stock and the imminence of the E.R. electrification into Liverpool Street, with the possibility of additional passenger traffic, and thus the prototypes were unable to be tested thoroughly. Another factor was that it was expensive to convert and refurbish the Pre-1938 trailers. The Central Line rolling stock replacement programme thus provided for the 1962 tube stock, which was similar and compatible with the 1959 tube stock then being delivered for the Piccadilly Line, and in fact, as a stop-gap, the last 57 trains of 1959 tube stock were first used on the Central Line until the 1962 tube stock was built.

The twelve Pre-1938 trailers were all taken from the Piccadilly Line and entered Acton Works for conversion from late-1958 to early-1960. All conversions were completed and transferred to Ruislip depot during 1960 (see Appendix 1). The 12 cars selected for conversion comprised four built in 1927 by the Metropolitan Carriage Wagon and Finance Co., and eight built in 1931, of which three were built by Gloucester and five by Birmingham. The 1931 cars had two pairs of double doors on each side and single end doors, while the older 1927 cars had double doors only. However, two of the 1927 cars (which were 7457 and 7454 - to become 4903 and 4907 respectively) were converted with additional end single doors. This followed a similar conversion with two 1927 trailers operating with the 1938/49 tube stock on the Bakerloo Line. (70518 - converted early-1957 and ex-Acton on 27.6.57 and 70545 - converted late-1957 and ex-Acton on 17.1.58).

The conversion work included the fitting of fluorescent lighting down the centre of the ceilings, fitting of compressors, outside door indicator lights, altering the coupling to the semi-permanent bar type - common on all unit stock, and altering the electrical circuits to work on 50V from the motor generators via the batteries on the adjacent DM cars. The interiors were refurbished with new seats and various colour schemes were tried out (blue/pink, green/yellow and blue). The car exteriors were repainted silver to match the unpainted DMs. It was originally intended that the trailers

would be numbered from 4000 onwards but this was later changed to become from 4900 onwards after it was decided that no more would be converted, but not until some of the original twelve had already been numbered 40xx on conversion. (DMs 3900 and 3901 were delivered from Cravens to LT as 3000 and 3001, but were renumbered 3900 and 3901 before entering service.) The first 8-car train of 1960 tube stock entered service on the Central Line on 9th November 1960. After all the trains had entered service, it was also possible occasionally to see them in service on the Central Line shuttle services, between Epping and Ongar and Hainault-Woodford, as 4-car units.

In 1964, all but one pair of trailers were modified at Acton Works with the DMs (on which most work was done) for ATO operation on the Hainault-Woodford branch of the Central Line, which commenced on 5.4.64 (see Appendix 2), and included the fitting of public address facilities throughout the train. The remaining pair of trailers (4902/3) were stored, while the unmodified DMs (3910/1) were utilised as a test train from the end of 1962. Following the storage of 4902/3, DMs 3910/1 were fitted with Rheostatic braking and new 1962 stock trailers 2734 and 2736 were formed in the unit in March 1963. Similarly, DMs 3904/5 were also used for Rheostatic braking tests from January 1964 prior to ATO conversion, its trailers 4904/5 also being stored and further new 1962 stock trailers 2730 and 2750 being used between the DMs. Much testing of these two units took place, mostly on the test tracks at South Ealing, but also between West Ruislip and White City and also Loughton and Epping. An 8-car train was formed from 19.3.64 as follows: 3910-2736-2750-3905+3904-2730-2734-3911 for further tests on the test tracks at South Ealing. At the beginning of May 1964, the trains were reformed as follows: 3910-2730-4903-3911. DMs 3904/5 were then converted to ATO, trailers 2734/6/50 were prepared for passenger service, but 4902 remained in store. Trailer 2730 continued on tests until entering service in July 1965, when 4902 was brought out of store and took its place. It is interesting to note that the four 1962 stock trailers (2730/4/6/50) were delivered 'early' and out of sequence, especially for these tests.

From 1965 to 1967, 3910-4902-4903-3911 was fitted with a 'breadboard' chopper control system on 3910, controlling two motors only. This equipment was variable frequency and was tested on the Central Line between West Ruislip and White City and also on the South Ealing test tracks. It also worked on test with an 8-car train of 1938 tube stock (10016-012474-12155-11016+10018-012175-12031-11141) between Arnos Grove and Cockfosters in September 1965. The unit was fitted with chopper control in the passenger saloon in the late 1960's and has since been used as a Track Recording train. It was officially transferred to Service stock on 17.2.71. Chopper control was also fitted to 3902-4910-4911-3903 by the late 1960's, but this equipment was located under the floor of the DMs. Having been tested since late 1969 on the South Ealing test tracks, it entered service in this form on 30.9.75.

1960 stock trailers overhauled (see Appendix 3) have had additional exterior aluminium panels fitted at cant rail level. The five even numbered trailers (4900/4/6/8/10) were fitted with de-icing equipment and the letter 'D' was later added beneath the relevant car number. As an experiment prior to the arrival of the Victoria Line 1967 tube stock, most of which were first tested between Hainault and Woodford, a combined Traction/Brake controller was fitted to 3908 after its conversion to ATO, but was removed shortly after.

As the oldest of the converted Pre-1938 stock trailers were approaching 50 years old and were all becoming a maintenance liability, it was proposed that they should be replaced (see Appendix 4) by trailer cars of 1938 tube stock (see Appendix 5) which were available due to

the 1938 tube stock scrapping programme. Each pair of Pre-1938 stock trailers would be replaced by one converted 1938 stock trailer, so that each ATO train would comprise three cars, instead of four. Five trailers were earmarked for conversion (012177, 012229, 012392, 012406 and 012408). After conversion and renumbering, it was proposed that they should be formed as follows:

From	To
3900-4900-4901-3901	3900-4921-3901
*3902-4910-4911-3903	*3902-4923-3903
†3904-4904-4905-3905	†3904-4925-3905
3906-4906-4907-3907	3906-4927-3907
3908-4908-4909-3909	3908-4929-3909

One of the trailers was to be adapted to work with the Thyristor (chopper) train (note \*) which was originally converted as such in the late 1960's, and another to be adapted for the electrical control of emergency braking (ECEB), the original modification being done in late 1970 (note †), as a test prior to the arrival of the 1973 tube stock.

Because of the cost involved in the conversion, it was decided not to proceed with any more conversions other than with 012392 and 012229. Thus 012177, 012406 and 012408 were scrapped on 14.7.77, 5.12.75 and 22.4.76 respectively. The test train (3910-4902-4903-3911) was excluded from this scheme until later, when 1938 stock trailer 012331 was decided upon for conversion, to replace 4902/3. No.012331 had been stored in Acton Works since October 1974. The two DMs were also to be overhauled and renumbered TRC910/1 (ex-3910/1) and the converted trailer renumbered TRC912, but this car would not be internally refurbished. Several liveries and styles were suggested for the Track Recording test train, the best, perhaps, being silver (or unpainted aluminium on the DMs) with a waist-level maroon stripe, with the legend 'Track Recording Train' in white. However, the ultimate decision was to paint the trailer in service stock maroon with a white roof, and to retain the DMs in unpainted aluminium. A further trailer was subsequently chosen for conversion to replace 4900/1, being 012366, which would therefore mean the two trains with the experimental equipment (noted \* and † above) would retain their 1927/31 trailers.

To date, all intended conversions of 1938 tube stock trailers have been completed at Acton (see Appendix 5), but only one, 4929, has actually seen passenger service, for a short period in August 1977. Because of the asbestos problems with DMs 3906-11, 4929 was stored back at Acton, as were 4927 and TRC912, which have not yet entered service in their new form. No.4921 has also been converted, but went immediately into store, as its DMs 3900/1 could not be released for overhaul, and 4900/1 for replacement. The Thyristor train has recently been disbanded; DMs 3902/3 being converted back to PCM control and trailers 4910/1 being withdrawn, pending scrap. The DMs are to be used for tests with FACT (Fully Automatic Controlled Trains) and trailer 4929 was formed between the DMs in January 1980.

The service on the Hainault-Woodford ATO branch is thus worked by the following two units of 1960 stock and include 1927/31 trailers:

3900-4900-4901-3901  
3904-4904-4905-3905

The third train is worked by the Victoria Line 1967 stock 4-car unit but often a 4-car crew-operated train operates in place of an ATO train requiring depot attention. It is understood that 3900/1, 4900/1 are to continue in service for the time being, but 3904/5 are due for overhaul and 4904/5 due for scrapping, the ECEB to be

## The 1960 Stock Trailers - Captions to Photographs

Top: 1931 trailers 4910 and 4911 when operating on the main Central Line, at North Acton on 31.3.62, at the time when Pre-1938 tube stock was still operating on this line. (J.C.Gillham). Centre left: 1927 trailer 4905 at Roding Valley. No.4901, still in service has has its ventilator scoops on the roof removed. Centre right: One of the two 1927 trailers which were converted with additional end single doors. No.4903 is seen in Northfields depot. This car, with 4902, were the two trailers which were utilised for tests with DMs 3910/1 from late 1962. Lower left: 1931 trailer 4904 at Roding Valley shows the de-icing equipment fitted to this car, as denoted by the letter 'D' under the car number, and also shows the additional panels fitted at cant-rail level. Lower right: The first of the converted 1938 stock trailers became 4929 in 1976, and is seen here at White City depot in 1978. (Other photographs, B.R.Hardy).

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removed and converted to standard.

It thus might be wise for members who are interested in these old trailers to visit them in the near future, before they are all withdrawn from service.

At 26.2.80, the current location of the 1960 stock DMs and trailers was as follows:

Hainault, for service: 3900-4900-4901-3901  
3904-4904-4905-3905

Acton Works, for FACT tests: 3902-4929-3903

Acton Works, stored: 3906-11, 4921, 4927, TRC912.

Ruislip depot, for scrap: 4910, 4911.

A history of all the trailer cars before conversion appears in Appendix 6.

