A FINANCIAL REVIEW OF THE METROPOLITAN DISTRICT RAILWAY: THE INDEPENDENT YEARS 1864-1901

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1. Introduction

When researching for my article on the financial history of the Metropolitan Railway[i] (MR), I made a comparison of the MR's performance in 1900 with that of the Metropolitan District Railway (MDR), its last full year of independence. This prompted an interest in the MDR, which was reinforced by the fact that I was fortunate enough to obtain the services of the late Mike Horne to review my draft before submission for publication. Mike's two volume history of the MDR[ii] is considered by most authorities to be the definitive history of that company. Volume I's Appendix Nine and Volume 2's Appendix Five contain yearly totals of passenger numbers and revenue, and totals of route mileage and passenger train mileage for selected years. There are also other pieces of financial information in the various chapters of the two volumes. None of the previous authors covering the history of the MDR, such as Alexander Edmonds[iii] and Charles Lee[iv], had provided more financial information. Mention should be made of Douglas Rose's Diagrammatical History[v], which has been a useful source of reference for the opening of the MDR's stations.

I thought that it would be useful to supplement the financial information provided by Mike Horne by attempting a full financial review initially for the independent years. It is well known that the MDR had a series of financial difficulties during its history as an independent company and was only able pay dividends on its ordinary shares in a few years. It was eventually taken over by the Yerkes Group in March 1901, because of its inability to finance the electrification of its network. In 1902, it became a subsidiary of the Underground Electric Railways of London (UERL), the Yerkes Group holding company. A full financial review will help readers to understand how this situation came about. This article takes as its basis the annual reports of the MDR[vi] and the Railway Returns[vii].

The investors in the MDR needed to have had confidence in the performance of the company to continue to finance its development, and its accounts were important evidence in making that judgement. By 1900, it was patently obvious that investors in the UK had concluded that financing the MDR's electrification was too risky. The directors and managers of the MDR also needed a regular stream of financial information to fulfil their role. However, given the evidence that was available of the MDR's financial difficulties, it is surprising that not more effort was made to turn

things around. Mike Horne suggests that the role of James Staats Forbes as chairman 1872-1901 and as managing director for most of that time was influential in bringing that situation about. Part of this was the result of the multiple business interests that he had, particularly as chairman and managing director of the London Chatham & Dover Railway (LCDR), but also non-railway interests such as chairman of the London Electricity Supply Company. He was also adept at deflecting shareholder criticism, including by marshalling proxy votes at meetings. However, he seems to have been less active in following this up with remedial measures.

Appendices 1 and 2 give an overview of capital financing structure, and running powers, leased lines and joint lines respectively and these provide a useful aid in looking at the financial history of the MDR.

From the second half of 1868 through to 1901, the production of financial information by railway companies was governed by the Regulation of the Railways Act 1868 (the 1868 Act). This article attempts to produce tables that are consistent with those required by the 1868 Act, albeit that the information for 1864 to the first half of 1868 has been adjusted to achieve that end.

To present the subject matter for the MDR during its independent years in a manageable way, it is broken down into time periods:

a. Early Construction and the Opening to Mansion House 1864-71
b. Opening of the Extensions to Ealing, Richmond and Putney Bridge 1872-80
c. Opening of the Extension to Hounslow, and the City Lines and Extensions 1881-84
d. Opening of the Extension to Wimbledon and the first South Harrow powers 1885-94
e. Opening of the South Acton Spur, the start of work on the South Harrow Extension and the takeover by the Yerkes Group 1895-1901

2. Early Construction and the Opening to Mansion House 1864-71

The Act of 1864 incorporating the MDR gave it powers to complete part of the Inner Circle, which Parliament envisaged would provide an underground railway serving the then Central London and connect with the terminals of most of the main line railways, and for which they had already granted the MR powers to build from South Kensington to Tower Hill via Paddington. The principal line within the powers given to the MDR was from South Kensington to Tower Hill together with spurs to West Brompton via Gloucester Road from High Street Kensington and to a junction with the West London Railway (WLR) near Addison Road. The first construction work did not take place until June 1865.

The Overend and Gurney financial crisis in 1866 made it difficult for the MDR to raise the capital required for construction at reasonable rates and this together with cost overruns meant that it was not able to progress further east than Mansion House. The lines that it was able to complete opened as follows:

South Kensington to Westminster Bridge December 1868
Gloucester Road to West Brompton April 1869
South Kensington to Gloucester Road April 1869 (not used for through traffic until August 1870)
High Street Kensington to the WLR at West London Junction September 1869 (not connected up and used for traffic until February 1872)
Westminster Bridge to Blackfriars May 1870
Blackfriars to Mansion House July 1871

The above comprised just over seven miles of owned track.

The MDR produced a Revenue Account for the first time covering the first half of 1869, which presumably included the transactions in the last few days of December 1868. It was an unusual situation in that it had been assumed that the MR and MDR would amalgamate, when the Inner Circle was completed, and by an agreement in 1866 the MR would operate and maintain the MDR's lines, when they opened. The MR collected all the revenues and paid over 55 per cent to the MDR. This arrangement became increasingly unsatisfactory to the MDR, and a year's notice was given for the arrangement to end at the beginning of July 1871. It was thus that 1871 saw the initial expenditure on locomotives and coaching stock for the MDR to operate. This comprised 24 locomotives of a similar design to the MR's no 1 class and 152 four wheeled coaches (38 1st class, 38 2nd class and 76 3rd class).

One unusual feature of the Revenue Account for the second half of 1871 and the first half of 1872 was the receipt of two payments of £50k from the London & North Western Railway (LNWR). This related to the provision of a platform for its exclusive use, and access to its own water tank and coal stage, at the Mansion House terminus. This enabled the LNWR to run its own trains from Broad Street via Willesden Junction and Addison Road, and thence to Mansion House over MDR's tracks.

The capital authorised by the 1864 Act to construct the initial set of lines was £3.6m in shares and £1.2m in loans, making a total of £4.8m. The latter could only be issued when all the shares had been subscribed for and at least half paid up. An Act in 1865 authorised a further £150k in shares and £50k in loans in relation to small diversion affecting the spur to the WLR. The cumulative capital authorised thus increased to £5.0m and was still at that level at the end of 1871.

By the end of 1868, capital created totalled £3.0m consisting of £2.250m in shares and £750k in loans. In the aftermath of the Overend and Gurney financial crisis it was proving increasingly difficult to issue more ordinary shares and an Act of 1869

authorised the MDR to create £1.5m of 5 per cent non-cumulative preference shares. This together with loans brought the total capital created to £5.0m. It was still at this level at the end of 1871.

By the end of 1871, a sum of £4.969m in capital had been received consisting of £3.720m in ordinary and preference shares and £1.249m in debenture stock and loans. The majority of the latter was in 6 per cent debenture stock, the interest on which had to be paid before any dividends to the preference shares and ordinary shares.

An analysis of capital expenditure during the period was as follows:

TABLE 1
METROPOLITAN DISTRICT RAILWAY CAPITAL EXPENDITURE 1865-71

	1865	1866	1867	1868	1869	1870	1871	Total
	£	£	£	£	£	£	£	£
Lines in the Course of Construction								
Land Purchase	402,426	532,133	177,592	342,217	203,595	193,273	127,657	1,978,893
Construction of Way & Stations	140,000	390,500	413,882	412,377	345,244	189,627	219,502	2,111,132
Law & Parliamentary	48,434	11,740	8,344	4,585		8,373	4,853	86,329
Interest & Commission			10,173	61,502	75,921	29,586	12,678	189,860
Directors' Expenses	47,439	20,929	7,796	4,664	5,109	2,846		88,783
Deposit Metropolitan Board of Works				40,000				40,000
Premium on Debenture Stock						(12,035)	(7,908)	(19,943)
Rebate on Issue of Preference Stock					548,768			548,768
Total	**638,299**	**955,302**	**617,787**	**865,345**	**1,178,637**	**411,670**	**356,782**	**5,023,822**
Lines Open for Traffic								
Land Purchase							26,676	26,676
Construction of Way & Stations							84,472	84,472
Law & Parliamentary							2,492	2,492
Total							**113,640**	**113,640**
Working Stock							112,948	112,948
Premium on Debenture Stock							(42)	(42)
Received from LNWR							(50,000)	(50,000)
Total	**638,299**	**955,302**	**617,787**	**865,345**	**1,178,637**	**411,670**	**533,328**	**5,200,369**

It can be seen that the £5.024m spent on constructing just over 7 miles of line was very expensive, in part because it mainly passed through built up areas with a number of historic buildings to protect, land was relatively expensive, and a number of main sewers crossed the line of the route. The stretch between Westminster and Blackfriars presented particular problems, as it was built below the water level behind the new Victoria Embankment wall. It was difficult to sell the new preference stock and a rebate of £549k was needed as an inducement, although there was a small premium on the issue of debenture stock. The Metropolitan Board of Works was involved in a major upgrade of London's drainage and sewers at the same time as the MDR was building its line and a £40k deposit was paid in connection with interference with their work.

Some £114k was spent on capital items after the line to Mansion House was opened in 1871. As mentioned above, the MDR began to run its own locomotives and rolling stock from the beginning of July 1871 and the expenditure on these was £113k. The first half of the contribution agreed with the LNWR for its facilities at Mansion House Station was received in the second half of 1871.

A Revenue Account was produced for the first time in the first half of 1869 and the details for the years to 1871 were as follows:

TABLE 2
METROPOLITAN DISTRICT RAILWAY REVENUE ACCOUNT 1869-71

	1869 Year £	1870 Year £	1871 Year £
Receipts			
Passenger Receipts from MR	40,214	64,957	57,630
Passenger Receipts direct to MDR			74,953
Rents	1,219	2,861	3,841
Transfer Fees	123	188	510
Sub Total	41,556	68,006	136,934
Expenditure			
MR's Working Expenses 45% of Receipts	18,645	33,998	27,143
Maintenance of Way, Works & Stations			3,655
Locomotive Power			13,692
Carriage & Wagon Repairs			1,084
Traffic Expenses			12,782
General Charges	2,001	4,275	8,247
Law Charges			250
Compensation			3,395
Rates & Taxes and Government Duty			2,686
Joint Line Expenses			1,240
Sub Total	20,646	38,273	74,174
Revenue Balance	**20,910**	**29,733**	**62,760**

Passengers Carried by MDR 1871 2nd Half **9,450,691**

Not too much should be read into the Revenue Account for 1869-71, particularly as it was a period of transition, when the MDR took over the running of its services from the MR. Despite the MDR's dissatisfaction with the revenue sharing arrangement with the MR, reasonably healthy revenue balances were achieved in 1868-69 and the first half of 1870. Figures analysed by class for both passengers carried and revenue did not appear in the accounts until 1872, although total figures were given of both for the second half of 1871.

No Net Revenue Accounts were produced for 1869-71, although these began to appear from the first half of 1872.

3. Opening of Extensions to Ealing, Richmond and Putney Bridge 1872-80

Having established a City terminus at Mansion House, the MDR was not in a hurry to play a part in completing the Inner Circle. The reason for this was mainly financial. The cost of reaching Mansion House was considerably in excess of the original estimates and the cost of extending further into the City looked very challenging.

There was also a fear that completing the remaining few miles of the Inner Circle would not produce a large uptake of passengers, as the majority of the passengers who would use the new stations would mainly be those already using Mansion House and the MR's stations between Farringdon and Aldgate. Finally, both the MDR and MR appointed a new chairman in the years 1871-72 in the persons of James Staats Forbes and Edward William Watkin respectively. To complete the Inner Circle would require the collaboration of the two men, but both were strong characters who were not minded to make concessions to each other.

It was not therefore surprising that Forbes and the MDR board looked towards the West of London to extend their network. Cost was a very important consideration and that area was still semi-rural and more suited to railway expansion. There was also the prospect of co-operation with other railway companies, particularly the London & South Western Railway (LSWR), and either developing joint railways or obtaining running rights.

The following lines were opened in the period 1872-80:

Earl's Court to West London Junction February 1872
West Kensington to Hammersmith September 1874
Hammersmith to Studland Road Junction (LSWR) June 1877
Turnham Green to Ealing Broadway July 1879
West Brompton to Putney Bridge* March 1880

*also referred to as the Fulham Extension

These extensions added just under 6 miles to the MDR's track mileage making a total of nearly 13 miles. The opening of a connecting junction with the LSWR at Studland Road enabled the MDR to obtain running powers over the LSWR line to Richmond from June 1877, a distance of just over 4 miles bringing the total of track miles over which the MDR had running powers to 11½ miles. The first part of this line to Turnham Green was later used by MDR trains to Ealing Broadway from July 1879.

The increases in capital authorised and created and the amount received into the capital account over the period were as follows:

	31 December 1871	31 December 1880	Increase
	£m	£m	£m
Capital Authorised & Created			
Shares	3.750	3.994	0.244
Loans	1.250	1.850	0.600
Total	**5.000**	**5.844**	**0.844**
Amount Received into Capital Account			
Shares	3.720	3.994	0.274
Loans	1.249	1.553	0.304
Total	**4.969**	**5.547**	**0.578**

The increase in capital authorised and created of £244k of shares and £600k in respect of loans related to Acts of 1873 and 1877.

The increase of £244k in shares was under the 1873 Act and related to the extension to Hammersmith. This extension had been built by a separate company, the Hammersmith Extension Railway, and an Act of 1874 enabled the MDR to take it over by means of £244k of 4½ per cent rent charge stock, which had priority over the existing ordinary and preference shares. The 1873 Act also enabled the MDR to raise £500k to fund an overrun on the cost of the initial line to Mansion House and that of purchasing its own locomotives and rolling stock. The 1877 Act enabled the MDR to fund the £350k in respect of the Ealing Extension from Turnham Green to Ealing Broadway. This was issued in the form of an Ealing Extension Mortgage with a 4 per cent coupon.

An analysis of capital expenditure during the period was as follows:

TABLE 3
METROPOLITAN DISTRICT RAILWAY CAPITAL EXPENDITURE 1872-80

	1872 £	1873 £	1874 £	1875 £	1876 £	1877 £	1878 £	1879 £	1880 £	Total £
Lines in the Course of Construction										
Nil										
Lines Open for Traffic										
Land Purchase	57,931	4,320	118,002	26,613	4,824	1,081	123	2,185	735	215,814
Construction of Way & Stations	33,192	11,281	4,304	7,102	4,087	51,667	39,188	3,844	13,097	167,762
Law & Parliamentary	1,038	2,782	796	379	5 32	234	485			6,246
Hammersmith Extension Works			244,444							244,444
Balance on Net Revenue Account				768						768
Balance of Capital a/c Transferred	14,608		9,177							23,785
Total	**106,769**	**18,383**	**376,723**	**34,862**	**9,443**	**52,982**	**39,796**	**6,029**	**13,832**	**658,819**
Working Stock	1,607	1,743	4,302	785	15,887	2,260	560	14,024	538	41,706
Premium on Debenture Stock		(15,617)		(83)			(8,527)	(793)	(7,625)	(32,645)
Discount on Ordinary Shares									6,720	6,720
Realisation of Land 1873 Act				(188,057)	(36,881)	(6,890)	(12,412)	(4,303)	(344)	(248,887)
Received from LNWR	(50,000)									(50,000)
Metropolitan Board of Works							(40,000)	(10,000)		(50,000)
Received from a Contractor re Shares							(5,590)			(5,590)
Forfeited on Application for Shares								(1,790)		(1,790)
Redemption of Land Tax		6,358	6	140	573	99				7,176
Total	**58,376**	**10,867**	**381,031**	**(152,353)**	**(10,978)**	**48,451**	**(26,173)**	**3,167**	**13,121**	**325,509**

It is noticeable that, despite the western extensions to the MDR's network during the period, no capital expenditure appears under lines under construction. Following the opening of the line to Mansion House, the MDR was in a weak financial position and could not raise the ordinary shares that would be necessary, if it constructed the extension lines itself, without a substantial discount. Also, any accompanying loans would need to have a high rate of interest. The three lines to Hammersmith, Ealing Broadway and Putney Bridge were all constructed by separate companies and, when completed, were taken over by the MDR, which issued rent charge stocks to the three sets of developers guaranteeing them a fixed income with priority over the MDR's existing ordinary and preference shareholders.

