

# TRANSPORT FOR LONDON

## UNDERGROUND ADVISORY PANEL

TUESDAY 6 NOVEMBER 2007 AT 2.00 pm  
BOARDROOM, 14<sup>TH</sup> FLOOR, WINDSOR HOUSE, LONDON

### AGENDA

Item	Sponsor
1. Apologies for Absence and Declarations of Interest	
2. Minutes of the Meeting held on 9 May 2007	
3. Matters Arising and Actions List	
4. Managing Director's Performance Report	Tim O'Toole
5. Victoria Line Upgrade	Bob Wall
6. Line Upgrades: Operational Readiness	Paul Kilius-Smith
7. Any Other Business	

Date of next meeting: Wednesday 13 February 2008

## TRANSPORT FOR LONDON

### Minutes of the Underground Advisory Panel Boardroom, 14<sup>th</sup> Floor, Windsor House, Victoria Street, London Wednesday 9 May 2007, 2.30pm

#### Panel Members

Peter Hendy	Chair
Stephen Glaister	Vice Chair
Steve Allen	Managing Director, Finance
Honor Chapman	Board Member
Christopher Garnett	Board Member
Kirsten Hearn	Board Member
Tim O'Toole	Managing Director, LUL
Tony West	Board Member

#### Board member in attendance

Dave Wetzel	Board Member
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#### Adviser

Peter Anderson	Board Adviser
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#### In attendance

Sarah Atkins	Director of Reviews and Legal, LUL
Peter Boxell	Chief of Staff, Group Services
Howard Carter	General Counsel
Howard Collins	Service Director, LUL
Naomi Connell	Director of Finance and Support Offices, LUL
Jeff Ellis	General Manager, Central Line, LUL
Barry Hutton	Head of Finance, LUL
Gabriel Izienicki	Lifts and Escalator Engineer, LUL
Richard Jones	Energy Contracts Manager, LUL – From minute 35/05/07– 40/05/07
Richard Parry	Director of Strategy & Service Development, LUL
Sam Richards	Commissioner's Chief of Staff
David Waboso	Director of Engineering, LUL
Matthew Webb	Energy Conservation Manager, – From minute 35/05/07-43/05/07

#### Secretariat

Vickram Bhakar	TfL Secretariat
Horatio Chishimba	TfL Secretariat

#### 35/05/07 Apologies for Absence and Declaration of interests

#### Actions

Apologies for absence were received from Bryan Heiser, Murziline Parchment and Lord Toby Harris. No interests were declared.

**36/05/07 Minutes – 13 December 2006**

The minutes of the meeting held on 13 December 2006 were approved as a correct record and signed by the Chair.

**37/05/07 Matters Arising and Outstanding Items**

There were no matters arising from the previous minutes.

All outstanding items were on the agenda for the meeting. The actions list had been completed except for the Crime and Disorder Strategy (33/12/06) which would be submitted to the TfL Board on 30 May 2007.

**Jeroen  
Weimar**

**38/05/07 Managing Director's Performance Report**

The Managing Director's Performance Report for the year ended 31 March 2007 was presented by Tim O'Toole.

The principal performance issue was the Customer Satisfaction Survey score, and the higher than target Excess Journey Time. This was due to the poor performance of Metronet earlier in the fiscal year, and the increasing level of crowding caused by further patronage increases. Victoria line performance had dipped because of the impact of the line upgrade works and the age of the infrastructure and trains.

It was agreed that Stephen Glaister would be provided with details of the cost/fare per journey.

**Tim  
O'Toole**

Dave Wetzel asked when the whole fleet would be changed on the Victoria line. Tim O'Toole stated that the target date was 2013.

Tony West raised the issue of performance on the Staff Availability and Cleanliness measures. Richard Parry commented that the Staff Availability measure at stations had improved over recent years but staff levels were now under pressure because of the increase in volume of people using the service. This might in some cases mean that there were less staff available to deal with customer questions as efficiently and effectively as in previous years. In terms of Cleanliness, Tim O'Toole commented that this was mostly to do with discarded newspapers, which was an issue on stations and trains. Due to security restrictions it was not possible to have bins. Tim O'Toole agreed to provide Tony

**Tim  
O'Toole**

West with the statistics on the long term trend in staff helpfulness.