### Appendix 1 Conversion of Pre-1938 stock trailers

Original Number	Date to Acton	New Number	Date to Ruislip	Renumbered	Entered Service	With DMs
7079	24.10.58	4000	28.1.60	4900 8.60	9.11.60	
7469	26.6.59	4001	16.2.60	4901 8.60	9.11.60	3900/01*
7112	7.8.59	4002	6.4.60	4902 8.60	20.3.61	
7457	10.7.59	4903	9.11.60		20.3.61	3910/11
7144	2.9.59	4004	6.4.60	4904 8.60	28.12.60	
7467	7.8.59	4005	16.2.60	4905 8.60	28.12.60	3904/05
7147	10.7.59	4906	28.1.60		28.12.60	
7454	2.9.59	4907	9.11.60		28.12.60	3906/07
7126	12.1.60	4908	26.9.60		20.3.61	
7165	12.1.60	4909	26.9.60		20.3.61	3908/09
7153	12.1.60	4910	15.7.60		9.11.60	
7188	14.11.59	4911	15.7.60		9.11.60	3902/03

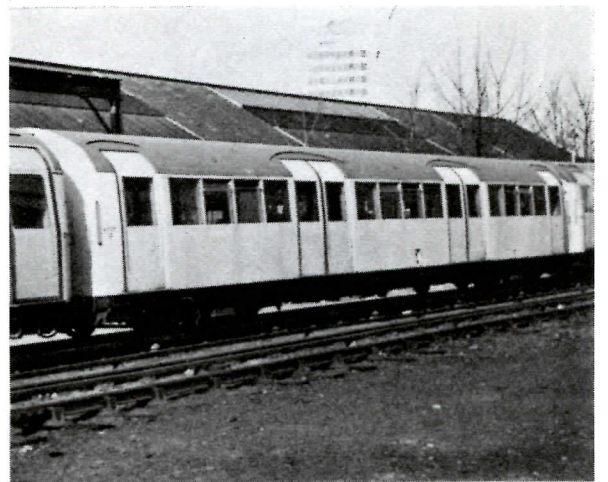
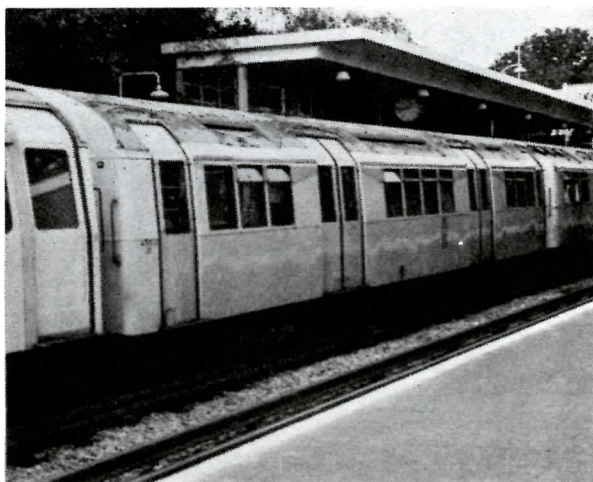
Note \* Delivered as 3000/01

Builders:-

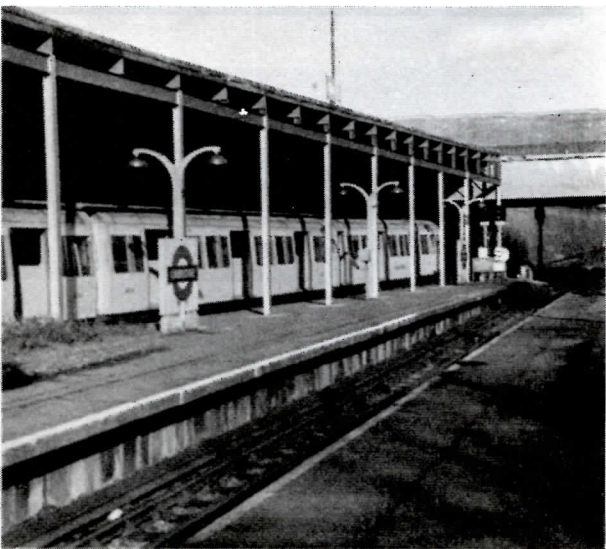
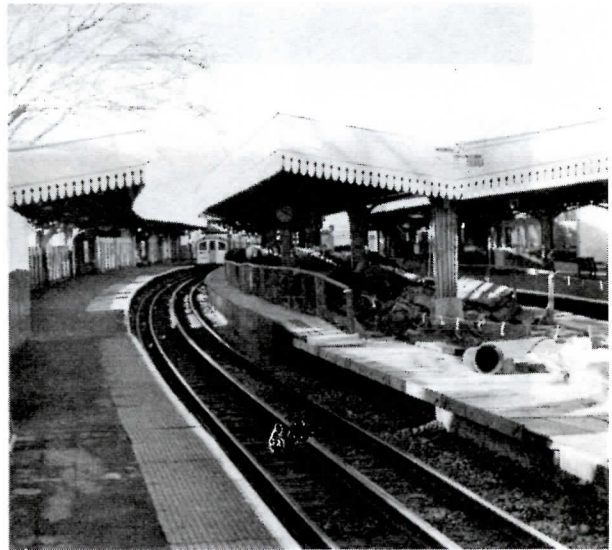
1927 Metro: 7454, 7457, 7467, 7469.

1931 Birmingham: 7079, 7112, 7126, 7144, 7147.

1931 Gloucester: 7153, 7165, 7188.



# CHANGING SURROUNDINGS





Changing Surroundings - Captions to Photographs

Top left: Farringdon CWL station in January 1980, showing the 'down' platform completely demolished in readiness for rebuilding for the Midland Suburban Electrification. Top right: Looking west at Farringdon, showing the tracks removed and fence erected on the left. The connection between the Met. and the CWL was removed in October 1979 and the point of connection can still be seen by the gap in the current rails on the LT tracks. Note that under the main aspect of signal OH28 is one of three emergency red stop lights intended at the departure of each platform, for eventual OMO of the Hammersmith & City and Circle lines. Centre left: The platforms at Golders Green are being rebuilt and this view shows the south end of platforms 2 and 3, which are currently out of use. Centre right: Looking north at Golders Green. Platform 1 (left) will be taken out of use when platforms 2 and 3 (centre) have been rebuilt. Lower left: A view of the east end of Uxbridge station in February 1980, looking over to platform 4, where a raft has been constructed in connection with the new bus station and garage. As a point of interest, Uxbridge and Cockfosters stations are the only two having enamel LT bullseyes with open centres, revealing the concrete behind. Normally, the centres are of white enamel. Lower right: At the west end of Hanger Lane station, a new road bridge has been built across the Central Line and WR tracks for the new gyratory road system currently being built there. (All photographs, B.R.Hardy).

Appendix 2-ATO Conversion

Cars	To Acton	In Service
3904/05	} 2.12.63	28.8.64
3906/07, 4906/07		5.4.64
3908/09, 4908/09		5.4.64
3902/03, 4910/11		5.4.64
4904/05	13.5.64	28.8.64
3900/01, 4900/01	2.1.64	25.5.64

Appendix 3-Overhauls

Cars	Date
3900/01, 4900/01	12.71
3902/03, 4910/11	5.69
3904/05, 4904/05	12.70
3906/07, 4906/07	5.71
3908/09, 4908/09	3.69
3910/11, 4902/03	--

Appendix 4-Withdrawal of Cars

Cars	To Acton	Acton To Neasden	Acton To Ruislip	Neasden To Ruislip	Ruislip To Scrap	Note
4902/03	4.8.77		21.12.77		12.1.78	(a)
4906/07	22.5.77	12.7.77		5.8.77	25.8.77	(a)
4908/09	8.10.75		4.12.75		18.12.75	(b)
4910/11	14.1.79		16.8.79			(c)

Notes: (a) Scrapped by Birds at Long Marston.  
 (b) Scrapped by Kings at Newmarket.  
 (c) Awaiting scrap at Ruislip.

Appendix 5-Conversion of 1938 stock cars

Previous Number	Date to Acton	New Number	Conversion Date	Notes
012366	15.11.76	4921	2.78	
012229	25.9.74	4927	4.77	
012392	25.9.74	4929	2.76	To Hainault 15.8.76
012331	14.10.74	TRC912	2.78	Ex White City 3.7.78

## Appendix 6 - Pre-Conversion History

### 1927 Metro

Original Number	Date Delivered Lillie B	To Golders G	Line e/s	Date e/s	Renumbered	Line Transfers
1104	17.7.28	19.7.28	N	19.7.28	7454 10.34	N to P 4.37
1107	24.7.28	27.7.28	N	13.8.28	7457 10.34	N to P 4.37
1117	31.7.28	9.8.28	N	25.8.28	7467 10.33	N to P 9.34
1119	7.8.28	11.8.28	N	29.8.28	7469 9.34	N to P 9.34

### 1931 Birmingham

Number	Date Delivered Lillie B	Line e/s	Date e/s
7079	7.3.32	P	18.3.32
7112	9.5.32	P	13.3.33
7126	30.5.32	P	19.9.32
7144	17.7.32	P	18.9.32
7147	17.7.32	P	18.9.32

### 1931 Gloucester

7153	5.3.32	P	9.3.33
7165	19.4.32	P	9.3.33
7188	17.6.32	P	19.9.32

### 1938 Birmingham

Original Number	Date Delivered Ealing Com	To	Line e/s	Date e/s	Renumbered
012229	20.2.39	GG	1.3.39	N	5.3.39
012331	15.1.40	GG	15.1.40 *	B	5.4.44
012366	8.4.40	GG	8.4.40	N	6.5.40
092392	6.3.39	*		B	21.3.44
					A92392 2.44
					012392 10.50

### Cars intended for conversion

012177	18.7.38	GG	25.7.38	N	13.9.38	
092406	1.5.39	GG	8.5.39	N	4.5.49	012406 10.52
092408	8.5.39	GG	12.5.39	N	25.5.49	012408 11.52

### Line transfers of 1938 cars

012177	N to P 8.52	P to B 1.75
012229	N to B 2.51	
012331	B to N 2.51	
012366		
012392	B to N 2.51	
012406	N to P 4.73	
012408	N to P 2.73	P to B 1.75

Note \* No intermediate details known.

## THE BUSHEY DERAILMENT

On Saturday evening, 16th February 1980, the 2025 from Euston to Manchester express became derailed at Bushey station, some 15 minutes or so after departure from Euston, due to a broken rail which was caused by a defective weld in the rails. Fortunately, there was only one serious injury and a few minor injuries to passengers, but this could have been far worse if the derailment had happened at the

'wrong time', such as when an up d.c. train passing, or, even worse, an up express passing, both of which could have been involved, causing a major disaster with much loss of life - in other words, another 'Harrow'.