A sum of £659k was spent on lines open for traffic over the period including sums transferred from the balance sheet. Following the completion of the Hammersmith Extension by a separate company, a sum of £244k was transferred to the MDR as it took over the line. Also included in the total expenditure was a large sum in respect of the new four track station at Earls Court.

The extensions required an increase in the numbers of locomotives, passenger coaches and service vehicles and £42k was spent on these during the period. At the end of 1880, the fleet consisted of 30 locomotives, 46 1st class coaches, 53 2nd class, 89 3rd class and 19 service vehicles. The total fleet of 237 was 61 higher than at the end of 1871.

A series of other items made up the total net expenditure of £326k. When issues of debenture stock were made, these were able to be made at a premium because of the high rate of interest and the premium element of £33k was credited to capital expenditure. By contrast, the MDR's ordinary shares had to be issued at a discount of £7k because of the poor prospects for dividends and this discount was charged to capital expenditure.

There were several one-off receipts that were credited to capital expenditure comprising the second instalment of £50k from the LNWR for its facilities at Mansion House, £50k from the Metropolitan Board of Works in respect of the Victoria Embankment work, £6k from a contractor to purchase shares given him in lieu of payment and £2k from potential shareholders, who abandoned their applications. There were several payments totalling £7k in respect of land tax under the scheme then current whereby a lump sum payment could be made in lieu of annual payments.

There was also a credit of £188k in 1875, which was to be the first of several over a period of years, with a total of £249k up to 1880. This related to sales of surplus land, which resulted from a provision in the MDR's 1873 Act. When the MR and the MDR lines between High Street Kensington and South Kensington were built, the land for these was bought as a joint enterprise and not allocated to the two companies. While the MR was running the MDR's services, this did not matter, but from July 1871 a scheme of apportionment was required. This eventually required an expert

determination by Sir John Fowler as referred to in the 1873 Act. By then, it was clear what land was surplus, and a series of sales took place from 1875. The credits from these sales were recorded separately from those resulting from sales of surplus land on other parts of the MDR's lines, and later from joint lines.

The Revenue Account for the period was as follows:

TABLE 4
METROPOLITAN DISTRICT RAILWAY REVENUE ACCOUNT 1872-80 PART 1

	1872 Year £	1873 Year £	1874 Year £	1875 Year £	1876 Year £	1877 Year £	1878 Year £	1879 Year £	1880 Year £
Receipts									
Passenger Receipts	189,100	206,088	223,413	263,367	275,512	290,170	306,064	324,986	354,713
Merchandise & Minerals							234	688	828
Rents	9,247	9,039	9,381	9,152	7,522	5,975	6,068	6,418	7,053
Hire of Rolling Stock	940								
Transfer Fees	286	203	171	402	369	359	336	339	313
Mileage & Demurrage	89	4	6						
Sub Total	**199,662**	**215,334**	**232,971**	**272,921**	**283,403**	**296,504**	**312,702**	**332,431**	**362,907**
Expenditure									
Maintenance of Way, Works & Stations	9,933	10,066	9,434	12,361	13,506	16,921	18,397	15,831	15,224
Locomotive Power	27,636	30,155	28,735	32,325	38,318	26,152	37,397	37,669	44,064
Carriage & Wagon Repairs	3,847	3,987	3,920	4,939	5,301	6,800	8,146	7,642	10,126
Traffic Expenses	25,282	28,457	31,794	35,812	34,266	36,686	37,627	40,877	49,569
General Charges	9,399	9,818	11,292	12,662	12,337	13,462	13,908	14,651	15,899
Law & Parliamentary Expenses	845	3,351	598	223	406	238	403	743	483
Compensation	4,535	5,505	1,664	1,628	10,496	1,511	1,088	756	1,965
Rates & Taxes and Government Duty	8,907	11,662	11,230	17,217	14,640	14,830	17,114	16,298	18,027
Joint Line Expenses	3,313	7,795	5,168	4,247	4,064	3,993	4,224	5,082	5,806
Haulage by Other Companies	5,849	6,987	7,062	8,146					
Sub Total	**99,546**	**117,783**	**110,897**	**129,560**	**133,334**	**120,593**	**138,304**	**139,549**	**161,163**
Revenue Balance	**100,116**	**97,551**	**122,074**	**143,361**	**150,071**	**175,911**	**174,398**	**192,882**	**201,744**

TABLE 4

METROPOLITAN DISTRICT RAILWAY REVENUE ACCOUNT 1872-80 PART 2

	1872 Year	**1873 Year**	**1874 Year**	**1875 Year**	**1876 Year**	**1877 Year**	**1878 Year**	**1879 Year**	**1880 Year**
Passengers Carried	No	No	No	No	No	No	No	No	No
1st Class	2,253,508	2,237,158	2,315,291	2,806,746	3,062,417	3,167,740	3,235,164	3,331,683	3,342,480
2nd Class	3,279,051	3,227,658	3,332,401	4,398,240	4,873,113	5,307,933	5,507,070	5,716,205	6,085,919
3rd Class	14,565,752	14,094,502	15,125,992	18,651,165	19,479,653	19,975,934	20,668,264	21,624,727	23,467,075
Season	794,664	1,078,922	1,295,786	1,464,603	1,531,292	1,807,312	2,032,099	2,165,628	2,246,019
Total	**20,892,975**	**20,638,240**	**22,069,470**	**27,320,754**	**28,946,475**	**30,258,919**	**31,442,597**	**32,838,243**	**35,141,493**
Revenue	£	£	£	£	£	£	£	£	£
1st Class	35,975	38,896	41,618	48,224	51,933	54,461	56,774	59,256	61,353
2nd Class	35,371	37,951	40,040	49,854	54,923	59,987	63,135	67,100	74,530
3rd Class	110,046	117,559	128,576	147,239	153,490	157,373	165,196	175,487	192,958
Season	7,708	11,682	13,179	15,036	15,166	18,349	20,960	23,143	25,872
Total	**189,100**	**206,088**	**223,413**	**260,353**	**275,512**	**290,170**	**306,065**	**324,986**	**354,713**

As the MDR took over the running of its services from the MR in 1871 and began to open up western extensions to its network over the period 1872-80, it was expected that the number of passengers carried and the passenger revenue generated would increase. It would be misleading to compare the figures for 1871 with those for 1880, because the MDR took over running its services in July of that year thus the figures for the two years are not comparable. Comparing 1880 with 1872 shows a more accurate picture. The number of passengers carried increased from 20.893m in 1872 to 35.141m in 1880, an increase of 68 per cent, while passenger revenue increased from £189k in 1871 to £355k in 1880, an increase of 88 per cent.

Other types of receipts were of less significance. The MDR did not possess the infrastructure to run a comprehensive freight service, but modest amounts of merchandise and minerals could be carried in the luggage compartments of its passenger trains and this produced less than £1k of revenue in 1880. Rents from advertising hoardings on its premises and buildings not required for railway purposes produced receipts of between £6k and £9k per annum during the period. Small amounts were raised from transfer fees relating to share transactions each year. In the early years of the period some receipts were obtained from hiring out rolling stock and mileage and demurrage charges related to it. Overall receipts increased from £200k in 1872 to £363k in 1880, an increase of 82 per cent.

Total expenditure rose from £100k in 1872 to £161k in 1880, an increase of 61 per cent. The operating ratio (total expenditure as a percentage of total receipts) was 50 per cent in 1872 and 44 per cent in 1880. Percentages in the order of 50 per cent were what railway companies of the period aimed to achieve. Of the items making up total expenditure, provision of locomotive power and the traffic expenses of running the railway such as stations and signal boxes were the most significant. Locomotive power made up 28 per cent of the total in 1872 and 27 per cent in 1880. Traffic expenses made up 25 per cent in 1872 and 31 per cent in 1880. In the early years of the period 1872-75, there were charges for haulage by other companies, as the MDR developed its locomotive fleet. Joint line expenses were a regular annual charge, albeit relatively small, relating to sites such as Gloucester Road and South Kensington where the MDR and the MR had stations adjacent to each other.

The Net Revenue and Appropriation Accounts for the period were as follows:

TABLE 5
METROPOLITAN DISTRICT RAILWAY NET REVENUE ACCOUNT & APPROPRIATION ACCOUNT 1872-80 PART 1

	1872 Year £	1873 Year £	1874 Year £	1875 Year £	1876 Year £	1877 Year £	1878 Year £	1879 Year £	1880 Year £
Receipts									
Balance on Revenue Account	101,133	98,125	122,279	143,623	151,454	166,266	176,515	194,540	203,272
Bank & General Interest	911	674	521	1,130	1,617	2,123	2,572	3,157	3,194
Transfer from Balance Sheet		9,177							
Rent on Surplus Properties					1,202	584	695	1,053	1,392
From Ealing Extension Reserve Fund								3,375	16,000
Sub Total	**102,044**	**107,976**	**122,800**	**144,753**	**154,273**	**168,973**	**179,782**	**202,125**	**223,858**
Expenditure									
Interest on Loans	5,899	6,642	17,753	17,308	16,073	13,168	13,129	13,124	9,671
Interest on Debenture Stock	67,258	68,683	71,515	71,512	71,512	71,512	72,594	72,672	77,161
Interest on Temporary Loans	5,641	5,346	2,444						
Interest on Lloyds Bonds	6,942	6,626	470						
General Interest	219	344	231	370	450				
Interest on Deferred Purchase of Rolling Stock	6,715	4,958	2,604	2,048	1,452	813	153		
Interest on Land Purchases	8,049	7,087	1,230	300					
Rent for Right of Subway	260	260	260	260	260	260	260	260	278
Guaranteed Dividend on Hammersmith Rent Stock			3,436	11,000	11,000	11,000	11,000	11,000	11,000
Guaranteed Dividend on Ealing Rent Stock								5,625	11,250
Guaranteed Dividend on Fulham Rent Stock									13,500
Sub Total	**100,983**	**99,946**	**99,943**	**102,798**	**100,747**	**96,753**	**97,136**	**102,681**	**122,860**
Balance Available for Dividends	**1,061**	**8,030**	**22,857**	**41,955**	**53,526**	**72,220**	**82,646**	**99,444**	**100,998**

TABLE 5
METROPOLITAN DISTRICT RAILWAY NET REVENUE ACCOUNT & APPROPRIATION ACCOUNT 1872-80 PART 2

	1872 Year £	1873 Year £	1874 Year £	1875 Year £	1876 Year £	1877 Year £	1878 Year £	1879 Year £	1880 Year £
Revenue									
Balance Available for Dividends	1,061	8,030	22,857	41,955	53,526	72,220	82,646	99,444	100,998
Expenditure									
5% Preference Stock		7,500	22,500	41,250	52,500	71,250	75,000	75,000	75,000
Ordinary Shares							5,532	22,129	25,313
Sub Total		**7,500**	**22,500**	**41,250**	**52,500**	**71,250**	**80,532**	**97,129**	**100,313**
C/Fwd	**1,061**	**530**	**357**	**705**	**1,026**	**970**	**2,114**	**2,315**	**685**
Dividend Percentage									
5% Preference Stock		½ %	1½ %	2 ¾ %	3 ½ %	4 ¾ %	5 %	5 %	5 %
Ordinary Shares							¼ %	1 %	1⅛ %

The balance on the Revenue Account, including any balance from the previous year's Appropriation Account, was the main receipt in the Net Revenue Account. Other regular receipts were bank and other interest and from 1876 rents on surplus properties. In 1873, there was a transfer of £9k from the balance sheet relating to the revenue surplus in the years 1868-71. In the years 1879-80, there was a transfer of £19k from the unused balance of the reserve fund of the company that built the Ealing Extension.

The expenditure charged to the Net Revenue Account was primarily made up of the fixed charges related to the construction of the original line to Mansion House and the various extensions. Interest on loans and debenture stock rose from £73k in 1872 to £87k in 1880. The guaranteed dividend on the Hammersmith Rent Stock began to be paid in 1874 and was £11k per annum from 1875. Similarly, the full year charges for the Ealing Rent Stock of £11k per annum and the Fulham Rent Stock of £14k per annum both started from 1880. In the early years of the period, more use was made of short-term financing in the form of temporary loans, Lloyds bonds, a form of hire purchase for the initial acquisition of rolling stock, and interest on phased land purchases. There was also a small annual charge for the use of a subway connecting with the main line station at Victoria.

The growth of receipts began to outpace the growth of expenditure over the period, leaving a surplus of £1k in 1872 rising to £101k in 1880. The 5 per cent preference shares ranked first for dividends and required a payment of £75k per annum and it was only from 1878 that there were sufficient funds to make a full payment. It was fortunate for the MDR that these shares were not cumulative and arrears from earlier years did not have to be made good. It was also not until 1878 that any payment on the ordinary shares was made. However, the rate, which reached 1⅛ per cent in 1880, was well below what investors expected from the leading railway companies; 5 per cent or more was not exceptional. The Net Revenue and Appropriation Accounts for the period illustrate the dilemma facing the MDR. Its ordinary shares were paying very low dividends and future issues would not be attractive to investors. Loans, debenture stock and the various rent stocks were already requiring relatively high interest payments and the MDR was not yet producing enough surplus revenue to take on further commitments.

4. Opening of the Extension to Hounslow, and the City Lines and Extensions 1881-84

The period 1881-84 was a further period of expansion of the MDR network. Building the earlier extension to Mill Hill Park (later to become Acton Town), the MDR was able to reach Hounslow. This line with twin termini at Hounslow Town and Hounslow Barracks (now Hounslow West) was built by a separate company, the Hounslow and Metropolitan Railway (HMR), and on completion the MDR was contracted to work the line. This added 6 miles of worked line to the MDR's network, its first worked line. Meanwhile pressure grew on the MDR and MR from both the City of London and Parliament to complete the Inner Circle. In particular, the Board of Works put

forward a proposal to combine completion of the line with construction of a new street. City interests with the Board's support prepared a bill for what they called the Link Line, elements of which were approved in an Act of 1874. Neither the MDR nor the MR were satisfied with the Link Line proposals and did very little to facilitate them, the MR being particularly obstructive. The MDR did not have the financial strength to proceed unless it was in the form of a joint line. The Link Line management were unable to raise the capital required without the two railway companies' support and the project had still not started by late 1877.