Christopher Garnett asked about the number of District Line failures. Howard Collins commented that this had been one of the strongest fleets in recent years. However, performance had recently been affected by issues concerning train doors which would be addressed in the interim District Line train upgrade, scheduled for completion in 2009.

**The Panel noted the report.**

### **39/05/07 The Challenges for LU**

The presentation by Tim O'Toole provided an overview of the challenges faced by LUL. It highlighted the Line Upgrade, connect, other significant projects and other system improvements which will be delivered whilst maintaining the existing service.

The Panel discussed station and line closures as a result of the Upgrade programme. LU would have 6-10 closures each week over the next 114 weeks. The change process was so large that it was vital that the right staff were in place with the right training to manage the situation.

The Panel congratulated Tim O'Toole on his presentation and urged that the important messages that it conveyed should be made widely available. A television programme and a standing exhibition were suggested. The Panel also commented on the importance of making it clear that this comprehensive plan was different from the PPP.

**The Panel noted the presentation and report.**

### **40/05/07 London Underground Carbon Emissions Reduction Plan**

The LU Carbon Emissions Reduction Plan was presented by Richard Jones and Matthew Webb and highlighted the challenges facing LUL in reducing carbon emissions as well as the targets set by the Mayor. These included:

- 10% reduction in TfL CO<sub>2</sub> emissions by 2010 based on a 2006 base; and
- Contribution to overall Mayoral targets of 60% reduction in CO<sub>2</sub> by 2025.

It was noted that there was a team in place to let the public

and staff know what LU was doing to reduce carbon emissions.

The Panel noted that the energy challenge was being reviewed and a new programme would be put forward later this year. It was noted that behaviour of staff could also be of assistance, for example, on stations that had meters.

**Richard Jones**

Matthew Webb noted that negotiations were currently taking place with suppliers to secure the best proposal for energy which reduced CO2.

**The Panel noted the report and the Carbon Emissions Reduction Plan.**

**41/05/07 Escalators – Engineering & Operational Issues**

The presentation given by David Waboso and Gabriel Izienicki gave an overview of the strategic, operational and engineering issues relating to managing escalators within LUL.

David Waboso commented on the importance of this subject, since no tube network could operate without these assets in good working operation.

The Panel noted that lifts and escalators was now a significant risk and that they may cause further station closures in the future.

The Panel noted a presentation on the upgrade at Bank station given by Jeff Ellis. He gave a breakdown of what would take place over the next five years at the station and the timescale of each project. The work was scheduled for completion in September 2011.

Tim O’Toole said that a briefing process was underway which included the Corporation of London.

In answer to a question from Tony West it was noted that the station would be completed in September 2011.

Honor Chapman asked whether the station could close during the refurbishment to expedite the development. Jeff Ellis responded that this wasn’t possible as Bank was the seventh busiest station on the Underground.

Dave Wetzel asked if the new escalators would have a long life span. Gabriel Izienicki responded that they would have an

expected life span of 20 years. However, with proper maintenance a lifespan of 40 years could be achieved.

**The Panel noted the report and presentation.**

**42/05/07 Transport and Works Act Application (TWA)**

The Panel noted that the 27 June 2007 Board would be asked to approve TWA submissions for the following station projects:

- Victoria Station Upgrade;
- Archway; and
- Highbury and Islington.

**43/05/07 Any Other Business**

There being no further business the meeting closed.