However, the derailment being on B.R., it is the consequential train services on the Euston-Watford d.c. lines, or lack of them, that we are concerned with, as it ultimately affected L.T. also. From when the derailment occurred on Saturday evening and all day on Sunday, LMR d.c. trains operated between Euston and Harrow & Wealdstone only, reversing at the latter via the sidings, which are now used only about twice a day for parcels trains, but were once used regularly for reversing L.T. and L.M.R. trains. A coach service was provided between Harrow and Watford, starting at about midnight on Saturday, but it was some time before the passengers were cleared from Watford. The coach service was provided by Tri Centrol coaches.

On Monday 18th February, L.M.R. trains again reversed north to south at Harrow, running, in the peaks alternately to Euston and Broad Street, as is normal, although somewhat erratically. In the off peak, the service was to Euston, as normal. However, between Harrow and Watford High Street, a single line shuttle on the down line was provided with a 6-car L.M.R. train, running about every 40-45 minutes. Between Watford High Street and Watford Junction, the Croxley Green shuttle continued to operate normally, which is a peak hour service only. Coaches were provided throughout the day, and were observed to be provided by Tri Centrol, with extras in the morning peak by Vauxhall Motors, and in the evening by Premier Albanian. Although advertised as stopping at all stations, some omitted Hatch End and Headstone Lane in the up direction, if full of passengers for Harrow and beyond. Needless to say, that there were no Bakerloo trains from or to Watford Junction.

On Tuesday 19th February, similar arrangements operated, except that the single line shuttle was withdrawn after about 0830, to allow completion of work on the d.c. lines at Bushey, leaving all intermediate traffic to the coaches. At about 1630, both d.c. lines were reopened at Bushey for normal working, although no Bakerloo trains ran from or to Watford on this day.

On Wednesday 20th February, the first Bakerloo from Watford Junction, the 0734, did run although, apparently in error, for it was soon realised that the negative rail on the up line at Bushey, part of which had to be relaid, was not gauged, as it is only used by L.T. trains. Following the hasty cancellation of the other three Bakerloo trains, and withdrawal from service of the first for careful examination, only one operated in the down direction in the evening, for stock balance purposes, and it was not until Friday 22nd February that the four operated from and to Watford as normal.

#### Notes and Observations

On Sunday 17th February, a breakdown train was standing on the up d.c. line at Bushey, headed by a class 25 diesel - very unusual that a locomotive is seen on the d.c. lines.

Trains reversing at Harrow normally showed the ultimate destination of 'Watford', but some did sport 'Harrow', and when changing the blind, this revealed such places as 'Bushey', 'Acton' and 'Willesden' on them. As the d.c. trains have no connection between the cars, most trains were propelled into the sidings, the crews changing ends in the down platform at Harrow, but a few changed ends in the sidings, by walking along the track. The two stop lights in the sidings, which were out on Sunday 17th February (and probably for a long time before) were replaced by white lights, observed as such on Monday!

## OPERATION AND TIMETABLES ON THE PARIS METRO - Part 2

by B.H.Steinkamp

### Increase of Capacity

The favourable climate for public transport investment also governed the wideranging measures taken to increase the regularity of operation and, as a result, to use the available capacity to the full.

Metro timetables are very meticulously attuned to variations in traffic offering; departure times from termini are worked out to a precision of 5 seconds. Traditionally it was the 'chef de depart' in each terminus who, by sounding a bell, indicated to the crew that doors had to be closed and the train taken on its way. Once on the line the crew were very much on their own, other than in an emergency, and not in a position to check the regularity of the service provided. To remedy this, central control was instituted: the PCC (Poste de Commande et de Controle Centralises, situated at Boulevard Bourdon near the closed Arsenal station on line 5). Line 1 was the first to be connected on 15.5.67, at the end of 1974 all lines had been dealt with. A second phase of regulating the service better brought electronic digital clocks at platform ends, indicating the timetabled departure time from the terminus. So, when a train is supposed to leave at, say, 16 hours 56 minutes and 35 seconds, its crew should see the platform clock of each station on the way indicating '56 35'. Where it indicates an earlier time progress should be more leisurely, a later time on the clock is an indication to make up time. Under this system most 'chefs de depart' were replaced by electronically operated bells, actuated by timetable tapes; the inspector can override in case of need.

The third phase is A.T.O. or 'pilotage automatique' which has been gradually introduced on all routes but three. The exceptions are 3bis, 7bis and 10, where the maximum frequencies lower than 2 minutes 15 seconds do not warrant this investment. The operation compares to LT's Victoria Line; an audible difference being the sounding of a rather melodious buzzer over traindoors before they close.

A further result of the 'pilotage automatique' and the introduction of modern stock is the disappearance of guards. All postwar trains are now one-man operated. The number of guard duties for the Monday to Friday operation of 'Sprague' trains is 230 against a total of 1,256 drivers' duties. The new control systems have contributed greatly to the regularity of the service, improving the use of available peak capacity by as much as 15% on some lines. As a result, platforms can usually cope with the passenger flows and the automatic closing doors at platform entrances are no longer required. At some busy stations however, they have been retained, to be operated by the PCC in case of irregularities.

### Traffic and Timetables

The new electronic operating aids have kept the peaks manageable in spite of their increased 'peakiness' and a growing number of passengers. Some statistics of the number of passengers in millions:-

1938: 760, 1946: 1598, 1955: 1078, 1970: 1128,  
1973: 1097, 1976: 1050, 1977: 1081, 1978: 1104.

The counts of passengers passing through the electronic entrance gates show the shift in the peaks. In the winter of 1965/6 the busiest half hours were 0730-0800 and 1800-1830; at present they are from 0800-0830 and 1730-1800, when 5.9% and 7.6% respectively of the daily passenger total flock into the stations.

The busiest line on the system is 4 with 150 million passenger journeys per year, 3bis is the quietest with 2.3 million. The busiest stations are those at mainline termini: Gare du Nord (35.1 million per year), St.Lazare (31.8), Montparnasse-Bienvenue (25.7), Gare de l'Est (23.8), Gare de Lyon (17.5), Gare d'Austerlitz (14.5) and RER-interchange Chatelet (14.3). The quietest station is Eglise d'Auteuil on line 10 with 160,554 passengers in 1978 all told.

There are quite considerable variations in train service levels throughout the year, based on school and office holiday patterns as well as the necessity to give as many annual holidays to the running staff during the May-September period. In winter the number of passenger journeys varies between around 90 and 105 million per month to drop to 75 million in July and 60 million in August. As a result there are generally four types of Monday-Friday service and two each for Saturdays and Sundays. The 'full' service operates from 1st October to 1st May (A in table 1), a slightly reduced Monday-Friday service operates during May, June and September (B in the table), brought to a still lower level in July (C) to reach lowest ebb in August (D) when, traditionally, many Parisians leave the capital for their summer holidays. The weekend services operate at a reduced level from 1st June to 1st October.

During Christmas and Easter periods there is usually a Monday-Friday 'B' service as well as variations in weekend services depending on the position of Christmas Day in the week.

A remarkable feature is that evening frequencies are the same for all days of the week and all periods of the year. Apart from this there are quite considerable variations as indicated in table 2. As an illustration of the meticulous drafting of timeschedules, part of the service on line 9 is given. From terminus Mairie de Montreuil the first train sets off at 0529, preceded by one from Porte de Montreuil which runs empty as far as Nation to provide a 0530 departure from there. From 0534 there is a train every 4 minutes until 0546 after which the build up is thus:-

from 0546	frequency 3min 45sec
0631	3.30
0641.30	3.15
0648	3.00
0654	2.45
0659.30	2.30
0702	2.10
0706.20	1.50
0715.30	1.45
0729.30	1.40

This peak interval is kept up until:

from 0836.10	frequency 1min 50sec
0916.30	1.55
0922.15	2.15
0929.30	2.45
0937.45	3.00
1055.45	3.05
1058.50	3.10
1140	3.15
1143.15	4.00
1155.15	4.05
1159.20	4.10
1306	build up to evening frequency

The above, of course, is the Monday-Friday winter service.

At the end of the day the last trains depart from the termini at such times that they reach the other end of the line at 0115.00 exactly. Running times vary during the day, busier lines usually have four patterns of running time.

Variations also occur in the time required at a terminus. Most of them are 'stub ends', loops exist only on line 2 (both termini), 3bis (1), 4 (2), 6 (both; at the Western end trains take their layover time at Kleber, not Etoile), 7bis (1), 10 (1) and 13 (1).

Two stations deserve a special mention: The Gambetta terminus of 3bis is an island platform, tracks do not continue beyond it. The 7bis terminus of Louis Blanc consists of two stations, southbound on top of northbound - see diagram 1. Trains enter the southbound island platform, a shunt crew takes the train out again (after the passengers have alighted) clear of points 514, the incoming crew brings it to the departure platform in the northbound tunnel.

At other stub end termini, crews (mostly one man nowadays) change ends via a catwalk in the tunnel beyond the terminal platforms, called 'trottoir de manoeuvre'. During the peaks the time to do so exceeds the train frequency and to avoid using more trains, 3 to 5 shunt crews are brought in, depending on the frequency of the service. See diagram 2. The train crew steps down at 'A', the first shunt crew takes it to 'B', a second relief crew has been waiting at 'C' to bring the train to 'D' where the incoming crew takes charge again after walking from 'A'. The first shunt crew in the meantime make their way from 'B' to 'C', the second crew moves from 'D' to 'A'. A test with stepping back crews instead has been introduced on line 5.