The impasse was finally broken in December 1877, when Charles Lucas of the contracting firm of Lucas & Aird arranged a meeting with Forbes and Watkin and managed to persuade them to proceed by means of a joint committee replacing the Link Line proposals. It took until August 1879 to agree an amended route and obtain the City Lines and Extensions Act. In addition to the completion of the Inner Circle, it included an eastern extension to provide a link with the East London Railway (ELR) and a spur to enable the MDR to have a terminus at Whitechapel. Contributions from the Board of Works and the City Commissioners of Sewers were obtained at a higher level than the Link Line were able to get.

The following lines were opened in the period 1881-84:

Aldgate to Tower Hill (MR) September 1882
Connection with the GWR at Ealing Broadway March 1883
Mill Hill Park to Hounslow Town March 1883
Osterley Lampton Junction to Hounslow Barracks July 1883
St Mary's via Whitechapel curve to the ELR March 1884*
Mansion House to Tower Hill October 1884
Minories Junction to St Mary's Junction October 1884
Whitechapel Spur October 1884

*Although completed at this date, it was only connected up and used by the MDR, when the Minories Junction to St Mary's Junction line was opened in October.

The City Lines & Extensions Railway (CLER) added about 1½ miles jointly owned track miles. It also made it possible for the MDR to work trains over the ELR from St Mary's Junction to New Cross, a distance of nearly 3½ miles, under a leasing agreement. The connection with the GWR at Ealing Broadway enabled the MDR to run trains over the GWR's network to Windsor, a distance of about 13 miles. The MDR exercised these powers between 1883 and 1885, but the service was not heavily used and withdrawn thereafter.

At the end of 1884, the MDR's network was thus:

	Miles	Chains
Owned	13	1
Jointly Owned	1	52
Jointly Leased	3	44
Worked	6	00
Worked Over	27	1
Total	**51**	**8**

The increases in capital authorised and created and the amount received into the capital account over the period were as follows:

	31 December 1880	31 December 1884	Increase
	£m	£m	£m
Capital Authorised & Created			
Shares	3.994	5.794	1.800
Loans	1.850	2.375	0.525
Total	**5.844**	**8.169**	**2.325**
Amount Received into Capital Account			
Shares	3.994	5.794	1.800
Loans	1.553	1.942	0.389
Total	**5.547**	**7.736**	**2.189**

The shares created during the period were:

	£k
Ealing Extension Stock	250
Fulham Extension Stock	300
CLER 4% Stock	1,250

The debentures created during the period were:

	£k
CLER	400
4% Debenture Stock for Refinancing of Existing 6% Stock	100
Special Stock Redeemable in 20 Years In Respect of Arrears of Government Passenger Duty	25

All the shares created were paid up by the end of the period, but not all of the debentures had been issued by the end of the period.

In addition to the above, powers had been obtained by an Act of 1882 to develop a Kingston & London Railway with shares of £365k and £122k of loans. These powers were never exercised and in 1886 the MDR were relieved of their obligations under that Act in lieu of the LSWR's scheme for a Putney to Wimbledon line with MDR running powers.

An analysis of capital expenditure during the period was as follows:

TABLE 6
METROPOLITAN DISTRICT RAILWAY CAPITAL EXPENDITURE 1881-84

	1881	1882	1883	1884	Total
	£	£	£	£	£
Lines in the Course of Construction					
Advances to CLER		478,500	463,500	254,000	1,196,000
Whitechapel Station			40,120	142,176	182,296
West Brompton Junction Railway			20,849	852	21,701
Mansion House Enlargement				61,063	61,063
Advance to Metropolitan Railway for Trinity Square to Aldgate Line				250,000	250,000
Advances from Board of Works & Commissioner for Sewers			(50,000)	(350,000)	(400,000)
Discounts/(Premiums) on CLER Stock			4,345	(2,628)	1,717
Law & Parliamentary		8,167	1,435		9,602
Total		**486,667**	**480,249**	**355,463**	**1,322,379**
Lines Open for Traffic					
Land Purchase	94	(42)	9,179	638	9,869
Construction of Way & Stations	11,339	3,855	17,587	23,322	56,103
Law & Parliamentary	10,296	5,553	10,190	5,048	31,087
Ealing Extension Transferred		275,606			275,606
Putney Bridge Extension Transferred		350,019			350,019
Total	**21,729**	**634,991**	**36,956**	**29,008**	**722,684**
Working Stock	38,819	6,813	34,916	38,948	119,496
Premium on Debenture Stock	(4,000)				(4,000)
Realisation of Land 1873 Act		(29,021)	(5,525)	257	(34,289)
Total	**56,548**	**1,099,450**	**546,596**	**423,676**	**2,126,270**

As expected, the bulk of the £1.322m expenditure on lines under construction during the period related to the work on the CLER amounting to £1.196m, which was spent by the Joint Committee. The MR had already built a short length of line from its terminus at Aldgate to a station at Trinity Square, Tower Hill, under historical powers that it had and that line was adopted into the joint line route. The MDR had to reimburse the MR the sum of £250k for its share of the cost. Fortunately, there was a contribution by the City Board of Works and the Commissioner for Sewers, of which the MDR's share was £400k. This related to widening of existing streets along the route of the joint line and the construction of a new street now known as Byward Street. The building of the joint line also resulted in expenditure on the MDR's own account at both ends of the line, comprising enlargement of the existing Mansion House station at the western end of £61k and a spur for a terminus at Whitechapel at the eastern end of £182k. Finally, there was some initial expenditure of £22k on a link with the WLR near West Brompton station.

The amount spent on the lines already opened during the period amounted to £723k. A major part of this was the transfer of the cost of the Ealing and Putney Bridge Extensions, which opened in the previous period, from the companies which originally built them. The respective amounts were £276k and £350k. The other works covered development at Lillie Bridge depot and Fulham gas works, and alterations at Hammersmith and Mill Hill Park stations, CLER adjustments and the South Kensington subway under what is now Exhibition Road.

The increased network required additional spending on rolling stock of £119k during the period. At the end of 1884, the fleet consisted of 48 locomotives, 80 1st class coaches,109 2nd class, 161 3rd class and 27 service vehicles. The total stock had increased by 188 from 237 at the end of 1880 to 425.

The Revenue Account for the period was as follows:

TABLE 7

METROPOLITAN DISTRICT RAILWAY REVENUE ACCOUNT 1881-84 PART 1

	1881 Year £	1882 Year £	1883 Year £	1884 Year £
Receipts				
Passenger Receipts	364,678	358,567	392,345	408,666
Merchandise & Minerals	1,137	1,431	1,734	2,026
Rents	6,975	6,644	6,979	7,054
Transfer Fees	236	242	247	232
Sub Total	**373,026**	**366,884**	**401,305**	**417,978**
Expenditure				
Maintenance of Way, Works & Stations	16,394	17,357	19,607	17,388
Locomotive Power	44,776	44,438	45,039	51,876
Carriage & Wagon Repairs	10,364	10,607	11,312	12,055
Traffic Expenses	47,226	46,169	49,651	55,849
General Charges	16,355	17,095	18,061	20,237
Law & Parliamentary Expenses	359	565	842	1,186
Compensation	236	444	374	175
Rates & Taxes and Government Duty	26,412	27,671	21,019	18,501
Joint Line Expenses	8,418	5,727	5,773	6,569
Sub Total	**170,540**	**170,073**	**171,678**	**183,836**
Revenue Balance	**202,486**	**196,811**	**229,627**	**234,142**

TABLE 8
METROPOLITAN DISTRICT RAILWAY REVENUE ACCOUNT 1881-84
PART 2

	1881 Year	**1882 Year**	**1883 Year**	**1884 Year**
Passengers Carried	No	No	No	No
1st Class	3,419,357	3,275,112	3,422,736	3,339,738
2nd Class	6,394,262	6,336,863	6,976,908	7,242,337
3rd Class	23,086,657	21,923,522	25,988,898	27,939,177
Season	2,421,298	2,562,095	2,747,547	2,863,549
Total	**35,321,574**	**34,097,592**	**39,136,089**	**41,384,801**
Revenue	£	£	£	£
1st Class	62,702	61,030	63,178	61,496
2nd Class	78,506	78,086	84,084	86,482
3rd Class	195,329	189,566	213,631	228,414
Season	28,141	29,886	31,452	32,274
Total	**364,678**	**358,568**	**392,345**	**408,666**

Passenger numbers in 1884 were 41.385m compared with 35.141m in 1880, an increase of 18 per cent. Passenger revenue increased from £355k in 1880 to £409k in 1884, an increase of 15 per cent. Despite the increase in passengers, the revenue generated per passenger carried had fallen in the four years. Taking into account the other forms of revenue described above, overall receipts increased from £363k in 1880 to £418k in 1884, an increase of 15 per cent.

Total expenditure rose from £161k in 1880 to £184k in 1884, an increase of 14 per cent. The operating ratio in 1884 was 44 per cent similar to 1880. Locomotive power and traffic expenses continued to be the largest items of expenditure, making up 28 per cent and 30 per cent of the total respectively compared to 27 per cent and 31 per cent in 1880. There were no changes in the types of expenses, as full operation by the MDR had settled down.

The Net Revenue and Appropriation Accounts for the period were as follows:

TABLE 8
METROPOLITAN DISTRICT RAILWAY NET REVENUE ACCOUNT & APPROPRIATION ACCOUNT 1881-84 PART 1

	1881 Year £	1882 Year £	1883 Year £	1884 Year £
Receipts				
Balance on Revenue Account	202,999	196,997	229,925	237,042
Bank & General Interest	1,600	3,168		1,699
Rent on Surplus Properties	2,482	2,806	4,135	4,135
Proposed Transfer from Reserve Fund	7,000	4,350		
Sub Total	**214,081**	**207,321**	**234,060**	**242,884**
Expenditure				
Interest on Loans	7,157	6,724	2,897	3,225
Interest on Debenture Stock	81,442	85,292	90,000	95,170
General Interest			3,798	1,663
Rent for Right of Subway	285	285	286	286
Guaranteed Dividend on Hammersmith Rent Stock	11,000	11,000	11,000	11,000
Guaranteed Dividend on Ealing Rent Stock	11,250	11,250	11,250	11,250
Guaranteed Dividend on Fulham Rent Stock	13,500	13,500	13,500	13,500
Arrears of Government Duty			455	1,250
East London Line & Other Rents				4,375
Sub Total	**124,634**	**128,051**	**133,186**	**141,719**
Balance Available for Dividends	**89,447**	**79,270**	**100,874**	**101,165**

TABLE 8
METROPOLITAN DISTRICT RAILWAY NET REVENUE ACCOUNT & APPROPRIATION ACCOUNT 1881-84 PART 2

	1881	1882	1883	1884
	Year	Year	Year	Year
	£	£	£	£
Revenue				
Balance Available for Dividends	89,447	79,270	100,874	101,165
Expenditure				
5% Preference Stock	75,000	75,000	63,750	67,500
CLER 4% Guaranteed Stock			36,334	30,800
Ordinary Shares	14,062	4,219		
Sub Total	**89,062**	**79,219**	**100,084**	**98,300**
C/Fwd	**385**	**51**	**790**	**2,865**
Dividend Percentage				
5% Preference Stock	5%	5%	4¼%	4½%
CLER 4% Guaranteed Stock			4%	4%
Ordinary Shares	1¼%	⅜%		

The receipts into the Net Revenue Account for 1881-82 were boosted by transfers from the Reserve Fund of £7k and £4k respectively. This enabled a small dividend to be paid on the ordinary shares in those two years in addition to the full 5 per cent on the preference stock. The percentage return on the ordinary shares in the two years of 1¼ per cent and ⅜ per cent respectively was a fairly meagre return.

The total expenditure in the Net Revenue Account rose significantly from £123k in 1880 to £142k in 1884, an increase of 15 per cent. This was mainly due to increased interest payments on debentures which rose from £77k in 1880 to £95k in 1884. There were also smaller charges in respect of arrears of government duty and costs relating to the ELR connection.

Expenditure in the Appropriation Account, in addition to dividends on the preference stock and the ordinary shares, included interest on the CLER 4 per cent guaranteed stock of £36k in 1883, including some interest before the line opened, and £31k in 1884. In 1883-84, there was an insufficient balance to pay a full dividend on the preference shares, with 4¼ per cent and 4½ per cent paid in those two years. Nothing could be paid on the ordinary shares. As can be seen, the completion of the CLER put even more financial pressure on the MDR over and above the already unsatisfactory results in 1880.

5. Opening of the Extension to Wimbledon and the First South Harrow Powers 1885-94

The completion of the CLER left the MDR financially weakened and in 1883 and 1884 it had been unable to pay a dividend on its ordinary shares and only pay its preference share holders a dividend of less than the 5 per cent due. In 1884, its fixed interest commitments on its loans, debentures, and rent and guaranteed stock had reached the following:

	£k
Interest on Loans and Debenture Stock	98
CLER 4 per cent Guaranteed Stock	31
Guaranteed Dividends on the Hammersmith, Ealing and Fulham Rent Stocks	36
ELR & Other Operating Rentals	4
Other Items	1
Total	**170**

The company was thus in a position where financing of any further extension of its network would be extremely difficult.

Following the failure of the original Guildford, Kingston & London Railway proposal in the period up to 1884, the MDR had been involved in two railway schemes, which might have led to a south westerly extension of services from its Putney Bridge terminus. These were the Kingston & London Railway (KLR) and the Wimbledon & West Metropolitan Railway. Because of the LSWR dominance in that area, it was perhaps inevitable that any scheme would need their full involvement. By an Act of 1886, a rationalisation of the two schemes

was brought about by which the LSWR would build a line from East Putney to Wimbledon, with running powers granted to the MDR. The LSWR completed the line in June 1889, including Putney Railway Bridge, which connected with the MDR's station on the north bank. The MDR began to exercise its powers and run services to Wimbledon from the opening date.

In the 1870s and 1880s, the MDR had viewed the area in the segment between the GWR and LNWR main lines out of London as a possible area for expansion, particularly to Harrow, Uxbridge and beyond. Although the other companies put forward schemes in that area, none achieved parliamentary approval. However, in 1894 an Act was passed for the construction of the Ealing & South Harrow Railway (ESHR). This was put forward by independent interests, but it was assumed that the MDR would be asked to operate the line. At that point in time, the MDR was not in financial position to take on the construction of line, although this did start in the next period.

The MDR had obtained powers for a ¾ mile spur linking Mill Hill Park station with the North & South West Junction Railway at South Action station as early as 1878. The main intention was to facilitate freight trains from other companies to connect with the MDR network and either establish their own depots or transit to other lines. The MDR's financial difficulties led to these powers being extended several times and, by the end of 1894, there had only been some initial expenditure.

The MDR had also obtained powers by an Act of 1881 to make a connection with the WLR in the vicinity of West Brompton station. These powers were extended several times until an Act of 1893 authorised the abandonment of the scheme. There was a small amount of preparatory expenditure in this period.

The opening of the Putney Bridge to Wimbledon line in 1889 added 4 miles to the lines over which the MDR could work trains. At the end of 1894, the MDR's network comprised the following route mileage:

	Miles	Chains
Owned	13	1
Jointly Owned	1	53
Jointly Leased	3	14
Worked	5	55
Worked Over	15	24
Total	**38**	**67**

Since 1884 the track mileage worked had reduced slightly, as the Hounslow Town terminus had been closed, and that worked over had reduced, as trains no longer ran through from Ealing Broadway to Windsor.