#### Sidings

Depots in the London sense of the word are unknown in Paris. Trains are stored out of service at the terminal stations, usually beyond the platforms or adjoining the loop. In many cases former terminals take a share in this. The number of storing positions is as follows:-

1. Chateau de Vincennes 38, Porte Maillot 12, Pont de Neuilly 4.
2. Nation 38, Dauphine 7.
3. Gambetta 1, Porte de Champerret 13, Pont de Levallois 6, Gallieni 13.
- 3bis. Porte des Lilas 7, plus 12 trains for line 3.
4. Porte de Clignancourt 31, Porte d'Orleans 16.
5. Eglise de Pantin 25, Porte de Pantin 4, Italie 9.
6. Italie 4, Nation 17, Kleber/Etoile 19.
7. (Before extension) - Porte de la Villette 21, Porte d'Ivry 22, Mairie d'Ivry 13.
- 7bis. Pre St.Gervais 6 plus 9 trains for line 7, Place des Fetes 4.
8. Balard 14, Lourmel 3, Republique 5, Porte de Charenton 14, Charenton Ecoles 7, Les Juillottes - l'Echat 18 plus 8 on the up line, Creteil-Prefecture 5.
9. Pont de Sevres 13, Porte de St.Cloud 34, Republique 2, Porte de Montreuil 7, Mairie de Montreuil 17.
10. Porte d'Auteuil 16, Austerlitz 8.
11. Mairie des Lilas 5, Porte des Lilas 6, Chatelet 11.
12. Mairie d'Issy 16, Porte de Versailles 15, Porte de la Chapelle 14.

13. Chatillon 17, Invalides 21, Porte de Clichy 3, Carrefour Pleyel 6 plus 15 on the up line between there and Porte de Paris (as a result of this, there is single line working between these two stations apart from Mondays to Fridays from 0714 to 1923), Basilique 2.

To get into or out of sidings en route some trains work short of the termini. In the past there were also many regular instances of this; till the early 1970's there were short workings outside the Monday to Friday peaks to Porte de Pantin on line 5, outside the weekday peaks and evenings on line 9 to Porte de Montreuil and during weekday mornings and Monday to Friday afternoons on line 12 to Porte de Versailles. Also, as long as there were articulated units on line 13, they worked singly on Sunday to Friday evenings.

Nowadays non standard patterns prevail on line 13, where normally alternate trains go to Saint Denis-Basilique and Porte de Clichy, during the Monday-Friday peaks the pattern is one to Porte de Clichy and two to Basilique. Line 8 beyond Les Juillottes is served only by every other train during the daytime, except between 1730 and the end of the peak when all run through.

#### Effects of new lines

The opening of the junction 13/14 and of new RER sections has reduced the number of passengers on some lines. Part of this relief is used to increase the standard of comfort for standing passengers from 6 to 4 per square metre, beyond that services have been reduced. Line 1 lost 6,500 passengers in the evening peak alone, hence a reduction from the former maximum of 47 trains every 1 min 35 sec. Corresponding figures for line 6 are 3,500 (41 trains every 1 min 40 sec.), for line 12 - 6,500 (48 trains every 1 min 40 sec), while line 8 used to have 59 trains running every 1 min 50 sec.

Spare capacity from line 1 has been transferred to line 11, where there used to be two trains less (16, every 2 min 15 sec.); similar plans are afoot for line 4, taking spare trains from line 6.

Table 1 Train Service Statistics as at 15.1.80

Line	Length in km.	Running time max min		NUMBER OF TRAINS							
				Monday-Friday				Saturday		Sunday	
				A	B	C	D	win- ter	sum- mer	win- ter	sum- mer
1	14.6	34.30	31.15	43	40	37*	33*	26	19	20	17
2	12.3	34.40	31.15	39	37	33	29	24	17	18	13
3	11.7	32.30	29.20	39	34	32	24	23	17	17	15
3bis	1.3	3.20	3.15	4	4	3	3	4	3	3	3
4	10.6	30.45	27.25	44	44	35	28	25	19	20	19
5	11.2	29.45	27.00	37	34	28*	24*	20	14	15	13
6	13.6	35.50	30.55	39	36	29	22	17	15	16	14
7	17.8	46.45	45.30	62	58*	50*	41*	28	21*	22	18*
7bis	3.1	8.40	7.20	6	6	6	6	5	4	4	4
8	22.1	52.00	49.40	56	51	45	35	26	22*	23	22*
9	19.6	51.25	47.45	66	61	57	42	35	23	24	19
10	9.5	24.40	22.30	23	20	17	14	13	10	11	9
11	6.3	15.15	13.45	18	15*	12*	11*	10	7*	7	6
12	13.9	36.45	33.50	37	34	32*	28*	24	17	19	17
13 B	16.9	39.15	35.50	46	46	38	30	27	21	20	18
C	11.9	29.45	26.50								
Total number of trains				559	520	454	370	307	229	239	207
Total number of departures )				4998	4112		3535		2873		
from one terminal per line )				4790		3645		2944		2616	

Note \* 1979 figures, likely to be adjusted upwards for lines 7 and 11, and downwards for the others.

Table 1 (Continued)

Line	Service minimum	Interval maximum	Line	Service minimum	Interval maximum
1	1.45	8.00	8	2.00	8.30
2	1.50	8.30	9	1.35	9.00
3	1.45	8.30	10	2.20	9.30
3bis	3.00	9.00	11	2.05	11.00
4	1.35	8.00	12	2.10	9.15
5	1.45	9.00	13 B )	1.45*	6.00*
6	1.50	9.30	13 C )		
7	1.35	9.00			
7bis	3.50	8.00			

Note \* on the common part.

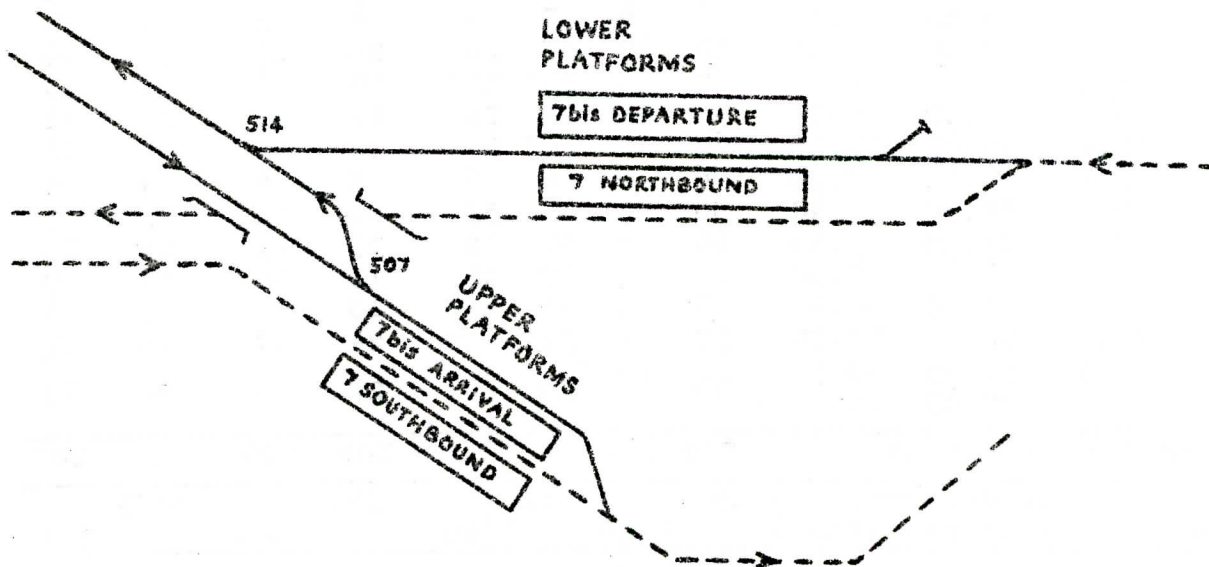
Table 2

Comparison of train service statistics on a busy line and a less busy line for a winter and August service:

	Line 1				Line 10			
	Winter		Summer		Winter		Summer	
M-F Morning peak	44	1.40	28	2.45	19	2.55	12	4.45
Morning	26	3.00	18	4.25 )	16	3.25	10	5.30
Midday	24	3.15	16	5.00 )				
Afternoon	27	2.50	19	4.10 )				
Evening peak	47	1.35	33	2.15	23	2.20	14	4.00
Evening	10	7.55	10	7.55	7	8.20	7	8.20
Sat Morning peak	20	3.45	17	4.30	12	4.45 )	10	5.45
Morning	18	4.15	16	4.45 )	11	5.10 )		
Early afternoon )	24	3.00	17	4.15	12	4.45	9	6.00*
Late afternoon )			19	4.00	13	4.20	10	5.45
Evening	10	7.55	10	7.55	7	8.20	7	8.20
Sun 0900 to 1500	14	5.45	13	6.00	8	7.15	7	8.15
1500 to evening	20	4.00	17	4.45	10	5.10	9	6.20
Evening	10	7.55	10	7.55	7	8.20	7	8.20

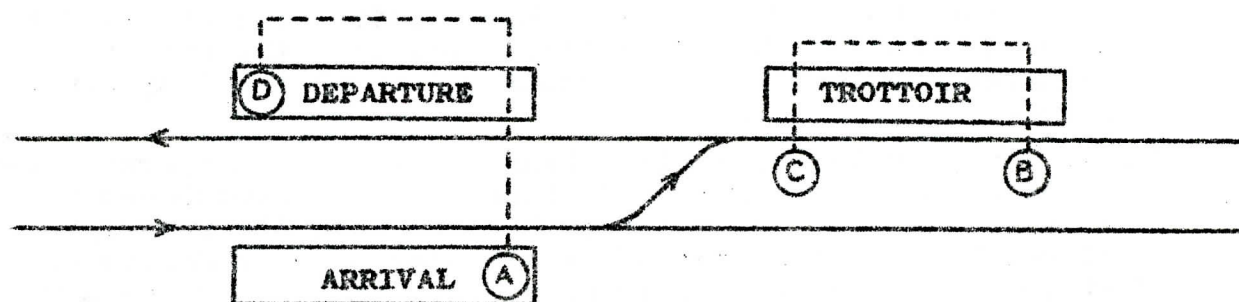
Note \* from 1100 to 1500.

Diagram 1 Louis Blanc Station





## Diagram 2 Schematic Stubend Terminus



### THE L.E.R. AND THE B.E.E.

by E.D.Chambers

Rail transport to the British Empire Exhibition in 1924 and 1925 was provided by several railway companies. The routes of more direct interest to students of the Underground were the Metropolitan to Wembley Park, the Bakerloo to Wembley (the present Wembley Central) and the District to Sudbury Town.