The increases in capital authorised and created and the amount received into the capital account over the period were as follows:

	31 December 1884	31 December 1894	Increase
	£m	£m	£m
Capital Authorised & Created			
Shares	5.794	5.794	-
Loans	2.375	2.375	-
Total	**8.169**	**8.169**	-
Amount Received into Capital Account			
Shares	5.794	5.794	-
Loans	1.942	2.043	0.101
Total	**7.736**	**7.837**	0.101

No shares were created during the period and there was a small increase in loans issued under existing powers.

An analysis of capital expenditure during the period was as follows:

TABLE 9
METROPOLITAN DISTRICT RAILWAY CAPITAL EXPENDITURE 1885-94

	1885 £	**1886** £	**1887** £	**1888** £	**1889** £	**1890** £	**1891** £	**1892** £	**1893** £	**1894** £	**Total** £
Lines in the Course of Construction											
South Acton Spur	21,039		652		242		70		137		22,140
West Brompton Connection	374		479		213		154				1,220
Total	**21,413**		**1,131**		**455**		**224**		**137**		**23,360**
Lines Open for Traffic											
Land Purchase	10,327	(2,021)	(5,734)	2,681	795	206	(427)	5,508	(2,349)	349	9,335
Construction of Way & Stations	41,969	5,144	5,493	486	1,072	378	2,722	3,340	36,660	1,077	98,341
Law & Parliamentary	2,371	158	1,073	173	200	179	856	1,755	1,164	654	8,583
CLER	83,333	33,770	13,300	12,000	2,467	6,000	3,497	564	1,500	350	156,781
KLR					73,277	304					73,581
Putney Bridge Connection					635						635
Total	**138,000**	**37,051**	**14,132**	**15,340**	**78,446**	**7,067**	**6,648**	**11,167**	**36,975**	**2,430**	**347,256**
Working Stock	1,414	13,932	56		70	1,513	9,892	653		267	27,797
Sale of Surplus Land			(915)						(4,246)		(5,161)
Realisation of Land 1873 Act	(1,004)	(215)									(1,219)
CLER Sale of Surplus Land	(300,000)	(25,000)									(325,000)
Total	**(140,177)**	**25,768**	**14,404**	**15,340**	**78,971**	**8,580**	**16,764**	**11,820**	**32,866**	**2,697**	**67,033**

As mentioned above, there was £23k expenditure on preparatory works for the South Acton Spur and the West Brompton Connection.

Annual expenditure on the lines open for traffic was higher than in the previous period. There were two main reasons for this. Firstly, there was £142k advanced to the CLER Joint Committee in the period 1885-88, which is likely to have included construction work completed after the lines had opened. Thereafter, expenditure dropped to a much lower annual level. Secondly, there was £74k expenditure on the proposed KLR, which was abandoned when the MDR was granted running powers over the LSWR's new line from Putney Bridge to Wimbledon.

Additional spending on working stock of £28k during the period was much lower than in the previous period. At the end of 1894, the fleet consisted of 54 locomotives, 81 1st class coaches, 124 2nd class, 163 3rd class and 35 service vehicles. The total stock had increased by 32 from 425 at the end of 1884 to 457.

There was a large receipt of £325k from the sales of surplus land following the opening of the CLER. Small amounts were also received from the MDR sales under the 1873 Act and sales of its other land.

The Revenue Account for the period was as follows:

TABLE 10
METROPOLITAN DISTRICT RAILWAY REVENUE ACCOUNT 1885-94 PART 1

	1885 Year £	1886 Year £	1887 Year £	1888 Year £	1889 Year £	1890 Year £	1891 Year £	1892 Year £	1893 Year £	1894 Year £
Receipts										
Passenger Receipts	406,666	420,654	375,487	369,227	361,539	378,701	403,585	407,453	390,843	407,344
Parcels							526	1,332	1,451	2,446
Merchandise & Minerals	2,129	2,332	2,523	2,513	2,660	2,847	3,230	3,030	2,505	3,605
Rents	7,143	7,208	7,405	9,232	9,626	12,673	12,819	13,554	14,674	13,157
Transfer Fees	297	271	229	240	244	222	203	241	213	228
Sub Total	**416,235**	**430,465**	**385,644**	**381,212**	**374,069**	**394,443**	**420,363**	**425,610**	**409,686**	**426,780**
Expenditure										
Maintenance of Way, Works & Stations	16,856	17,339	17,418	18,426	18,448	18,871	19,055	19,314	21,241	20,001
Locomotive Power	56,299	53,692	47,578	47,161	48,709	51,544	51,616	49,625	47,183	49,891
Carriage & Wagon Repairs	12,342	12,894	12,473	13,167	13,522	13,042	14,038	14,945	14,915	16,458
Traffic Expenses	61,033	57,038	57,086	52,054	49,346	51,172	51,779	52,474	53,001	53,703
General Charges	19,522	19,727	21,196	20,531	19,676	19,614	20,259	21,242	20,834	20,952
Law & Parliamentary Expenses	2,141	4,746	5,015	2,838	2,540	2,242	1,309	1,139	1,136	993
Compensation	3,034	4,497	1,779	12	30	569	863	344	187	51
Rates & Taxes and Government Duty	19,001	21,141	22,435	23,087	24,130	25,435	26,922	26,485	26,952	28,176
Joint Line Expenses	6,359	6,868	6,816	7,373	7,448	6,686	7,144	7,289	7,869	7,840
Sub Total	**196,587**	**197,942**	**191,796**	**184,649**	**183,849**	**189,175**	**192,985**	**192,857**	**193,318**	**198,065**
Revenue Balance	**219,648**	**232,523**	**193,848**	**196,563**	**190,220**	**205,268**	**227,378**	**232,753**	**216,368**	**228,715**

TABLE 10

METROPOLITAN DISTRICT RAILWAY REVENUE ACCOUNT 1885-94 PART 2

	1885 Year	1886 Year	1887 Year	1888 Year	1889 Year	1890 Year	1891 Year	1892 Year	1893 Year	1894 Year
Passengers Carried	No	No	No	No	No	No	No	No	No	No
1st Class	3,265,098	3,301,346	3,074,466	3,025,981	2,827,798	2,970,158	3,044,054	2,989,407	2,704,376	2,681,285
2nd Class	7,263,367	7,304,235	6,605,300	6,660,529	6,197,109	6,381,180	6,751,134	6,529,256	6,068,366	6,050,753
3rd Class	28,075,290	30,083,672	26,336,194	25,587,144	25,098,282	26,401,426	28,677,873	29,212,711	28,976,984	31,439,998
Season	2,886,628	2,989,631	2,949,348	3,065,109	3,318,539	3,524,491	3,802,386	4,017,864	4,159,630	4,248,612
Total	**41,490,383**	**43,678,884**	**38,965,308**	**38,338,763**	**37,441,728**	**39,277,255**	**42,275,447**	**42,749,238**	**41,909,356**	**44,420,648**
Revenue	£	£	£	£	£	£	£	£	£	£
1st Class	59,149	60,980	54,980	53,734	50,901	53,107	54,119	53,587	48,305	48,597
2nd Class	85,308	86,409	77,330	77,927	74,196	76,458	80,148	78,662	72,810	73,759
3rd Class	230,537	240,354	211,102	204,593	201,155	212,089	229,169	233,911	227,688	242,813
Season	31,672	32,911	32,075	32,973	35,287	36,904	39,470	41,292	42,040	42,175
Total	**406,666**	**420,654**	**375,487**	**369,227**	**361,539**	**378,558**	**402,906**	**407,452**	**390,843**	**407,344**

Passenger numbers in 1894 were 44.421m compared with 41.385m in 1884, an increase of 7 per cent. This was a disappointing result especially as the numbers were lower than in 1884 for the years 1887-90. Economic conditions were partly to blame as there was an agricultural depression combined with the UK's competitors in the industrial sector beginning to overhaul the UK. However, the CLER, the Hounslow Branch and the running powers to Windsor over the GWR tracks all failed to produce significant increases in traffic. Passenger revenue fell slightly from £409k in 1884 to £407k in 1894, despite the increase in passenger numbers. Taking into account all forms of revenue, overall receipts increased from £418k in 1884 to £427k in 1894, an increase of 2 per cent.

Total expenditure rose from £184k in 1884 to £198k in 1894, an increase of 8 per cent. The operating ratio was 46 per cent, slightly higher than 1884's 44 per cent. Locomotive power and traffic expenses remained the largest items of expenditure, making up 25 per cent and 27 per cent of the total respectively in 1894 compared to 28 per cent and 30 per cent in 1884.

The Net Revenue and Appropriation Accounts for the period were as follows:

TABLE 11
METROPOLITAN DISTRICT RAILWAY NET REVENUE ACCOUNT & APPROPRIATION ACCOUNT 1885-94 PART 1

	1885 Year £	1886 Year £	1887 Year £	1888 Year £	1889 Year £	1890 Year £	1891 Year £	1892 Year £	1893 Year £	1894 Year £
Receipts										
Balance on Revenue Account	220,307	234,332	210,617	204,158	202,008	221,583	242,177	237,338	217,210	230,476
Bank & General Interest	2,120	1,012		206	795	2,212	1,368	775	1,795	214
Rent on Surplus Properties	4,861	5,860	10,574	9,918	9,145	13,318	6,903	8,612	11,009	6,567
CLER								1,398	1,213	2,459
Sub Total	**227,288**	**241,204**	**221,191**	**214,282**	**211,948**	**237,113**	**250,448**	**248,123**	**231,227**	**239,716**
Expenditure										
Interest on Loans	5,428	6,606	6,585	5,548	4,931	4,673	4,218	4,055	3,889	3,595
Interest on Debenture Stock	99,992	100,712	100,976	101,513	101,779	101,780	101,780	101,780	101,780	101,780
General Interest		2,005	3,554	1,014						
Rent for Right of Subway	286	287	287	289	286	286	285	285	285	285
Guaranteed Dividend on Hammersmith Rent Stock	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Guaranteed Dividend on Ealing Rent Stock	11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250	11,250
Guaranteed Dividend on Fulham Rent Stock	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500
Arrears of Government Duty	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250
East London Line & Other Rents	9,027	7,626	4,078	4,800	6,087	5,877	7,039	7,349	7,342	7,317
CLER							8,208			
Sub Total	**151,733**	**154,236**	**152,480**	**150,164**	**150,083**	**149,616**	**158,530**	**150,469**	**150,296**	**149,977**
Balance Available for Dividends	**75,555**	**86,968**	**68,711**	**64,118**	**61,865**	**87,497**	**91,918**	**97,654**	**80,931**	**89,739**

TABLE 11
METROPOLITAN DISTRICT RAILWAY NET REVENUE ACCOUNT & APPROPRIATION ACCOUNT 1885-94 PART 2

	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894
	Year £	Year £	Year £	Year £	Year £	Year £	Year £	Year £	Year £	Year £
Revenue										
Balance Available for Dividends	**75,555**	**86,968**	**68,711**	**64,118**	**61,865**	**87,497**	**91,918**	**97,654**	**80,931**	**89,739**
Expenditure										
5% Preference Stock	33,750	33,750	11,250	5,625		18,750	37,500	45,000	31,875	39,375
CLER 4% Guaranteed Stock	41,122	43,673	46,683	48,552	48,552	48,552	48,552	48,552	48,552	48,552
Sub Total	**74,872**	**77,423**	**57,933**	**54,177**	**48,552**	**67,302**	**86,052**	**93,552**	**80,427**	**87,927**
C/Fwd	**683**	**9,545**	**10,778**	**9,941**	**13,313**	**20,195**	**5,866**	**4,102**	**504**	**1,812**
Dividend Percentage										
5% Preference Stock	2¼%	2¼%	¾%	⅜%		1¼%	2½%	3%	2⅛%	2⅝%
CLER 4% Guaranteed Stock	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%

The principal change affecting both accounts related to the CLER. As this was a joint line, revenue surpluses and deficits were reported in the Net Revenue Account. These items only started to come through in the period 1891-94 and only had a small impact on the total of net revenue. Of more significance was the charge in respect of the CLER 4 per cent Guaranteed Stock in the Appropriation Account. By 1888 this had peaked at £49k per annum and ranked for payment before the MDR's own 5 per cent preference shares and ordinary shares.

Whereas the 5 per cent preference shares had received a full dividend in the period 1879-82, in the current period much lower amounts were able to be paid. These ranged from zero in 1889 to 3 per cent in 1892. Nothing was thus paid to the ordinary shareholders in any of the years.

The financial difficulty facing the MDR by 1894 was readily apparent. The fixed charges that needed to be met each year by then amounted to:

	£k
Interest on Loans and Debenture Stock	105
CLER 4 per cent Guaranteed Stock	49
Guaranteed Dividends on the Hammersmith, Ealing and Fulham Rent Stocks	36
ELR & Other Operating Rentals	8
Other Items	1
Total	1**99**

It was impossible for the MDR to raise new capital, while its existing issues were paying out such meagre returns. If it were possible to seek new loans, the rate of interest would be higher than on existing issues and lenders would be likely to demand preferential treatment. In the next period, this burden was to slow work on new lines, where powers already existed, and make it impossible to meet an increasing demand from passengers for electrification of the network.

6. Opening of the South Acton Spur, the Start of Work on the South Harrow Extension and the Takeover by the Yerkes Group 1895-1901

The MDR's powers for the South Acton Spur were extended for the final time in 1896. By 1897 its financial situation had improved somewhat, the MDR felt that it was able to fund this link and it was finally opened in May 1899.

By 1897, the MDR also felt able to absorb the E&SHR and take on its construction powers, and an Act was passed to bring this about. Work proceeded very slowly, among other things as a result of bad weather and geological problems, and by the end of 1899 the line was still unfinished. By this time, the MDR's financial problems had returned and there was uncertainty over the electrification of its network. The line was completed just after the Yerkes Group takeover but would not be opened 1903.

As early as 1897 the MDR had obtained powers to electrify all or parts of its network, but arrangements for the CLER had to be agreed with the MR. At the same time a group of active shareholders led by Charles Pond were lobbying for an electrified low-level tube between Earls Court and Mansion House and powers for this were obtained, although the chances of the MDR being able to raise the funds for this to proceed were slim. Shortly afterwards in 1899, the MDR obtained powers to takeover the Brompton & Piccadilly Circus Railway, which had powers for an electrified tube line between these points, with a view to having a tube network linking both the City and the West End.

Also in 1897, the MDR and the London Tilbury & Southend Railway (LTSR) promoted the jointly owned Whitechapel & Bow Railway (WBR). This two-mile line was to link the MDR's Whitechapel terminus with the LTSR at Campbell Road, Bow. This would enable the MDR to extend its network eastwards and the LTSR would be able to relieve some of the congestion at its Fenchurch Street station and penetrate further into London. An Act was passed for this link in August 1897. A further Act was passed in 1900 to establish the operating arrangements for the line. Construction started in 1899 and the MDR started its advances to the joint committee for the costs.

The MDR still had the problem of obtaining the finance for the two tube schemes, let alone electrifying the rest of its lines. In the meantime, a group of US financiers led by Charles Yerkes (the Yerkes Group) had been seeking investment opportunities in the UK and in 1900 took over the Charing Cross, Euston & Hampstead Railway tube scheme. This led the Yerkes Group to look at the prospects for the MDR and its electrification, and effective control of the company was gained in March 1901, thus ending the company's independence.