The Metropolitan Railway had an exhibit in the same building in both years (the Palace of Engineering, renamed the Palace of Housing and Transport for 1925). Visitors to Wembley Stadium may recall the impressive facade on the east side of Olympic Way. Despite efforts to preserve this significant early example of the large-scale use of ferro-concrete, demolition began in 1979.

Only recently did I come across a map that shows a 'London Electric Railways' building. This was in a British Empire Exhibition souvenir version of George Philip and Son Ltd's pictorial atlas 'London at a Glance'. From internal evidence, the year was 1924.

The colourful official map of the 1924 exhibition 'done' (according to the inscription) in 1923 by Kennedy North seems to show the same building, but marks it as 'Lavatories'. It is not shown on the black-and-white map included in the 1924 official guide. Both these maps are quite drastically simplified however, and omit many of the smaller buildings. (As a matter of transport interest, they also omit the Never-Stop Railway and the Road-Rails system).

The site of the L.E.R. building was near the Stadium, in the direction of the Canada Pavilion that stood to the north east. To the east was the small Bermuda Pavilion, which (as the Kennel Manager's office) was only demolished a few years ago. Aerial views are a little mystifying for they seem to show a building with a tower, resembling a church or fire station, somewhere the right location.

'London's Underground' advertised on quantities of the Kennedy North map, but these make no reference to an enquiry or display point at the exhibition.

Are any readers aware of the form this building - it may indeed have been only a kiosk - may have taken?

## ENGINEERING WORKS

### Neasden-Dollis Hill, 10/17.2.80

Throughout Sundays 10th and 17th February 1980, resleepering of the southbound Metropolitan Line took place between Neasden and Dollis Hill, and all southbound Metropolitan Line trains were diverted to run non-stop via the southbound Jubilee Line, from the crossover just north of Neasden to Finchley Road, running through the loop south of West Hampstead.

In order to fit in with the Jubilee Line trains, which operate every  $7\frac{1}{2}$  minutes between Wembley Park and Finchley Road, southbound Metropolitan Line trains were retimed from Wembley Park (those originating from Uxbridge, Watford and Amersham - all stations) or Harrow-on-the-Hill (fast from Amersham), with increased running time between Wembley Park and Finchley Road - 11 minutes, normally 7 minutes. Layover times at Baker Street were thus reduced, as trains travelling northbound operated in their normal timings.

A correspondent reports that he observed gangs working on the track during the morning of the 10th, but there was very little activity in the afternoon. This was similar the following Sunday as well, but on both occasions, a tamping machine was observed stabled on the Metropolitan Line, just south of Neasden station. Much of the work however, was done on the Saturday and Sunday nights of both weekends.

### Golders Green, 17.2.80

Following a fire on the bridge crossing the Finchley Road at Golders Green (bridge NT7) in 1979, no.13 points on the bridge there were retimbered on the above date and the Northern Line service was thus suspended between Golders Green and Brent Cross until about 1145, after which time normal services were resumed.

Before 1145, trains reversed north to south at Golders Green, using platforms 1 and 4 (2 and 3 being rebuilt - see photographs on page 122 of this issue), at the same service intervals as on a normal Sunday; i.e.  $7\frac{1}{2}$  before 1030 and 6 thereafter.

Between Brent Cross and Edgware two trains provided a special service, one on each line, operating under 'single line working' rules. The limits for the single line working, together with the trains used were:

Edgware No.3 platform and Brent Cross on the southbound line - train 2 comprising units 1204 and 1075.

Edgware No.2 platform and Brent Cross on the northbound line - train 107 comprising units 1160 and 1183.

For the single line working, all points and crossovers on each line were secured. A special service operating about every 16-20 minutes was provided with these two trains, which formed two of the normal service trains when single line working was withdrawn.

Between Brent Cross and Golders Green, a substitute road service was provided, picking up and setting down passengers in the forecourts of both stations.

### NEW TIMETABLES - SPECIAL EVENTS AT WEMBLEY

Special timetables for big events at Wembley on Saturdays have been issued for the Metropolitan No.2 section (18/80) and the Jubilee Line (20/80). The dates when these timetables will operate are to be announced in the weekly Traffic Circular.

Metropolitan No.2 section (18/80)

This timetable is provided for forward and return traffic, unlike the Jubilee, which operates for the whole day, and thus the Uxbridge/Watford-Baker Street services remain self-contained throughout the day operating as per the normal timetable.

For forward traffic, ten additional trains are scheduled and operate alternately southbound to Liverpool Street and Aldgate, returning to Wembley Park No.1 platform and then running either empty to Wembley Park shed via Harrow-on-the-Hill, or to Neasden depot, reversing in the platform.

One strange working is the 1333 Baker Street to Amersham, which starts from Liverpool Street at 1319 as train 57 and renumbers to 1 on arrival at Amersham - the original train 1 stables at Neasden at 1419.

For return traffic, two schedules are provided (known as 'A' and 'B'). 'A' is for when no extra time is being played and 'B' if extra time is being played.

For service 'A' four trains are booked to enter service empty via Harrow to Wembley Park, and others from Neasden depot and Wembley Park shed. In the event of schedule 'B' operating, the four trains that run empty from Harrow to Wembley Park still depart Harrow at the same time (1641, 1656, 1703 and 1711) but run empty and stand between Preston Road and Wembley Park for about 30-40 minutes, being signalled into No.6 platform at Wembley Park for service as required. From Wembley Park, these additional specials (10 trains in all, for both schedules) run alternately to Liverpool Street and Aldgate.

Service intervals for special service:

Harrow-Wembley Park	3½-7½ (see note * below)
Wembley Park-Baker Street	3½-4
Baker Street-Liverpool Street	5-10 (two trains every 15 minutes)
Liverpool Street-Aldgate	15

Note \* interval normally 7½ minutes. Additional trips southbound at 1311, 1319 and 1326 (forward traffic), 1641, 1656, 1703, 1711, 1807 and 1815 (return traffic, schedule 'A' only).

Jubilee (20/80)

During the periods of forward and return traffic, the service throughout the line is increased to operate every 5 minutes, with 18 trains in service. In addition, two spare trains are scheduled to be manned in Neasden depot for use as required.

The service intervals are:-

	Charing Cross Wembley Park	Wembley Park Stanmore	Trains in service
Until 1000 and after 1800	7½	15	11 *
1000 to 1145 and 1500 to 1630	5	10	16 *
1145 to 1500 and 1630 to 1800	5	5	18+2

Note \* as on a normal Saturday.

MODELLING QUERIES

A modeller working on a 1920's Metropolitan Railway country theme would like details of paint schemes of Metropolitan buildings, such as signal boxes, timber station buildings and similar structures. Any associated information would be appreciated.

He would also like to hear from anyone prepared to build a rake of Ashbury/Bogie stock, from the sides available from the Society's Sales

Stand, or anyone interested in scratch building any saloon stock of this period.

If anyone has used a Scalefour Society 7'-0" wheelbase bogie suspension unit in any of their modelling, what power unit would they recommend for the electric type ?

If anyone can answer any of these points, would they please contact the Modelling Secretary who will forward the information.

The Modelling Secretary's address is:

Garden Flat, 47 Buckland Crescent, London, NW3.

#### POINTS OF INTEREST

In the collection of signalling exhibits at Quainton Road is a wheel gauge which was obtained from the Metropolitan Line signal box at Ruislip. Its purpose was broadly thus: In the days of Private Owner Wagons, the condition of some of these apparently left a lot to be desired, and in the event of a derailment of one of these wagons where an argument ensued between the owners of the wagon and the Metropolitan Railway as to the track being out of gauge, it was the task of the signalman at Ruislip to take the gauge to the goods yard concerned - Hillingdon, Ruislip, Eastcote, or Rayners Lane. One side of the gauge had wheel flange notches and the other was 4ft 8½ins for gauging the rails.

Reading the brochure produced to commemorate the opening of the Stanmore branch in 1932 has brought home a more likely reason why the only goods yard on the branch closed as early as 1936. Could this be not because the Metropolitan Railway was too optimistic about its traffic potential - not because the LPTB, after 1933, showed little interest in developing it - and not because it formed an attractive site for new Bakerloo sidings in 1939 - but because it was used mainly for bringing in building materials during the period when the intensity of local building was at its greatest ?

Regarding uncoupling, 2-car trains of Pre-1938 tube stock composed of DM-CT were the normal off-peak formation on the Northern City Line when this stock worked the line, from 1939 to 1964. A photograph has also been seen of a Bakerloo train of the same stock at Stanmore Junction, north of Wembley Park in 1939, with the CT at the south end. When 3-car trains of 1938 stock worked on the Northern Line uncoupled services, an additional compressor was fitted on the trailer cars and those so fitted carried a small 'C' under the car number. Presumably the use of uncoupled 3-car and 4-car trains on the Piccadilly Line was aimed at overcoming some of the difficulties presented by uncoupling in service. On the then Hounslow branch, trains could only be uncoupled westbound at Northfields and coupled eastbound at the same place, while on the Uxbridge line, South Harrow was used only on Sundays (coupling here was protracted by the fact that the 3-car unit could only leave the sidings when the 4-car unit had arrived in the eastbound platform) and at Uxbridge. Uncoupling on this line at Uxbridge involved only Pre-1938 stock as with the 1938 stock, the driver of a 3-car unit with the UNDM car leading would only have a restricted view forward on the steep down gradient into the station. Incidentally, this gradient was made more steep following track lifting near the Park Road overbridge in Uxbridge in the earlier 1950's, following an earth slip. Also, 1938 stock trains were 'wrong way round' - i.e. the 'A' end at the east end and the 'D' end west, thus trips from Northfields depot and Acton Works were made via High Street Kensington and Mansion House for turning. After

uncoupling was abandoned, in the late 1950's, the 1938 stock trains on the Piccadilly Line were all turned to face 'right way round'.

An earlier and perhaps first use of the facility at Harrow-on-the-Hill for an Uxbridge line train to leave from platforms 5 or 6 (see NF71/80) occurred during staff training trips with 'F' ('tank') stock prior to the transfer of this stock from the District Line. Off-peak trips were run between platform 5 at Harrow and Uxbridge and also from platform 2 at Harrow to Watford. This latter working may well have been the first use by electric trains of the southbound 'main line' from Harrow North Junction into platform 2. (The six tracking of Harrow-on-the-Hill station was completed in 1948, having been delayed by the war and although the (now) platforms 1 and 6 were built, they remained out of use until 1948). The 1950's also saw the introduction of a late night 'rusty rail' working - an empty 'T' stock train from Watford to Neasden depot ran via Harrow (reverse in platform 2 or shunt from platform 2 to 1 beyond Peterborough Road bridge) and Rayners Lane (reverse in westbound platform). It is also recalled that a freight train from Harrow goods yard to the Uxbridge line was booked on at least one occasion to run via platform 5 because of some engineering works affecting access to the usual 'high level' route. Provision was made for a banking engine to be available should the loaded train stall on the approach to West Harrow station out of the flyunder.

On 3-car trains, these were also operated on the Putney Bridge to Edgware Road services in the late 1940's when 5-car trains were uncoupled by detaching 2-cars as was the custom on this service in the off-peak. The reason for there being one trailer car less can be found in the fact that at the time the District Line were short of trailers, as many Q38 trailers were being converted to R38 motor cars. One such train of these trailers was observed on the 'down main' line at Ealing Broadway, en route to Gloucester.

#### FROM THE PAPERS, RADIO, TELEVISION ETC.

##### Daily Mirror

Date not known, but probably early February, this paper had a centre page spread on the likelihood of the 1988 Olympic village being built on derelict B.R. land at Neasden. The article included a large photograph with two Jubilee Line units at the end of Neasden station in the background.

##### Evening Standard

12.2.80 H.R.H. Princess Alexandra officially opened the Hong Kong MRT Underground railway, unveiling a plaque at Chater station to commemorate the occasion.

28.2.80 A new car park costing £76,000 was due to open at Hatton Cross station from the first week of March. Although it is proposed to make a charge at a later date, parking for 100 cars will be free for the time being.

##### Wembley Observer/News

25.1.80 This issue looks back 50 years when the line between Sudbury Town and Alperton was threatened with closure due to cracks appearing in the bridge over the railway which carried the Bridgewater Road, now identified as bridge D12 on the Piccadilly Line. It was said that the cracks grew to about 4ft wide and was caused due to previous heavy rain. Repair work was undertaken in shifts, and throughout the night.

### Wembley & Brent Times

18.1.80 A footpath between Bridge Road and Empire and Danes Courts in the Wembley Park area has been the cause of many complaints by local residents because of excessive weeds and litter. Although the residents have complained to the Council and to B.R., beside whose track the path runs, both deny any responsibility for it. L.T. has since admitted that it was property belonging to them and would be investigating the complaints.

### The Guardian

22.2.80 The sports section included a long review of the happenings when the England v Scotland football match has been played at Wembley in recent years, i.e. 1973 - guard pushed on to track and was medically retired from injuries in 1976; 1975 - Metropolitan and Bakerloo one-day strike; 1977 - football pitch invaded, thousands of pounds worth of damage done; 1979 - current off after emergency handle operated, crowds invaded tracks and back gardens, broke windows of lorries and Neasden depot office, and whose behaviour at Wembley Park caused the Guardian to remark 'Some may query the word 'human' '. LT and BR are not convinced that the plan to restrict the sale of tickets will reduce the violence, and a report from Mr.C.H.Cope concludes that 'it is unlikely that staff on the Metropolitan and Jubilee Lines will operate trains in 1981, and impossible to condemn them if they decide not to do so.'

### Daily Telegraph

8.2.80 L.T. members of the union ASLEF have warned L.T. that unless trains on the Circle, District, Hammersmith & City and Northern lines are equipped with safety speed sensors (as on the Jubilee Line) to make the operation of the dead man's handle more effective, they will refuse to take out such trains from 1st March.

The G.L.C. yesterday asked L.T. to send it plans for cutting out waste within two months. The debate on the auditors' report on Mr. Leslie Chapman's allegations was conducted on party lines.

18.2.80 Rome's new 9-mile underground railway opened at the weekend, after more than 20 years of planning and disputes over routeing. It cost about £58 million, and runs from south-east Rome, via the City centre, to the Prati suburb, close to Vatican City. There are 22 stations.

23.2.80 NUR union leaders are expected to prepare a pay claim for at least 20% next week.

28.2.80 NUR leaders have described the calls by its members for a strike over a 20% pay claim as 'premature'. Unofficial leaders have set April 28th as a deadline. There is also a threatened one-day strike in protest against increasing attacks on tube workers.

The annual L.T. lost property report cites increased numbers of lost executive briefcases, sports bags, squash rackets, credit and cheque cards and passports, but fewer umbrellas, which are less easily lost if telescopic.

### Modern Railways-Magazine

March 1980 This issue explains why there have been so many cancellations of Hertford North and Welwyn Garden City trains. Not only are staff shortages and rolling stock troubles (especially with couplers) causing cuts, but there is also a long-running dispute with the staff about radio equipment. B.R. wishes to conduct a large-scale test of radio communication between trains and signalboxes, including all inner-suburban trains on the Great Northern system. Advantages include improved safety, possible elimination of signal-post telephones, and

improved use of track possession times. B.R. reaches agreement with the NUR for the radios to be fitted to class 313 EMUs (with both the driver and the guard able to use the radio) with the Union viewing the radio as an additional safety measure. Agreement was also reached to run two radio-equipped units on a unique diagram, initially, and to fit the radio wiring as trains were overhauled at Horwich. However, the crews found that such trains had also been equipped for one-man operation, including wiring for traction interlock switches and relays, and door operation from the driver's cab. The guards' depots at Hitchin and Kings Cross blacked the operation of trains so equipped and at the end of January 1980, 10 units out of 64 had been thus blacked. At the time of going to press with this issue of Underground News, the Daily Telegraph has stated that the blacked units will be brought back into service from Monday 3rd March, at the risk of severe disruption by unofficial industrial action. Incidentally, B.R. have pointed out that the trains would not necessarily be OMO, as the guards might be employed on other duties such as on-train fare collection.

#### Television - 'Training Dogs the Woodhouse Way'

BBC2 - 18.2.80 This programme showed Watford Metropolitan Line station being used as a suitable place for a dog to be taught how to board and alight from a train, with confidence !

### UNITED STATES UNDERGROUND RAILWAYS

by Julian Wolinsky

#### New York

One hundred subway cars which have been retired (but not scrapped) will be rejoining the New York City subway fleet to replace new R-46 cars taken out of service to repair cracked bogies. The older cars - model R-16 - were purchased in 1953 for the BMT and IND divisions. They were removed from service about five years ago because their controllers were constantly shorting-out, and with the city's fiscal crisis (near bankruptcy) it was decided that the repair and/or replacement of the controllers was unaffordable. (The controllers were of an experimental design which had not been used before and has never been used since.) The cars, which were placed in service in 1955, numbered 200 originally. The other 100 will presumably remain sidelined. The loss of about 100 of the R-46's from service at any given time made it worthwhile to spend \$200,000 to clean up the R-16's and to pay the higher maintenance costs. The problem with the R-46's is their bogie frames and the fleet comprises 754 cars. About 15 cars are sidelined each month after cracks in the frames are discovered during twice-monthly inspections. As at 21.12.79, 1,483 cracks had been found in 753 of the bogie frames. Work is already underway to replace every single bogie with a time-proven design. There are some 20 other reported defects in the cars but the NYCTA believes they can be corrected.

For the first time in subway history, New York will use a tunnel boring machine to dig a new transit line. Previously, deep-bore work in New York's bed rock has been accomplished with drilling, blasting and mucking. The machine will save an estimated \$6.5 million while causing less noise, vibration and disruption to the midtown Manhattan neighbourhood where the line is being built.

#### San Francisco

A 10-car BART train was stuck in the 3.6 mile tunnel under San Francisco Bay on 15.1.80 due to a power failure in the third rail. A BART spokesman said that a tiny metal pin connecting a power substation to

the third rail was faulty, causing a lapse in the power supply. He likened it to a blown out fuse. There were no injuries or damage.

### Philadelphia

Two persons were killed in the Philadelphia subway on 1.1.80, a very unusual occurrence since the two lines combined are only about 17 miles in length. One young man was dragged to his death when his foot became stuck in a car door as it closed. Apparently, the staff failed to see his plight and the train pulled out of the station. A young sailor died when he jumped in front of a train entering a station.

## SOCIETY SECTION

### Waterloo & City Line Visit

It is regretted that this visit, planned for 7th March, had to be cancelled. Although an assurance was received by telephone from British Rail that a visit could take place, a subsequent, much later, telephone call said that the visit could not be allowed because of staff shortage and a policy to limit overtime working. All those members who applied to go on this visit have been notified, but we are sorry about the inconvenience caused. Enquiries will be made later in the year to see whether the situation has changed.

### Crystal Palace Pneumatic Railway

The survey by Electrolocation has indicated the presence of something solid beneath the ground on the alignment believed to have been followed by the pneumatic railway. As this survey was 'across' the presumed railway, permission has been sought from the G.L.C. to conduct a further survey, as far as possible 'along' the railway.

### London Underground Roving

A further sponsored attempt on the Underground roving record was made on 21st February by a group of six from the 20th Enfield Scouts. Unfortunately, cumulative lateness caused them to miss the last train to Olympia, which on this day was at 1434 from Earls Court, and the attempt was then abandoned.

### Posting of Underground News No.219

UN219 was posted Sunday evening, 17.2.80.

### Society Officers

Members are reminded that the last complete list of Society Officers, their jobs and addresses appeared in UN217, page 23. Members are further reminded of the importance to send their correspondence to the correct officer. Failure to do this will undoubtedly suffer delay, while the query is sent to the correct person for attention.

### Underground Maps

A message from Doug Rose:

Thanks to your impressive response, work is advancing well on the preparation of a more up-to-date list of known card Underground maps. To assist in my work, I would be very grateful if someone could send me a photocopy of (630-20M-33) which probably dates from early on in the history of London Transport. In fact, if any member can contribute in any way to the further knowledge of Underground maps, I would be pleased to hear from them.

Doug Rose, 35 Summers Lane, North Finchley, London, N12 OPE.

Telephone: 01-445 7310.