At the end of 1901, the MDR's network comprised the following route milage:

	Miles	Chains
Owned	13	1
Jointly Owned	1	54
Jointly Leased	3	14
Worked	5	55
Worked Over	15	24
Total	**38**	**68**

The increases in capital authorised and created and the amount received into the capital account over the period were as follows:

	31 December 1894	31 December 1901	Increase
	£m	£m	£m
Capital Authorised & Created			
Shares	5.794	7.057	1.263
Loans	2.375	2.541	0.166
Total	**8.169**	**9.598**	**1.429**
Amount Received into Capital Account			
Shares	5.794	6.373	0.579
Loans	2.043	2.066	0.023
Total	**7.837**	**8.439**	**0.602**

The shares created during the period were:

	£k
Low Level Tube (LLT) Earls Court to Mansion House	500
WBR	513
Ealing & South Harrow (ESHR) 3½% Rent Charge Stock	250

The debenture stock created during the period was all for the LLT.

It should be explained that the capital raised for the LLT was not for the construction of the line itself but for preliminary works including the construction of a power station. The cost of the construction of the line was estimated to cost a further £1.6m. The stock for the WBR was the MDR's 50 per cent of its joint venture with the LTSR. Its agreement with the LTSR provided for this stock to be guaranteed stock in the accounts of both companies with precedence over existing stocks. The ESHR rent charge stock was a similar issue to that used for the MDR's earlier western extensions, by which the MDR took over the line when the separate company had finished construction.

An analysis of capital expenditure during the period was as follows:

TABLE 12
METROPOLITAN DISTRICT RAILWAY CAPITAL EXPENDITURE 1895-1901

	1895 £	**1896** £	**1897** £	**1898** £	**1899** £	**1900** £	**1901** £	**Total** £
Lines in the Course of Construction								
South Acton Spur	151	223	2,274	9,180				11,828
WBR					165,000	130,000	60,000	355,000
ESHR						213,731	19,840	233,571
Total	**151**	**223**	**2,274**	**9,180**	**165,000**	**343,731**	**79,840**	**600,399**
Lines Open for Traffic								
Land Purchase	199			(136)	(128)	5,976		5,911
Construction of Way & Stations	1,235	5,098	4,015	16,864	10,950	4,957	873	43,992
Law & Parliamentary		232	7,552			4,144	2,773	14,701
CLER			1,000	10,233				11,233
Total	**1,434**	**5,330**	**12,567**	**26,961**	**10,822**	**15,077**	**3,646**	**75,837**
Working Stock	300	551				746	18,191	19,788
Total	**1,885**	**6,104**	**14,841**	**36,141**	**175,822**	**359,554**	**101,677**	**696,024**

Within lines under construction a further £12k was spent on the South Acton Spur bringing the total to £34k, including the £22k spent in the previous period. A total of £355k was advanced to the WBR joint committee during the period as construction got under way. A sum of £234k was paid to take over the ESHR as construction was completed.

Expenditure on lines open for traffic continued at the lower level seen at the end of the previous period, with the CLER much lower at £11k. The other expenditure covered a variety of projects of which the largest were £24k for new general offices and a further £7k for the South Acton Spur.

A total of £20k was spent on working stock during the period mainly on new carriages in 1901. At the end of 1901, the fleet consisted of 54 locomotives, 87 1st class coaches, 133 2nd class, 175 3rd class and 43 service vehicles. The total stock had increased by 35 from 457 at the end of 1894 to 492.

The Revenue Account for the period was as follows:

TABLE 13
METROPOLITAN DISTRICT RAILWAY REVENUE ACCOUNT 1895-1901 PART 1

	1895 Year £	1896 Year £	1897 Year £	1898 Year £	1899 Year £	1900 Year £	1901 Year £
Receipts							
Passenger Receipts	406,075	408,429	421,470	408,335	409,772	392,102	356,813
Parcels	1,567	2,424	3,011	3,192	2,935	2,766	2,597
Merchandise & Minerals	3,639	3,718	4,099	3,940	3,999	4,253	4,162
Rents	13,132	15,814	17,860	17,834	17,408	16,862	16,878
Transfer Fees	208	296	274	279	266	159	178
Sub Total	**424,621**	**430,681**	**446,714**	**433,580**	**434,380**	**416,142**	**380,628**
Expenditure							
Maintenance of Way, Works & Stations	21,101	20,694	22,313	21,285	20,384	23,274	25,236
Locomotive Power	48,882	49,500	47,036	52,612	52,605	51,400	53,018
Carriage & Wagon Repairs	15,936	15,271	16,396	16,288	15,870	16,986	17,363
Traffic Expenses	53,673	54,844	57,698	58,262	59,135	60,160	60,760
General Charges	21,338	21,505	21,803	21,719	21,705	21,261	21,522
Law & Parliamentary Expenses	1,014	1,553	2,148	2,298	1,487	1,228	1,056
Compensation	38	17	182	335	246	326	840
Rates & Taxes and Government Duty	29,036	32,191	32,659	31,781	32,533	33,179	36,544
Joint Line Expenses	7,918	8,654	9,463	9,070	9,926	9,603	9,941
Sub Total	**198,936**	**204,229**	**209,698**	**213,650**	**213,891**	**217,417**	**226,280**
Revenue Balance	**225,685**	**226,452**	**237,016**	**219,930**	**220,489**	**198,725**	**154,348**

TABLE 13

METROPOLITAN DISTRICT RAILWAY REVENUE ACCOUNT 1895-1901 PART 2

	1895 Year	**1896 Year**	**1897 Year**	**1898 Year**	**1899 Year**	**1900 Year**	**1901 Year**
Passengers Carried	No	No	No	No	No	No	No
1st Class	2,743,144	2,751,506	2,844,129	2,717,339	2,785,045	2,641,330	2,610,497
2nd Class	6,005,388	5,880,501	5,978,115	5,777,482	5,832,178	5,535,539	5,300,483
3rd Class	31,298,051	31,561,042	32,836,059	31,649,016	31,894,881	31,298,385	30,208,106
Season	4,424,445	4,602,044	4,678,055	4,732,573	4,682,270	4,366,457	4,149,087
Total	**44,471,028**	**44,795,093**	**46,336,358**	**44,876,410**	**45,194,374**	**43,841,711**	**42,268,173**
Revenue	£	£	£	£	£	£	£
1st Class	49,692	49,941	51,456	49,705	50,801	47,809	46,083
2nd Class	72,331	71,384	72,738	71,384	71,911	68,646	63,051
3rd Class	240,517	242,127	251,624	241,267	241,619	234,322	212,174
Season	43,535	44,977	45,652	45,978	45,441	41,325	35,505
Total	**406,075**	**408,429**	**421,470**	**408,334**	**409,772**	**392,102**	**356,813**

Passenger numbers in 1901 were 42.268m compared with 44.421m in 1894, a decrease of 5 per cent. They had reached a peak of 46.336m in 1897 but declined thereafter particularly in 1900-1901. An important factor was the opening of the Central London Railway (CLR) tube from Shepherd's Bush to Bank in July 1900. This electrified line attracted previous passengers from both the MDR and MR. Increasing competition from electric trams was also a factor. As the MDR's board had suspected that it would, the CLER failed to attract new passengers in large numbers. Passenger revenue also fell by 12 per cent from £407k in 1894 to £357k in 1901. The lower level of passengers was producing proportionately less revenue per passenger. Taking into account all forms of revenue, the overall receipts fell from £427k in 1894 to £381k in 1901, a reduction of 12 per cent.

Because of the high proportion of fixed costs overall expenditure rose from £198k in 1894 to £226k in 1901, an increase of 14 per cent. The operating ratio rose accordingly from 46 per cent in 1894 to 59 per cent in 1901. The two largest items of expenditure, locomotive power and traffic expenses, made up 23 per cent and 27 per cent of the total in 1901 compared with 25 per cent and 27 per cent in 1894. The revenue balance fell to £154k from £229k in 1894, a fall of over 32 per cent.

The Net Revenue and Appropriation Accounts for the period were as follows:

TABLE 14
METROPOLITAN DISTRICT RAILWAY NET REVENUE ACCOUNT & APPROPRIATION ACCOUNT 1895-1901 PART 1

	1895 Year £	1896 Year £	1897 Year £	1898 Year £	1899 Year £	1900 Year £	1901 Year £
Receipts							
Balance on Revenue Account	227,300	228,166	241,801	228,673	220,952	199,388	155,020
Bank & General Interest	209	242	228				7,262
Rent on Surplus Properties	11,819	13,363	13,349	13,547	13,817	14,959	14,158
CLER	2,635	1,660	2,085	1,686	1,317	543	
WBR Interest					1,671	5,775	9,901
Sub Total	**241,963**	**243,431**	**257,463**	**243,906**	**237,757**	**220,665**	**186,341**
Expenditure							
Interest on Loans	3,431	3,340	3,330	3,536	3,849	3,821	3,810
Interest on Debenture Stock	101,780	101,780	101,780	101,780	101,780	101,780	101,780
General Interest				613	448	1,241	377
Rent for Right of Subway	286	284	285	284	285	286	286
Guaranteed Dividend on Hammersmith Rent Stock	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Guaranteed Dividend on Ealing Rent Stock	11,250	11,250	11,250	11,250	11,250	11,250	11,250
Guaranteed Dividend on Fulham Rent Stock	13,500	13,500	13,500	13,500	13,500	13,500	13,500
Arrears of Government Duty	1,250	1,250	1,250	1,250	1,250	1,250	1,250
East London Line & Other Rents	7,591	7,997	7,504	7,812	7,595	7,310	8,198
CLER							845
Sub Total	**150,088**	**150,401**	**149,899**	**151,025**	**150,957**	**151,438**	**152,296**
Balance Available for Dividends	**91,875**	**93,030**	**107,564**	**92,881**	**86,800**	**69,227**	**34,045**

TABLE 14
METROPOLITAN DISTRICT RAILWAY NET REVENUE ACCOUNT & APPROPRIATION ACCOUNT 1895-1901 PART 2

	1895	1896	1897	1898	1899	1900	1901
	Year	Year	Year	Year	Year	Year	Year
	£	£	£	£	£	£	£
Revenue							
Balance Available for Dividends	**91,875**	**93,030**	**107,564**	**92,881**	**86,800**	**69,227**	**34,045**
Expenditure							
5% Preference Stock	41,250	43,125	50,625	39,375	34,688	23,438	
CLER 4% Guaranteed Stock	48,552	48,552	48,552	48,552	49,836	39,583	23,438
WBR 4% Guaranteed Stock					1,650	5,775	9,899
Sub Total	**89,802**	**91,677**	**99,177**	**87,927**	**86,174**	**68,796**	**33,337**
C/Fwd	**2,073**	**1,353**	**8,387**	**4,954**	**626**	**431**	**708**
Dividend Percentage							
5% Preference Stock	2¾%	2⅞%	3⅜%	2⅝%	$2^{5}/_{16}$%	$1^{9}/_{16}$%	
CLER 4% Guaranteed Stock	4%	4%	4%	4%	4%	$3^{1}/_{6}$%	1⅞%
WBR 4% Guaranteed Stock					4%	4%	4%

The reduction in the surpluses coming through from the Revenue Account had a major impact on the Net Revenue Account even though there was no significant addition to the fixed charges. In fact, in the years 1899-1901 the MDR received interest on their advances to the WBR joint committee. These interest receipts would continue until the line was opened. The expenditures in the Net Revenue Account, which were £150k in 1894 had only increased to £152k in 1901. This included a small loss on the CLER in 1901, which had been profitable since 1892. The balance available for dividends fell by 62 per cent from £90k in 1894 to £34k in 1901.

Although the dividend on the 5 per cent preference shares rose from 2⅝ per cent in 1894 to 3⅜ per cent in 1897, by the end of the period no dividend was paid. It was possible to pay the 4 per cent dividend on the CLER guaranteed stock between 1895 and 1899, but the inclusion of the WBR 4% guaranteed stock from 1898, which ranked higher, meant that payments were reduced to 1⅞ per cent in 1901. The situation had become very serious by 1901, almost verging on bankruptcy, which of course meant that Forbes and the MDR board had little option but to accept the takeover offer by the Yerkes Group. The uncomfortable fact was that fixed charges were due to increase in 1902 and beyond, as the charges for the WBR 4% guaranteed stock rose and there was the dividend on the ESHR 3½% rent charge stock still to come, let along possible commitments from other projects such as the LLT.

7. Overview of Financial Performance

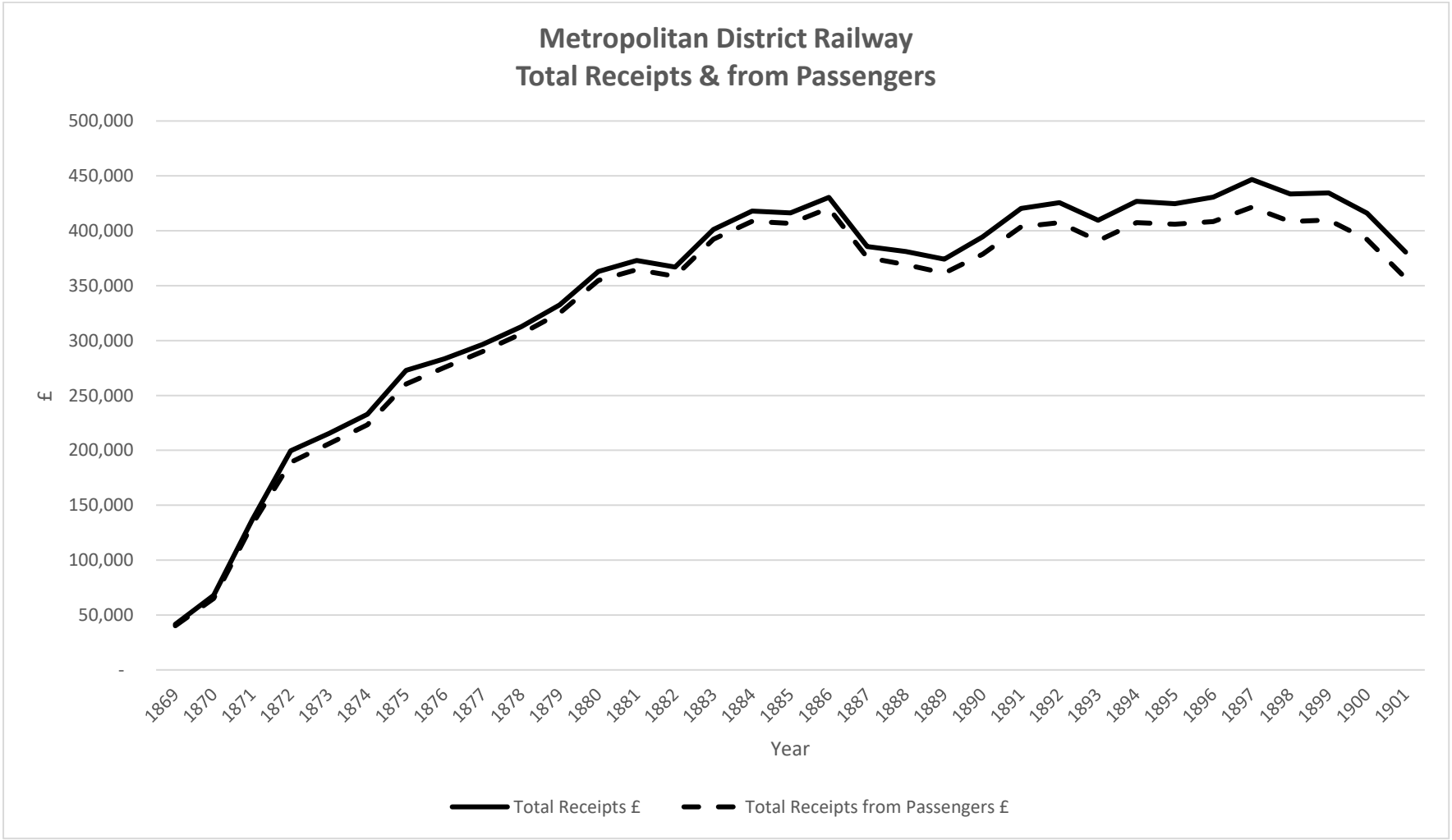
Although the financial difficulties that the MDR faced over the years 1863-1901 have been covered in the previous sections, it is useful to take an overall view of the whole period. No attempt has been made to adjust the reported figures for inflation. The published inflation figures[viii] for the years in question show that the consumer prices index for the whole period was well below 2 per cent and thus the impact of inflation on the MDR's figures was relatively small.