ROLLING STOCK ALTERATIONS

February 1980

1960 Tube Stock

Cut up at Ruislip by Resco Ltd., Woolwich  
4911 28th

1967 Tube Stock

From Hainault to Northumberland Park  
3069-4069-4169-3169 3rd  
From Northumberland Park to Hainault  
3077-4077-4177-3177 3rd

CO/CP Stock

From Ealing Common to Ruislip (Condemned)  
53201-013161-54220 1st  
53208-54237+53231-54024 4th  
53055-54255+53228-54252 5th  
53266-013060-54223 6th  
53213-013091-54196 7th  
53057-013187-54257 14th

R Stock

From Ealing Common to Ruislip (Condemned)  
23511-22616 29th

CO/CP and R Stock

From Ruislip to Kings, Newmarket, for scrap  
21131 23310 23427 23545 22636 53004 53254 54004 013077 28th

D Stock

From Metro-Cammell, Birmingham, Delivered to Ruislip  
7002-17002-8002+8003-17003-7003 1st  
7004-17004-8004+8005-17005-7005 16th  
7006-17006-8006+8007-17007-7007+7520-17520-7521 26th

From Ruislip to Ealing Common

7000-17000-8000 1st  
8003-17003-7003 14th  
7002-17002-8002 15th  
8005-17005-7005 25th  
7004-17004-8004 26th  
7520-17520-7521 29th

Entered Service, District Line

7514-17514-7515+7526-17526-7527 4th  
7534-17534-7535+7536-17536-7537 4th

Miscellaneous Movements

L152+1051+L153 Golders Green to Acton (collision) 22nd  
3433-4533-3533 Neasden to Acton (collision) 25th

Units to Acton for Overhaul

Metropolitan 5040-6040-6041-5041 4th  
Northern 1282-2282-1283 5th  
Northern 3205-4205-4305-3305 6th  
Central 1528-2528-9529-1529 11th

Units to Acton (continued)

District	21147-23320-23413	14th
Northern	1196-2196-9197-1197	14th
Metropolitan	5052-6052-6053-5053	19th
Northern	3406-4506-3506	21st
Central	1530-2530-9531-1531	25th
Victoria	3067-4067-4167-3167	26th
District	23568-22669	28th
Northern	1186-2186-1187	28th

Units from Acton after Overhaul

Northern	1166-2166-1167	5th
Northern	3204-4204-4304-3304	6th
Metropolitan	5517-6517	7th
Victoria	3070-4070-4170-3170	10th
Metropolitan	5018-6018-6019-5019	11th
Central	1494-2474-9495-1495	11th
Northern	1170-2170-1171	13th
Bakerloo	10319-012393-11319	15th
Metropolitan	5020-6020-6021-5021	19th
Northern	3405-4505-3505	21st
Northern	1164-2164-9165-1165	22nd
Central	1452-2494-9453-1453	25th
Victoria	3049-4049-4149-3149	26th

Reformations

From	To	Notes
1050-2050-1051	1050-2096-9097-1097	1051 Collision, 2050 stored, 1096 derailment.
1450-2450-9451-1451	1450-2514-9515-1515	DMS damaged
1514-2514-9515-1515	1514-2450-9451-1451	
1588-2588-9589-1589		1588 collision, 2636
1636-2636-9637-1637	1636-2588-9589-1589	9637, 1637 spare.
1520-2520-9521-1521	1520-2696-9697-1697	
1696-2696-9697-1697	1696-2520-9521-1521	DMS damaged
1494-2494-9495-1495	1494-2474-9495-1495	
1452-2452-9453-1453	1452-2494-9453-1453	

NEWSFLASHES

NF 94/80 Notices have been positioned on several cross-platform interchange stations recently to remind guards to allow passengers to interchange between trains. The notices read:

NOTICE TO GUARDS  
WAIT FOR PASSENGERS  
TO CHANGE TRAINS  
ACROSS THE PLATFORM  
whenever possible in  
accordance with the  
regulations.

At Finchley Road, on the northbound platforms, these have been trimmed so that the first line reads 'NOTICE TO GUARD'.

NF 95/80 Further to NF78/80, 1972 MkII stock unit 3459-4559-3559 lacks armrests throughout the unit, the spaces being blocked off with filler buttons.

NF 96/80 1972 MkII stock 4-car unit 3260 has finally re-entered service, being noted on 4th February. This unit was derailed while on the Bakerloo - prior to the opening of the Jubilee.

- NF 97/80 London Transport has told the Greater London Council that it plans to seek the closure of the Epping-Ongar single line branch of the Central Line, because of continuing heavy financial losses. It is said that only 650 passengers use the service each weekday, most of those being in the peak period. The line currently loses over £600,000 per year.
- NF 98/80 A person under a train at Liverpool Street (Met.) at lunch-time on 16.1.80, required the D stock train on public view at Mansion House to be moved back to Ealing Common depot at short notice, so that the bay platform could be used for reversing inner rail Circle Line trains.
- NF 99/80 A 'through' District Line train operated from the northern side of the Circle Line on Saturday 12.1.80 in connection with the football match between Chelsea and Newcastle. Anticipating a party of about 500 fans from Newcastle, a 6-car C stock train originating from Parsons Green sidings was available at Moorgate to convey the party direct from Kings Cross to Fulham Broadway.
- NF 100/80 Further to NF 35/80, 1972 MkII stock DM 3248 has been seen in service with a 'mixed' Willesden Green destination, made up of type 1 (WILLESDEN - tall lettering) and type 3 (GREEN - small lettering).
- NF 101/80 The following surface stock cars are likely to be preserved:-  
 CP stock DM 54233 by the Quainton Railway Society. This car was one that was damaged in the war and rebuilt using part of another war damaged car, 013167. A car of CO or CP stock is also destined for Passmore Edwards Museum in East London. It is also likely that the LT Museum will preserve R49 NDM 23231, the one that appeared in the Festival of Britain in 1951.
- NF 102/80 The L.T. Shop at Charing Cross closed to the public on Friday 29th February, and that at Griffith House is due to close on Friday 28th March 1980. A new shop is due to be opened at the L.T. Museum and the Shop at St.James's Park remains open. The L.T. Photographic Library will also continue to operate at Griffith House. The addresses for enquiries are:-  
Mail Order:  
 L.T. Publishing & Souvenir Division (Mail Order),  
 Griffith House,  
 280 Old Marylebone Road,  
 London, NW1 5RJ.  
Trade:  
 L.T. Publishing and Souvenir Division (Trade),  
 Griffith House,  
 280 Old Marylebone Road,  
 London, NW1 5RJ.  
General:  
 L.T.Shops,  
 Public Relations Office,  
 55 Broadway,  
 London, SW1H OBD.
- NF 103/80 Another anomaly appears to exist in station names at Chancery Lane on the eastbound line diagram, which shows REDBRIDGE as RED BRIDGE.

- NF 104/80 Above the stairs at the Lombard Street entrance to Bank station, some tiles have been removed and underneath is a notice saying 'Down these stairs to Central London Railway and Waterloo Railway', but there is no mention of the City & South London Railway.
- NF 105/80 A further unit of 1973 stock has been fitted with grab rails instead of straps by the longitudinal seats, being 119, in addition to 249.
- NF 106/80 An event which appeared to go un-noticed was 100 years of the District Railway between W. Brompton and Putney Bridge, on 1st March 1980.
- NF 107/80 The unmodernised 1906-7 vintage lifts at Borough are likely to be replaced by modern lifts, costing £1.4 million.
- NF 108/80 L.T. has received tenders from three manufacturers for 34 new 30-ton bogie hopper wagons, at a cost of £1.1 million. These would replace the existing 4-wheel 20-ton hopper wagons which are in a poor condition. The existing wagons convey about 20,000 tons of limestone a year from Lillie Bridge, Neasden and Ruislip to working sites. The new wagons will have buckeye couplers and through control lines, allowing the elimination of a rear crew on certain trains.
- NF 109/80 By early February 1980, all the seat recess tiles on the Victoria Line platforms at Green Park had been replaced by tiles showing the same pattern as on the Jubilee Line, i.e. photographs of plane tree leaves of assorted sizes. However, the Jubilee Line leaves are black on a red background, but the Victoria ones are green on grey, which gives a much more natural effect.
- NF 110/80 Not new, but not previously mentioned, is the pocket timetable booklet for the Euston/Broad Street-Watford/Richmond and associated services, which commenced on 14.5.79. There is a useful summary of all trains between Stonebridge Park and Queens Park - the sequence between 0807 and 0837 is: Euston, three trains to Elephant, two to Broad Street, two to Elephant, Euston - not a very even distribution! In the centre there is a heading proclaiming 'A visual appreciation of the train services in this booklet' but this turns out to be merely a simple line diagram of stations.
- NF 111/80 A widely-distributed L.T. poster states 'From the end of March until August, the Rampayne Street entrance to Pimlico station will be rebuilt during the construction of a new office block. The existing entrance and stairs will be replaced, and a temporary ticket office installed. The escalators will be reversed in order to help passenger movement within the ticket hall. London Transport apologises for any inconvenience caused by this work.' Inspection of the site reveals that, except for a small row of three-storey Victorian houses in Bessborough Gardens, the whole of the large triangle bounded by Vauxhall Bridge Road, Rampayne Street and Bessborough Street has been cleared, and work has started on the foundations. (Incidentally, the premises that were used as offices for a few years by our former Chairman, Peter Davis, have disappeared without trace.) The development is known as Drummond Gate, Phase I, and this phase comprises an office building for the Crown Estate Commissioners. The main contractor is Harry Neal.
- NF 112/80 A fire under the arches of the Hammersmith & City Line at Wood Lane on 4.2.80, caused a service suspension for some time, necessitating the use of Ladbröke Grove cabin

- NF 112/80 (Cont'd) for reversing the service west to east. This signal cabin is now the only one that has the large signal levers and rodding to the points on L.T.
- NF 113/80 Notices have been appearing above the 'J' door handles that have been fitted with glass, for security. It reads 'For emergency access, break the glass. Penalty for improper use £50.'
- NF 114/80 L.T. Staff News has given details of proposals put to the G.L.C. to save £12 million out of £115 million in 1980, because of a cut in the Government grant to the G.L.C. Proposed cuts affecting the railways include a 12½% slowing down in station modernisation and reconstruction; a 3% cutback in the track renewal programme; slowing down train radio installation and preparing for ATO on the Jubilee Line. However, the London Transport Committee of the G.L.C. is unhappy about the last two proposals, and the G.L.C. has told L.T. that it still wants one-man operation on the Jubilee Line as soon as new rolling stock is delivered. £1.1 million would also be saved on the Terminal 4 extension of the Piccadilly Line, apparently because the B.A.A. might finance the scheme.
- NF 115/80 On Wednesday morning 6.2.80, part of a 7-car 1956/59 stock train became derailed leaving Highgate depot, having passed the outlet signal at danger. The leading car, 1096, went through the sand drag and ended up fouling the southbound line tilted at about 30°. The train was formed of cars 1096-2096-9097-1097+1006-2006-1007 and was the 0554 departure from the depot. As a result, all other trains were 'blocked in' Highgate depot and Highgate Wood sidings. Until about 0830 a shuttle service operated between Finchley Central and Mill Hill East as many early journeys to Mill Hill originate from Highgate. Extensive damage was done to the equipment underneath car 1096, the 'A' bogie being displaced back to the 'D' bogie which in turn was knocked back to the coupling point between 1096 and 2096. To enable car 1096 to be re-railed, an engineer's train with a crane was transferred from Ruislip depot, arriving at Highgate at about 1600, bringing with it two replacement bogies. Car 1096 was subsequently lifted onto the two new bogies by the crane. Cars 2096, 9097 and 1097 were transferred to Golders Green on Sunday night 10.2.80, but 1096 remains at Highgate for transfer to Acton for repair at a later date.
- NF 116/80 Fairclough, Southern Division has been awarded a £1.8 million management fee contract by L.T. for fitting out at Kings Cross (Midland) interchange. Work is scheduled to start in May and will be carried out on three levels providing a booking hall at street level and finishings to platforms, a passenger footbridge and staircase on two underground levels. Also included is fitting out of a 220 metre subway linking the interchange with the Piccadilly and Victoria lines. Completion is estimated for late 1981.
- NF 117/80 At Arsenal station, on the line diagram at the foot of the stairs before you enter the platform, the metal plate carrying the word 'Oakwood' has been removed (or pinched!) and 'ENFIELD WEST (OAKWOOD)' is now showing. Nice to see, and probably mystifying to some passengers.
- NF 118/80 It appears that the red-half front experiment on a train of 1962 stock (DMs 1422 and 1445) has ceased, as 1445 was seen in the middle of a train on 7.3.80.

- NF 119/80 Further to NF 93/80, more coupling tests have been carried out with C and D stock. D stock unit 7502/3 went to Hammer-smith on Tuesday 4.3.80 and returned on Wednesday 5.3.80.
- NF 120/80 The last semaphore arm signals to be used by L.T. trains were removed over the weekend of 23/24 February, when signalling in the Richmond area, served by both District Line and B.R. North London Line trains, was converted to colour light operation. This signalling belongs to the Southern Region of B.R. and the alterations, together with a look at how Richmond used to be, will be described in the May issue of Underground News. (Incidentally, the last semaphore signals belonging to L.T. and used by L.T. were at North Weald and these were finally removed in 1978. They were, of course, inherited from the L.N.E.R. The last L.T. semaphores were removed in the early 1950's at Hanger Lane Junction on the District and Piccadilly lines.)
- NF 121/80 D stock train 7000-17000-8000+7500-17500-7501 was taken to Acton Works on 26.2.80, to enable the UNDM car (8000) to be weighed.
- NF 122/80 The first of the modernised stations on the East London Line was inspected on 5.3.80 by the Chairman of the Greater London Council's London Transport Committee, Mr. Harold Mote, and L.T.'s Chairman Mr. Ralph Bennett, when they visited Shadwell where beige plastic panels on the platforms have replaced unsightly corrugated iron. Fluorescent lighting has been installed and the stairs and ticket hall have been renovated. Work continues on the other stations on the East London Line.
- NF 123/80 C69 stock de-icing trailer 6543 has, at last, had a letter 'D' added beneath the car number - in painted form and not transfers as is normal.
- NF 124/80 In Glasgow, the new B.R. station at Partick opened on 17th December 1979, and the former station, Partick Hill, just to the west, closed. Although regarded as an interchange station with the Underground, this is not yet opened.
- NF 125/80 The reversing siding at Northolt was fitted with a 15 mph approach controlled trainstop from Friday 17.1.80, for trains entering.
- NF 126/80 The upright girders on the canal bridge at Alperton (D17) were removed over the weekend of 23/24 February. They were cut into triangular sections and were piled at canal ground level.
- NF 127/80 Work has started on the platforms at Alperton in replacing the concrete lamp posts and the concrete uprights that hold the roundels. Temporary station names have been fixed, ranging from card/paper types to a metal roundel, without the brass edging, tied onto a plank of wood with wire!
- NF 128/80 A correspondent has recently noticed that the northbound line diagrams at Tooting Bec and Tooting Broadway show British Rail interchange at Clapham North. A quick consultation with a street atlas will show the nearest station to Clapham North is Clapham (S.R.), some 5 minutes walk away. He also suggests that if this trend is to continue, other stations which might qualify for a B.R. interchange 'plate' might be Bethnal Green and Wood Green, both of which have B.R. stations within reasonable walking distance?

- NF 129/80 New car line diagrams noted in R stock trains include B.R. interchange at West Ham.
- NF 130/80 L.T. have tried a car set of polyurethane coated wheels. At least two manufacturers have shown interest - Watts Ltd., and Dunlop, the latter having since withdrawn from the project. It is assumed that the purpose of the trial is to try and reduce noise and vibration generated at the wheel tread, where the polyurethane is situated, but what happens during braking and how are track circuits made?
- NF 131/80 Further track recording with a 4-car unit of 1962 stock has taken place as follows (unit 1598-2598-9599-1599):-
- Sunday 10th February  
Northfields-Heathrow-Kings Cross-High Barnet-Mornington Crescent-Edgware-Kings Cross loop-Cockfosters-Uxbridge-Neasden depot.
- Monday 11 February  
Neasden-Watford-Northwood siding-Amersham-Harrow (No.2)-Rickmansworth-Baker Street (Met.)-Stanmore sidings via Jubilee-Baker Street (Met.) via Jubilee to Finchley Road-Ruislip siding-Acton Town-Ealing Broadway-White City depot-West Ruislip-Ruislip depot.
- Tuesday 12 February  
Ruislip depot-West Ruislip-Hainault via Newbury Park-Woodford-Epping-Leytonstone-Hainault-Ealing Broadway via Newbury Park-Acton Town-Northfields depot.
- Wednesday 13 February  
Northfields depot-Edgware Road-Hammersmith (Met.)-Upminster-Putney Bridge-Edgware Road-Northfields depot.
- Thursday 14 February  
Northfields depot-Aldgate East-New Cross Gate-Whitechapel-New Cross-Edgware Road via Liverpool Street-Northfields depot.
- Sunday 17 February  
Northfields depot-Kings Cross-Euston-Kennington-Golders Green depot via Bank-Morden via Charing Cross-Finchley Central via Charing Cross-Park Junction-Finchley Central-Kings Cross loop-Arnos Grove-Northfields depot.
- Monday 18 February  
Northfields depot-Acton Town-Ruislip siding-Finchley Road-Charing Cross (Jubilee)-West Hampstead-London Road depot-Queens Park-London Road depot-Neasden depot.
- Due to defective recording equipment, a repeat run of 11.2.80 was carried out on Wednesday 20 February and also a repeat of 17.2.80 was carried out on Sunday 24 February. It is interesting to note that the Victoria Line was excluded from this series of runs, and the Bakerloo/Jubilee of 18.2.80, was worked in the evening after the peak. This is also the first time that a 1962 stock has worked to Charing Cross on the Jubilee Line.
- NF 132/80 A correspondent reports that on at least one occasion, a guard working a D stock train has had to use the public address system to inform passengers of the need to push the buttons to alight from the train!
- NF 133/80 C69 stock cars have recently been seen in service with Central Area maps without the Jubilee Line included. These are 5600 and 6589, so far noted.

## THE TIMETABLE (Continued)

### Saturday 17 May

As 1980 will be 40 years since the proposed opening of the 'Northern Heights' electrification scheme, most of which came to nothing, the Society is organising a morning visit to Highgate depot and Park Junction signal box, followed by a midday and afternoon walk over the accessible parts only, of the Finsbury Park to Alexandra Palace section. There will be a refreshment break between the visit and the start of the walk, at a location yet to be decided. For Highgate depot and Park Junction cabin, the minimum age is 15 years. Associate members, please state age when applying.

The numbers allowed for the depot and signal cabin visit are VERY RESTRICTED, and therefore, when applying, will ALL applicants please state:-

- 1) Whether you are applying for the depot/signal cabin visit or walk or both.
- 2) Whether you will be willing to participate in the walk only, if your application for the cabin/depot is unsuccessful.
- 3) Whether you wish to participate in the walk only.

Full details of timings and itinerary will be sent out to the successful applicants.

Personal applications, for this visit/walk only, with SAE, to Mr.B.R.Hardy, 13 Castleton Road, Eastcote, Ruislip, Middlesex, HA4 9QQ, marking the envelope 'Northern Heights Visit'.

### Friday 13 June

Programme of cine-films by Mr.D.M.Hibbert, including 'The Met. in the 1960's' and 'Steam Locomotives on L.T. service duties', 1900 for 1915 at Hammersmith Town Hall.

## FURTHER VISITS IN 1980

For your information, the Society has arranged visits to the following installations later in 1980:

Acton Apprentices' Training Centre, Bicester Military Railway, Cockfosters depot, Ealing Common depot, Kings Cross BR signal cabin, Neasden South signal cabin, Ruislip depot, Westinghouse Brake & Signal Co. at Chippenham, White City depot.

However, please do NOT apply for any of these visits until details are announced in Underground News. We hope that it will be possible to arrange visits to additional venues during the year.

### TAIL-PIECE

Further to that on page 114 of previous issue, this is nowadays a very rare sight and harks back to the old days when the 'DOGS MUST BE CARRIED' rule was strictly enforced on escalators, and passengers without dogs were forced to use the stairs. At the outbreak of World War II there was a shortage of live dogs, so the authorities decreed that in future it would be acceptable to carry stuffed dogs instead. It is nice to know that there are still people around with a sense of tradition.

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