The following graphs can be produced from the available figures:

A. Total receipts and the total from passengers
B. Total number of passengers
C. Total capital receipts
D. Surplus on revenue account
E. Fixed charges
F. Dividends on preference shares and ordinary shares
G. Preference shareholders' return compared with inflation and a risk free rate

Graph A shows both total receipts and those from passengers. The MDR was different from the majority of railway companies in that it had no freight depots of its own nor did it run any freight trains. Parcels and small amounts of merchandise and minerals were carried in its passenger trains, but the revenues from these was relatively small. Rents were the main item making up the difference between total receipts and those from passengers.

Graph A


Metropolitan District Railway
Total Receipts & from Passengers
£
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
1869 1870 1871 1872 1873 1874 1875 1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901
Year
Total Receipts £
Total Receipts from Passengers £

The period from the opening of the first few miles of the MDR's portion of the Inner Circle to 1886 showed a steady growth of receipts primarily as explained above from passengers. This period included the opening of extensions to Ealing, Hounslow, Putney Bridge and Richmond, together with the completion of the CLER in 1884. Economic conditions were partly responsible for the dip in receipts in the late 1880s, but there was an increase from when the Wimbledon extension opened in 1889 up to 1892. Apart from the South Acton Spur, there were no more new lines opened up to 1901, and total receipts remained relatively static until 1900. In that year, the opening of the CLR, an electric tube, led to a falling off of total receipts. Also, increased competition from electric trams was felt in certain areas.

Graph B shows the increase in total passenger numbers over the years 1872-1901. The MDR used an estimated number of journeys by season ticket holders to arrive at the numbers of those passengers. The influence of the number of 3rd class passengers is clearly seen. The increase in each type of passenger over the period 1872-1901 was as follows:

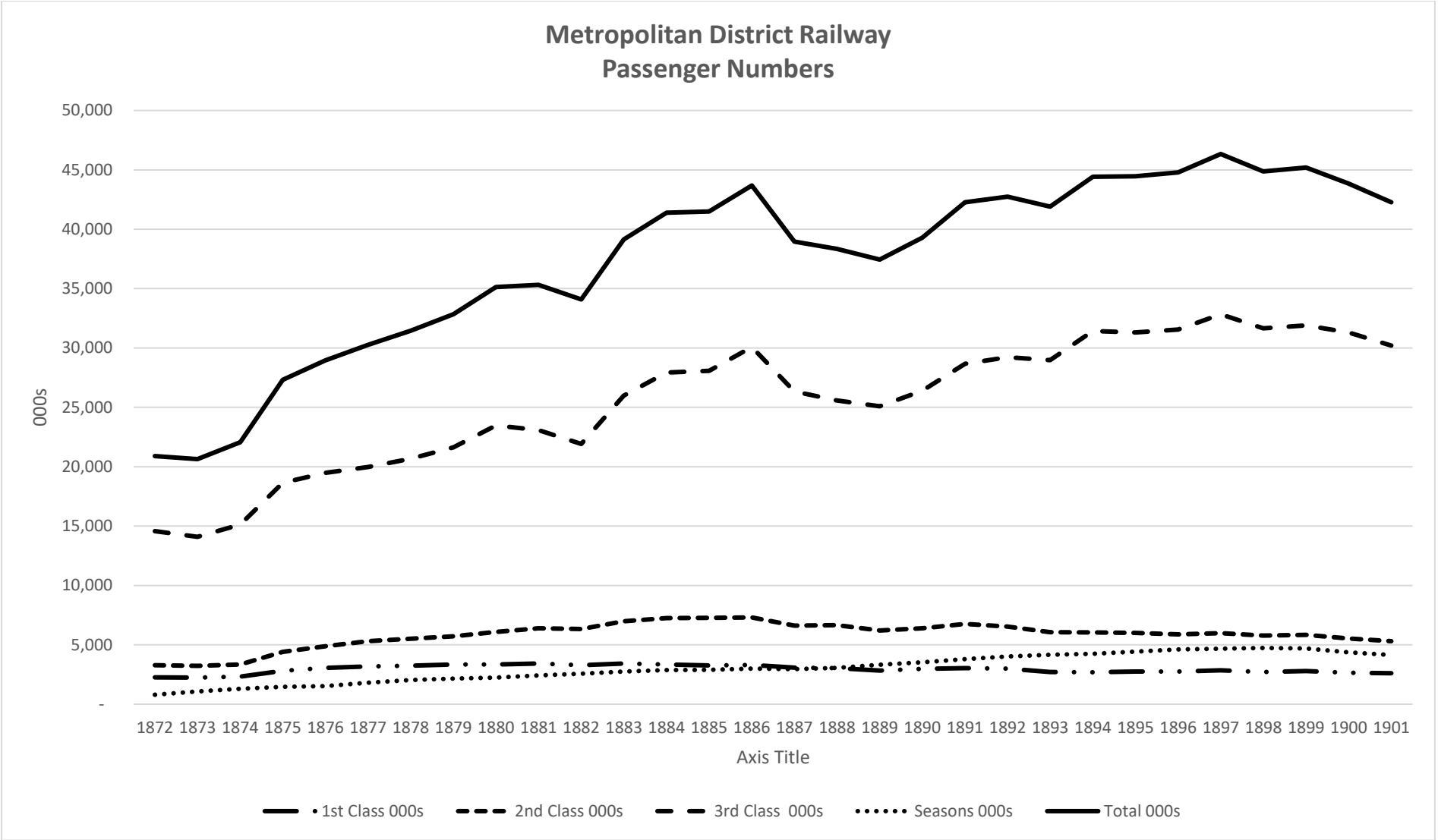
	Numbers 1872 000s	Numbers 1901 000s	Increase 000s	Percentage %
1st Class	2,253	2,611	358	16
2nd Class	3,279	5,300	2,021	62
3rd Class	14,566	30,208	15,642	107
Seasons	795	4,149	3,354	422
Total	**20,893**	**42,268**	**21,375**	**102**

The corresponding increases in revenue from those passengers was as follows:

	Revenue 1872 £	Revenue 1901 £	Increase £	Percentage %
1st Class	35,975	46,083	10,108	28
2nd Class	35,371	63,051	27,680	78
3rd Class	110,046	212,174	102,128	93
Seasons	7,708	35,505	27,797	361
Total	**189,100**	**356,813**	**166,713**	**89**

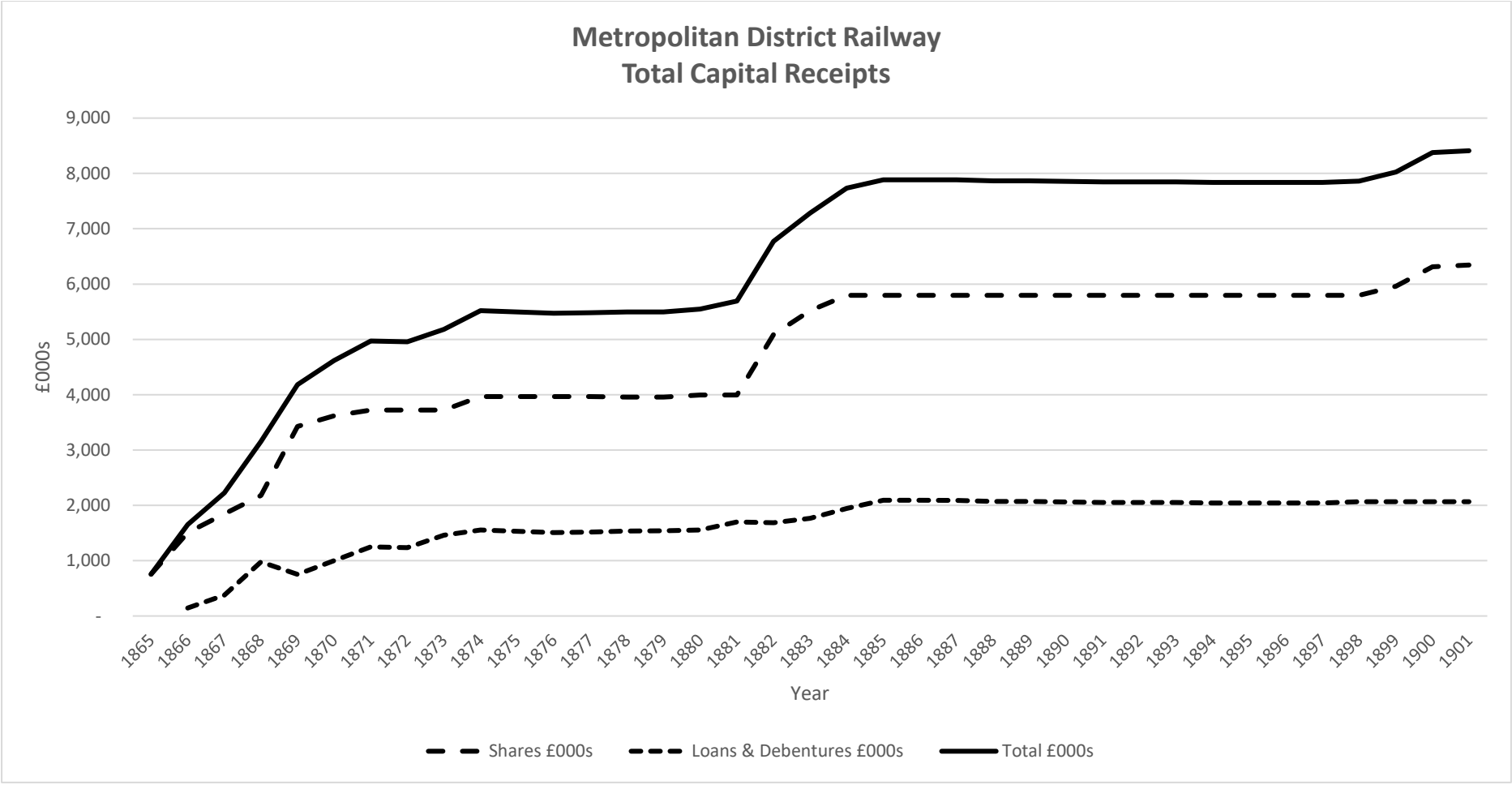
The increase in passengers did not produce an equivalent increase in revenue, with the 1st and 2nd class passengers producing proportionately more and the 3rd class passengers and the season ticket holders proportionately less.

Graph B


Metropolitan District Railway
Passenger Numbers
000s
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
1872 1873 1874 1875 1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901
Axis Title
1st Class 000s
2nd Class 000s
3rd Class 000s
Seasons 000s
Total 000s

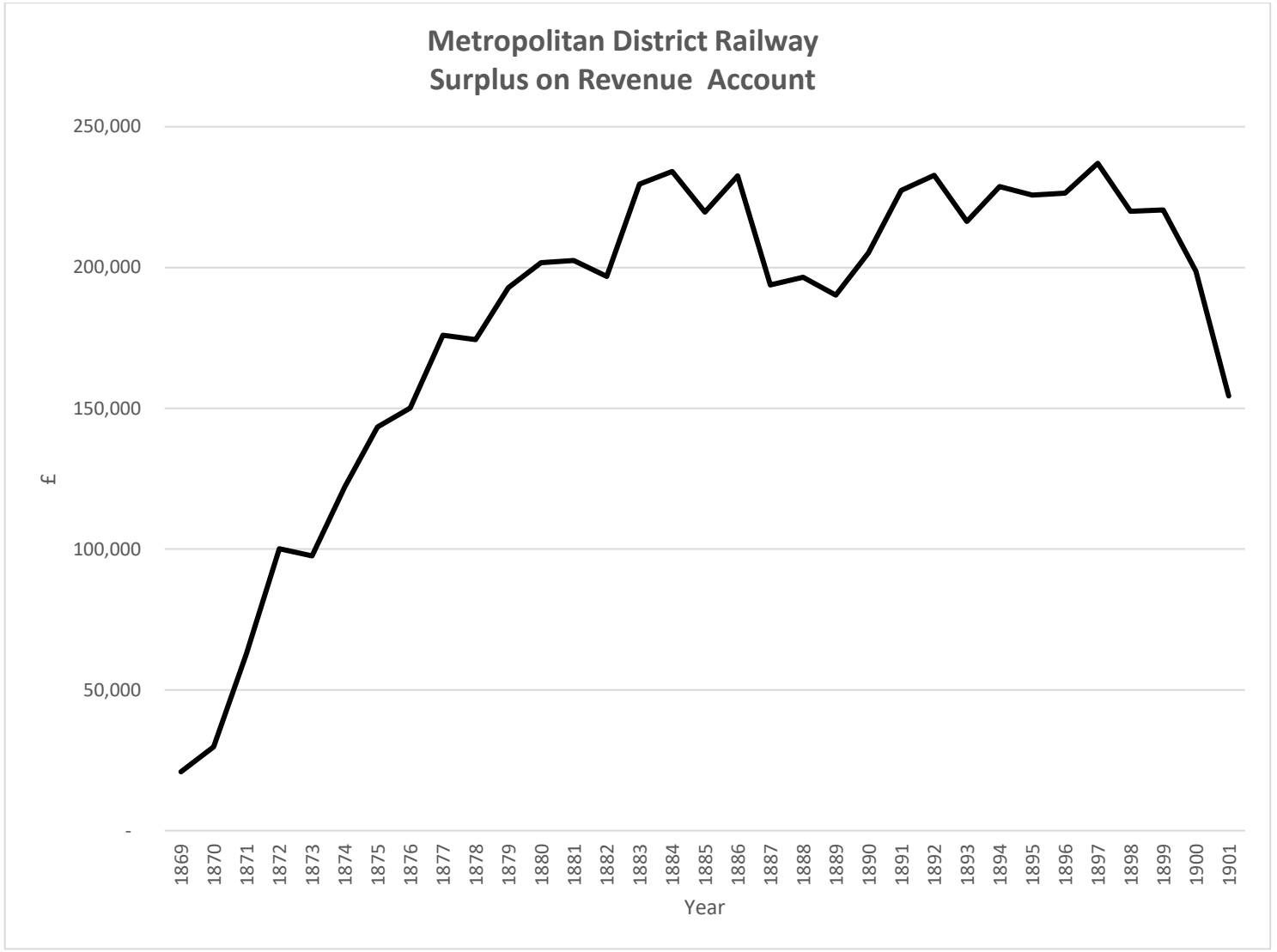
Graph C shows the total receipts that the MDR received from its shareholders and loan/debenture holders. Following the 1864 Act, the MDR rapidly created the necessary financial instruments to obtain the money to enable construction of the first section of line to proceed. As can be seen on the graph, the money came in steadily between 1865 and 1871, when the line to Mansion House was completed. Thereafter was a smaller increase relating to the Hammersmith extension. No money was then required until the early 1880s. A further sharp rise then took place to finance the CLER plus the extensions to Ealing and Putney Bridge. Between 1885 and 1898, no further money was received primarily because of the poor state of the MDR's finances precluded it from seeking further capital. In the closing years of independence, it was possible to raise a relatively small amount for preliminary expenditure on the LLT. It should be noticed that no debentures were created after 1885, because an interest rate of over 6 per cent would be required by the markets.

Graph C


Metropolitan District Railway
Total Capital Receipts
£000s
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
1865 1866 1867 1868 1869 1870 1871 1872 1873 1874 1875 1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901
Year
Shares £000s
Loans & Debentures £000s
Total £000s

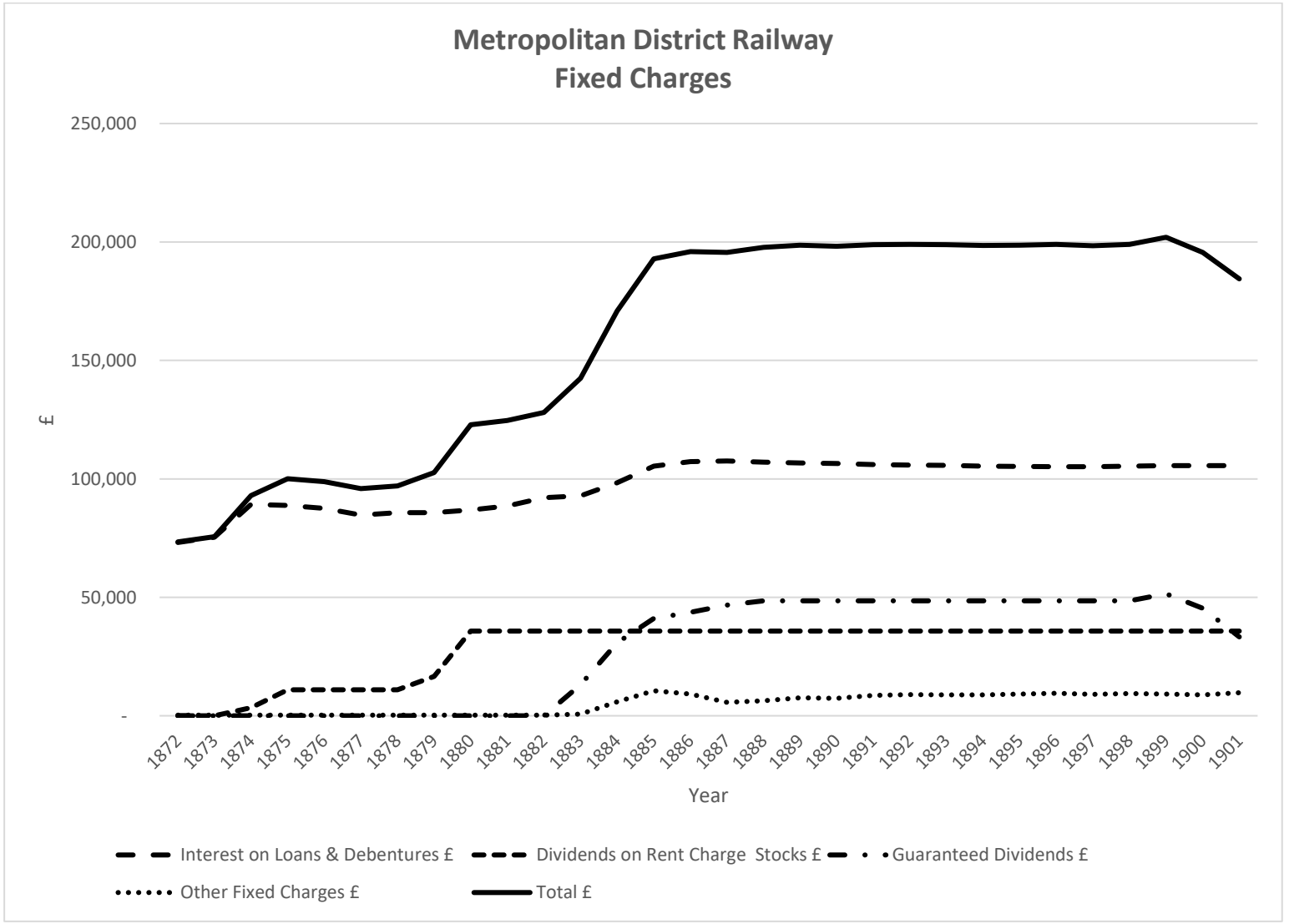
Graph D shows the balance on the Revenue Account carried forward to the Net Revenue Account. This illustrates part of the predicament that the MDR found itself in the second half of its independence years. Up to 1884, there was a steady rise in the surplus from operations, as the MDR opened most of its portion of the Inner Circle and extended westwards to Ealing Broadway, Hounslow, Putney Bridge and Richmond. Thereafter, progress stalled and the peak of £234k in 1884 was not exceeded until £237k was reached in 1897. The main reason for this was that costly completion of the CLER left the MDR financially weakened and it was unable to undertake any significant extension to its network. During the final years of independence there was a large fall in the revenue surplus, reflecting the opening of the CLR and other competition.

Graph D


Metropolitan District Railway
Surplus on Revenue Account
250,000
200,000
150,000
100,000
50,000
-
£
1869
1870
1871
1872
1873
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900
1901
Year

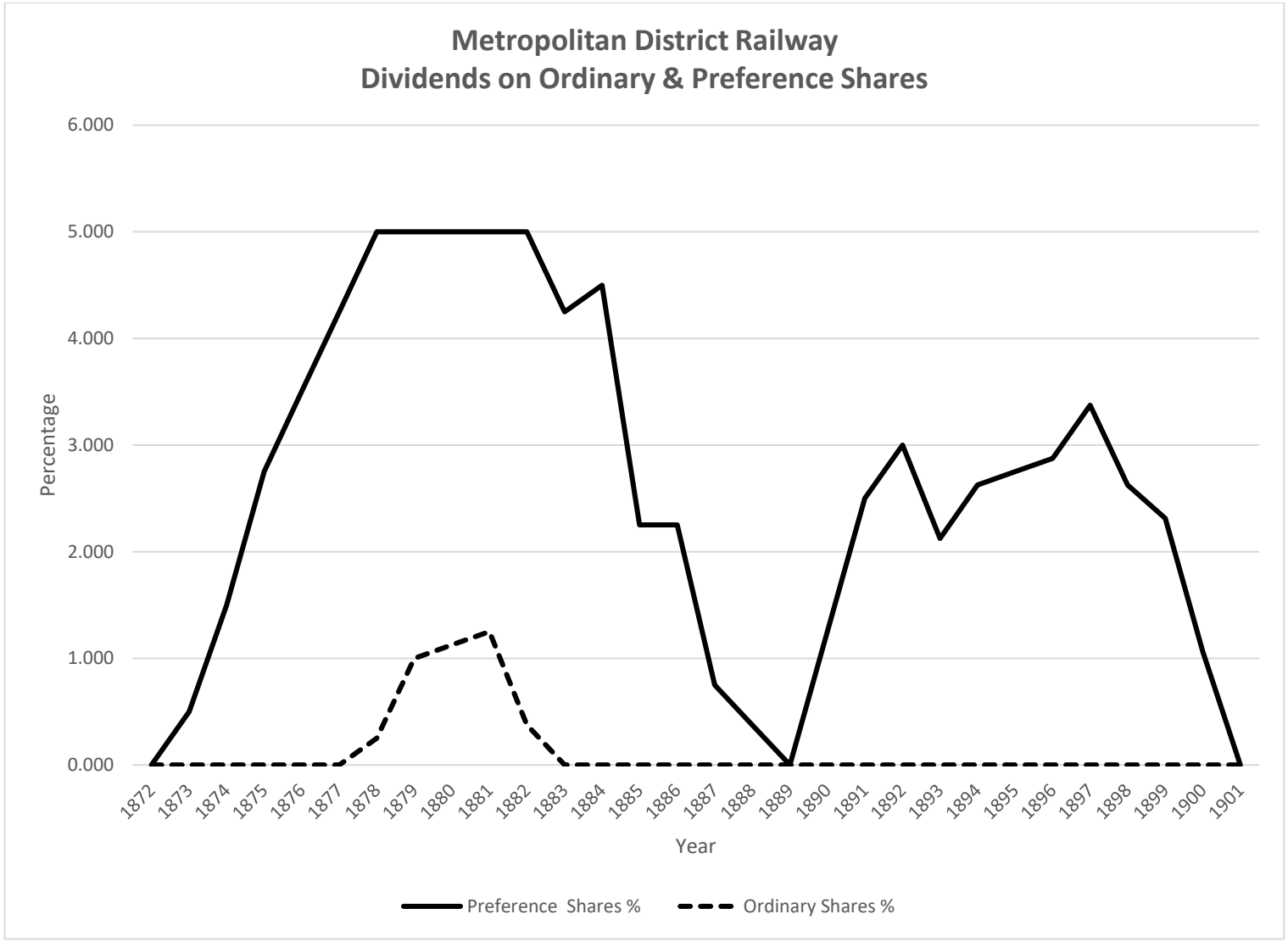
Graph E shows annual level of fixed charges. These comprised interest on loans and debentures, dividends on rent charge stocks, guaranteed dividends for joint lines and other items. The rent charge stocks were for the Ealing, Hammersmith and Putney Bridge extensions. The guaranteed dividends were on stocks issued by the CLER and the WBR. Other commitments covered lease rentals, mainly for the ELR, arrears of government duty and rent of a subway to Victoria main line station. This shows the rising level of commitments that the MDR had to pay before it could make a return to its preference and ordinary shareholders. The total line on this graph should be compared with that on graph D to see how much of the operating surplus was taken up by the fixed charges. There were some receipts coming into the Net Revenue Account such as rents on surplus properties, interest receivable and the MDR's share of the CLER revenue surplus, but these were relatively small. As the revenue surplus fell in the years 1899-1901, some of the fixed charges, such as the guaranteed dividend for the CLER stock, could not be paid in full resulting in a reduction in the total fixed charges paid.

Graph E


Metropolitan District Railway
Fixed Charges
250,000
200,000
150,000
100,000
50,000
-
£
1872 1873 1874 1875 1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901
Year
Interest on Loans & Debentures £
Dividends on Rent Charge Stocks £
Guaranteed Dividends £
Other Fixed Charges £
Total £

Graph F shows the percentage dividends paid on the MDR's ordinary and preference shares. For the ordinary shareholders, their returns over the whole period were negligible. Dividends were only paid in the years 1878-82 with a maximum of 1¼% in 1881. This was clearly a return that neither covered inflation nor matched a risk-free rate. The preference shareholders' returns were not a lot better, and they only received their nominal 5 per cent in the years 1878-82 and in 1889, and 1901 they received nothing at all. As the shares were not cumulative preference shares, there was no repayment for any deficiency.

Graph F

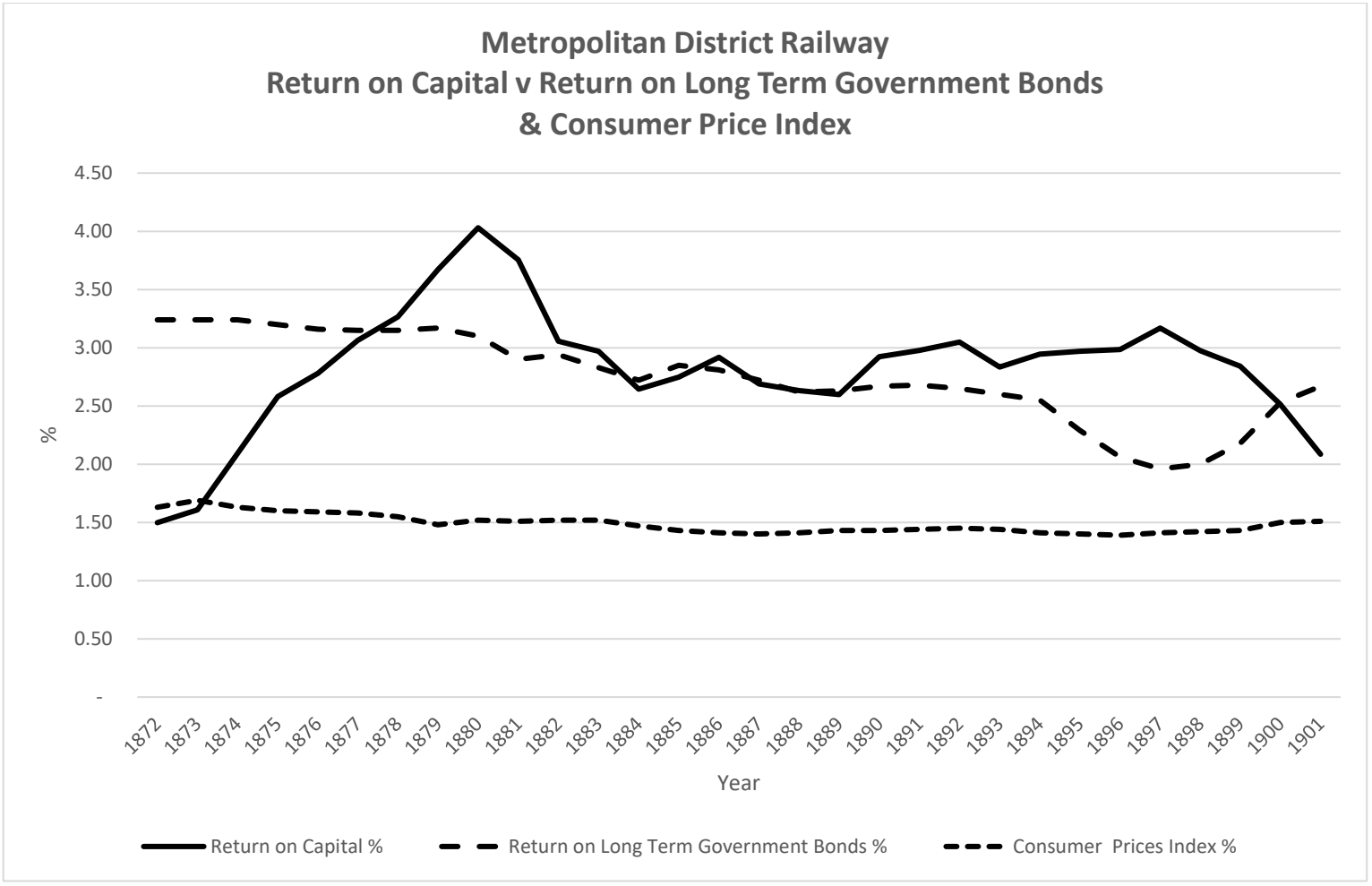

Metropolitan District Railway
Dividends on Ordinary & Preference Shares
6.000
5.000
4.000
3.000
2.000
1.000
0.000
Percentage
1872
1873
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900
1901
Year
Preference Shares %
Ordinary Shares %

Graph G shows the revenue balance available for interest and dividends calculated as a percentage of the capital received and this compared with both the rate paid on government long term debt[ix] and the consumer prices index. The graph shows that MDR's return on capital increased steadily from 1872 to 1880 by which time it had reached 4 per cent and was about 1 per cent above the rate on government long term debt and well above the rate of inflation. Through most of the 1880s the return on capital struggled to keep in line with the rate on government long term debt, but there was a recovery in the 1890s to a peak of just under 3¼ per cent. Thereafter, there was a decline, as the MDR struggled to remain profitable, and by 1901 the rate was only just over 2 per cent and below the rate on government long term debt at just over 2⅝ per cent. The return on capital had, however, been well above the rate of inflation since 1874.

What this graph does not show is how the overall rate of return related to the holders of the MDR's loans and debentures, its rent charge stock holders, its holders of stocks with a guaranteed rate of return, its preference shareholders and its ordinary shareholders. The holders of the MDR's loans and debentures had the first claim on the revenue surplus. The bulk of the debentures had a 6 per cent rate with the remainder and the loans generally having rates between 4 and 6 per cent. Next in line were the holders of the rent charge stocks for the Ealing, Hammersmith and Putney Bridge extensions and these had a rate of 4 to 4½ per cent. These two groups had to be paid as they would otherwise take the MDR to court and potentially cause it to be liquidated. The holders of the guaranteed stocks for the CLER and the WBR were next in line with the WBR having precedence. Both of these had a 4 per cent rate. The MDR's own 5 per cent preference shareholders out ranked its ordinary shareholders.

Taking into account, the percentage rates paid to all the above, it is obvious that from 1884, when the overall company rate of return was around 3 per cent and lower in the last few years, the preference shareholders were only able to receive well below the 5 per cent that they were due. The ordinary shareholders only received a dividend in a few years, and this would not have protected them from inflation, which only averaged 1½ per cent over the period. In 1900-01 the rate on the CLER guaranteed stock had to be pared back to enable the WBR guaranteed stock to be paid in full.

Graph G


Metropolitan District Railway
Return on Capital v Return on Long Term Government Bonds
& Consumer Price Index
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
-
%
1872 1873 1874 1875 1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901
Year
Return on Capital %
Return on Long Term Government Bonds %
Consumer Prices Index %

8. **An Assessment**

It is stating the obvious to say that, with the MDR facing bankruptcy in 1901, it had not been a financial success. However, it is worthwhile looking at a number of the factors at play. The MR was the company that was most similar to the MDR and by comparing various statistics for the two companies in 1900, the MDR's last full year of independence, it gives an indication what the MDR might have achieved.

Track miles owned, jointly owned and leased

MDR	MR
17 miles 78 chains	69 miles 72 chains

In both cases, the figures exclude lines over which they had running powers such as Putney Bridge to Wimbledon, and Studland Road Junction to Richmond

Amounts received into the capital account

MDR	MR
£8.377m	£12.364m

Total No of Passengers

MDR	MR
43.842m	93.333m

The passenger numbers for the MDR and the MR are taken from their annual reports. The MDR stated that they calculated the number of journeys by season ticket holders by factoring up by 600, the method used in the Board of Trade London Traffic Branch Report. The MR did not state the method they used but it was probably similar.

Total Receipts from Passenger & Freight Trains

MDR	MR
£399k	£823k

Surplus on the Revenue Account

MDR	MR
£199k	£453k

Net Profit Before Interest on Debentures & Loans and Dividends

MDR	MR
£211k	£534k

Return on Capital Receipts

MDR	MR
2.5%	4.3%

Dividends on Ordinary Stock

MDR	MR
0%	3.125%

The MR had the advantage of opening their initial line over five years before the MDR opened theirs and the kudos that went with it. It was also allocated a greater mileage of the Inner Circle than the MDR. The MR operated the MDR's first section of line between late 1868 and June 1871 and it was widely assumed the MR would take it over. Both companies experienced a cost overrun on their initial sections of line (Gloucester Road to Mansion House and Paddington to Farringdon respectively), but that experienced by the MDR was proportionately greater. This reflected physical difficulties such as tunnelling close to the Palace of Westminster and Westminster Abbey, being crossed by large watercourses that disgorged into the River Thames and building through what was originally the marshy ground between Westminster Bridge and Blackfriars. By the time the MDR had completed their line to Mansion House in 1871, the MR had already extended their line to Moorgate and had penetrated further into the City of London. By 1876, the MR had reached Aldgate and had almost completed their section of the Inner Circle, whereas the MDR had progressed no further. Because of the close proximity of the two parts of the Inner Circle in the eastern part of the City of London, about a mile or less, the MR had taken at least some of the passengers that the MDR would have attracted had their line between Mansion House and Tower Hill been completed. When the City authorities took action to force the issue of completion of the Inner Circle, the MDR had to accept the line between Mansion House and Aldgate as a joint venture with the MR and the loss of traffic that this entailed.

The MR also had a localised advantage in that it reached Hammersmith in 1864 and established its passenger traffic before the MDR arrived in 1874.

The Overend and Gurney financial crisis of 1866 impacted the MDR more seriously than the MR. The latter had opened its line in 1863 whereas the MDR had only started construction of its line in 1865. The MDR's cost overrun was thus more expensive to finance.

The strategic vision of the two companies regarding expansion beyond the Inner Circle was also very different. Watkin, being chairman of both the Manchester Sheffield &

Lincolnshire Railway (from 1897 the Great Central Railway (GCR)) and the South Eastern Railway as well as the MR, wanted to use the latter to fill the gap between the other two and looked upon it as a main line railway. Part of this was to develop freight traffic on the extension out from Baker Street. Goods depots were built and the MR ran its own freight trains. Forbes, although he was chairman of the LCDR, had much less ambitious plans for the expansion of the MDR and no goods depots were built or freight trains run. The approach to surplus properties between the two men was also noticeably different. Whereas the MDR concentrated on realising the cash from its surplus properties, the MR became involved in using its surplus properties to develop land near the stations on its trunk line out of London with a view to attracting more passengers.

The MR concentrated its expansion on a single trunk line and by 1894 had reached beyond Aylesbury to Verney Junction, some 50 miles from Baker Street, with only single branch to Chesham. Where the MR shared lines with other companies, it took steps to maximise its own traffic. An early example of this was the construction of the City Widened Lines, which quadrupled the Inner Circle between Kings Cross St Pancras and Moorgate. A similar example took place much later, when the GCR was developing its London extension. The MR built a separate set of tracks from Harrow on the Hill station to Canfield Place near Finchley Road station for the exclusive use of the GCR but with no intermediate stations. The MDR had a much more limited trunk line west of Earls Court, which by 1900 only reached just north of Ealing Common station, a distance of 5 miles, although construction of the ESHR was already underway and would later lead to it reaching Uxbridge. The MDR was also dependent on the LSWR for use of the track between Studland Road Junction and Turnham Green for its trains to Ealing Broadway and Hounslow, as well as from Putney Bridge to Wimbledon and Turnham Green to Richmond.

It is, of course, a moot point whether management decisions taken by the MDR in its early years might have led to a different outcome. The substantial cost overrun on building the first section of the MDR's part of the Inner Circle led to the issue of over £0.5m of 6 per cent debenture stock in 1868 and £1.5m of 5 per cent preference shares in 1869. This was the beginning of the build up of a collection of high fixed charges. Nevertheless, in the period up to 1882, the financial results of the MDR offered some hope that things could be turned around. However, the issue of £1.25m of 4 per cent guaranteed stock for the CLER, which started in 1882, and which outranked the MDR's preference and ordinary shares in respect of dividends, was probably the time when any sustained improvement in its financial results became unlikely.

Perhaps one of the great "ifs" of the MDR was whether, if it had supported the City of London authorities in their proposals building the link between Mansion House and Aldgate, it could have avoided the large increase in its fixed charges and improved its financial position between 1884 and 1900. Even so this might not have been enough to avoid the problems it faced in 1900.

Appendix 1

CAPITAL FINANCING STRUCTURE

The enabling Acts for the MDR, as with the other railway companies formed at the same time, specified the amount of capital that was to be raised split into shares, sometimes referred to as stocks, and loans including debentures. These two categories were frequently subdivided as follows:

1. **Shares**

    a) Preference Shares

    These shares were entitled to a first call on any profits after the interest on all loans was paid. The dividend to which they were entitled was expressed as percentage on the face value of the share certificate. Sometimes it was not possible to pay the full amount due in an accounting period. If the shares were issued as cumulative preference shares, any deficit arising in one period could be recouped in future periods if profits allowed.

    The financing of the CLER, by which the MDR and the MR completed the construction of the final part of the Inner Circle added a special type of stock, the 4 per cent Guaranteed Stock, with the two companies responsible for half each. Although not specifically called preference shares, the 4 per cent Guaranteed Stock were in effect the same type of share, but with one important difference. This stock ranked first in line after the interest on all the loans of each company had been paid, outranking the preference shares issued directly by the two companies.

    b) Ordinary Shares

    These shares were entitled to a dividend out of profits remaining after interest on loans and dividends on preference shares had been paid in full. Not all of the residual profits would be paid as dividends to the ordinary shareholders, as some cash might need to be retained e.g. for future capital expenditure or as a reserve.

    Ordinary shares were often subdivided as follows:

        i. Preferred Ordinary Shares

        These ordinary shares were entitled to a fixed percentage of the profits available to the ordinary shareholders, before any payment was made to the other ordinary shareholders.

ii. Ordinary Shares

These ordinary shares were entitled to a dividend out of any residual profits after the payment of dividends in full to the preferred ordinary shareholders. Where there were deferred ordinary shares, see below, the dividends could be limited to a percentage ceiling.

iii. Deferred Ordinary Shares

These ordinary shares had the final call on any profits available after payment of dividends to the other ordinary shareholders.

2. **Loans**

a) Unsecured Loans

These loans were not frequently used by railway companies, because the lenders, having no security, required a high rate of interest. They were useful in the initial stage of a railway company before there were assets which could be used as security.

b) Debentures

Debentures were loans with some security based on the assets of the company. Where secured on specific properties, they were sometimes called mortgage debentures. The loan interest was expressed as a percentage on the face value of the loan certificate. Debentures could vary considerably e.g. in some cases having preference for interest payment over other debentures or in others having conversion rights into ordinary shares.

3. **Premiums and Discounts**

Premiums and discounts often arose in connection with the issue of shares and debentures. If a company's financial position was considered attractive, people subscribing for shares and debentures could be asked to pay a premium in excess of the face value of the security. Similarly, weaker companies had to offer a discount on the face value of the security.

4. **Gearing**

The term gearing relates to the ratio of capital financing, which has a fixed return, such as debentures and preference shares, to the ordinary shares and deferred ordinary shares, which have no ceiling on the level of return or the guarantee of any. The advantage of a high level of gearing i.e. a large percentage of the total capital in the form of debentures and preference shares is that the rewards to the ordinary and deferred ordinary shareholders escalate rapidly as the company becomes more profitable. The downside is that when the financial results deteriorate those rewards can fall rapidly and eventually be

eliminated. The enabling Acts for the MDR for the most part set the authorised capital at 25 per cent loans and 75 per cent shares. However, the company had discretion as to the proportion of preference shares it could issue within the shares' percentage.

5. **Capital Deficits**

The amount spent on capital account always differed from the amount received from shareholders and those making loans. If less, this was because there was normally a lag between receiving and spending the money. As railways developed, capital spending often exceeded the amount received on capital account. This was possible, at least in the short term, because the net current assets in the business (cash, debtors and stock less creditors) could provide funding. Fresh capital would normally be needed if the capital deficit grew too large.

6. **Payment of Dividends out of Capital Receipts**

The enabling acts for railways made it clear that the capital monies raised were to be used for the railway infrastructure specified in them. This did not prevent unscrupulous directors from manipulating the accounts, so that capital receipts were used to fund larger dividend payments than would be justified from operating profits. The effect of this was to boost share prices enabling such directors to sell shares and realise capital gains. George Hudson is normally cited as indulging in such practices.

Appendix 2

RUNNING POWERS, LEASED LINES AND JOINT LINES

The MDR in common with the majority of railway companies did not exclusively operate its own trains on its own tracks. The following types of operation tended to arise:

1. **Running Powers over Other Companies' Lines**

   Running powers enabled railway companies to run through trains to or from destinations outside their own track network. The simplest form of arrangement for running powers involved the payment of a "rental" by the company running the trains to the company owning the track. This was often expressed as a percentage of the receipts earned by the company operating the trains.

   The MDR had arrangements both ways. For example, it had running powers over lines owned by the LSWR and received payments from companies, such as the LNWR, with running rights over its line to Mansion House.

   In some instances, a railway company would work a line built by another company i.e. provide and run the trains for that operator. The MDR had this type of arrangement with the HMR.

2. **Leased Lines**

   In some cases, the company owning a line did not run trains itself but leased the operation to another company. Payment frequently took the form of a percentage of the receipts earned by the company operating the line. The MDR in conjunction with the MR had this type of arrangement with the ELR and ran trains from their part of the Inner Circle to New Cross and New Cross Gate.

3. **Joint Lines**

   Joint lines were ones where the ownership was shared by two or more companies. The agreement between the parties would specify what the arrangements were for sharing capital and running costs, and for operating the line. The MDR's principal joint line was the CLER which it shared with the MR. This covered the final portion of the Inner Circle from Aldgate to Mansion House and some short connecting lines to the east.

4. **Joint Line Committees**

   The enabling Acts for joint lines invariably specified the formation of a joint committee to administer the arrangements between the companies. Under the 1868 Act no provision was made within the accounting statements for the reporting of transactions relating to joint lines. Most companies tended to merge the costs and

revenues relating to their joint lines with those relating to their wholly owned lines. The 1911 Act made specific provision for companies to report the transactions relating to the joint committees, where they had major interest, separately from the rest of their operations. The joint committees themselves were also required to report in a compatible form. It was only from 1913, the year that the 1911 Act took effect, that the results of the MDR's joint committees began to be reported in a clearer form as Abstract J in their annual accounts.

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[i] Sheward, T. (2019), *A Financial History of the Metropolitan Railway 1853-1933,* Web site of the Railway & Canal Historical Society.

[ii] Horne, M. A. C. (2018), *London's District Railway, A History of the Metropolitan District Railway Company, Volume I,* Capital Transport. (2019), *Volume* 2*,* Capital Transport (2019).

[iii] Edmonds, A. (1973), *History of the Metropolitan District Railway Company to June 1908,* London Transport.

[iv] Lee, C. E. (1988), *The Metropolitan District Railway,* The Oakwood Press.

[v] Rose, D. (1980), *The London Underground, A Diagrammatical History*, Douglas Rose.

[vi] The annual reports of the MDR for the years 1864-1901 can be found in The National Archives (TNA) , RAIL 1110/315 and 316.

[vii] The Railway Returns for the years in question can be found in TNA, RAIL 1053.

[viii] John Donoghue, Louise Golding and Graham Allen, *Consumer Price Inflation since 1750* London Office for National Statistics, (2004), ONS Economic Trends 604.

[ix] Norbert Jansen, Charles Nolan, and Ryland Thomas, *Money, Debt and Prices in the United Kingdom, 1705-1996,* Economica, vol 69, no 275 (2002), pp461-479.