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

Date of next meeting: 6 November 2007

**TRANSPORT FOR LONDON  
UNDERGROUND ADVISORY PANEL**

**6 NOVEMBER 2007**

**ACTIONS LIST**

**Actions from the Last Meeting**

<b>Minute No.</b>	<b>Description</b>	<b>Action By</b>	<b>Target Date</b>	<b>Status/note</b>
37/05/07	<u>Crime and Disorder Strategy</u> It was noted that this paper would be submitted to the TfL Board.	Jeroen Weimar	Completed.	The Crime and Disorder Strategy paper was revised and submitted to the TfL Board on 30 May 2007 as the Community Safety Plan.
38/05/07	<u>Managing Director's Performance Report</u> It was agreed that Stephen Glaister would be provided with details of the cost/fare per journey.	Tim O'Toole	Completed.	The average fare per passenger journey for the year 2006-07 was £1.40.
38/05/07	<u>Managing Director's Performance Report</u> Tony West to be provided with the statistics on the long term trend in staff helpfulness.	Tim O'Toole	Completed.	A graph which shows the long term trend has been provided.
40/05/07	<u>London Underground Carbon Emissions Reduction Plan</u> New programme for the energy challenge to be put forward to the LUL Executive later this year following review.	Richard Jones	December 2007.	Draft programme for 2008/09 to be completed by 31 December 2007 to enable it to be refined prior to implementation on 1 April 2008.

**Actions from Previous Meetings**

There were no outstanding actions from previous meetings.

# **London Underground Limited**

## **Managing Director's Performance Report to the Underground Advisory Panel**



**Mid-year review 2007/08 (to period 6 ended 15 September 2007)**

**London Underground Period Performance Report  
To Period 6 2007/08  
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**LONDON UNDERGROUND LIMITED**  
**Managing Director's Performance Report to the**  
**Underground Advisory Panel**  
**Mid-year review 2007/08 (to period 6 ended 15 Sept)**

**Introduction**

This report covers London Underground's operational and service performance, financial results, asset performance, and PPP contract performance over the first half of 2007/08.

**Customer Satisfaction**

The first quarter's overall evaluation score rose by one point, its third successive one point rise, and met the target of 78. Although the score for the second quarter fell by one point, it was much better than in the second quarter of last year when there was a larger than usual seasonal decline. There have been particularly encouraging year on year improvements in scores for public address and train driver announcements, and for station staff availability. Following the good quarter 1 result the overall evaluation for the year to date remains on target at 78.

**Demand**

High year-on-year growth has continued. Passenger journeys to date at 489 million are almost 8% higher than over the first six periods of last year and are forecast to reach almost 1.1 billion for the year. A new record demand for a Saturday was established on 7 July when large crowds were attracted to London by the Tour de France Prologue and the Live Earth concert at Wembley. Fares revenue for the week ended on that day was also a new record, exceeding £31 million for the first time.

**Metronet Industrial Action**

The major factor affecting performance in the first half of 2007/08 was strike action by RMT members employed by Metronet who commenced what was initially planned to be a 72-hour strike from 18:00 on Monday 3 September, despite having been given assurances by the Mayor and the Administrator and management of Metronet there will be no job cuts or transfers during the Metronet Administration period and no loss of pension rights.

Services on the 9 lines for which Metronet are responsible began to be gradually reduced from around 15:00 and were all advertised as suspended by 18:10. No services ran on these lines on Tuesday 4 September. There was also some disruption to the Piccadilly line which runs over Metronet infrastructure between Rayners Lane and Uxbridge and between Barons Court and Acton Town. Following lengthy talks the union suspended its strike action late on Tuesday night, but disruption continued through Wednesday 5 September as the maintenance and safety checks necessary to guarantee passenger safety meant that services could not be restored immediately. The BCV lines were able to begin limited operations in time for the morning peak but it was not until midday that restoration of services to the Sub Surface lines was able to commence.

**Central Line Derailment**

Shortly after 09:00 hrs on the morning of Thursday 5 July a westbound Central line train struck an obstruction in the tunnel between Mile End and Bethnal Green stations. The three leading bogies were derailed. Of a total of 520 customers who were detrained from the incident train, 20 suffered injuries including 8 who were sent to hospital. The train, track and signalling equipment all suffered damage and services on the line remained suspended between

Leytonstone and Liverpool Street until the morning of Saturday 7 July.

The incident was caused by material that had become dislodged from its licensed storage position in a tunnel cross passage. There is no evidence that the driving of the train, the state of the train, the signalling system or the track contributed to the derailment. An Emergency Direction and an Engineering Regulatory Notice have been served on Metronet BCV in relation to storage of materials on site, and Metronet has taken action with Balfour Beatty to ensure that this issue is properly addressed in the future. This follows repeated demands by LU over the past year for greater vigilance on the part of all three Infracos with regard to storage practices.

### **Journey Time**

Despite the disruption caused by the above incidents, excess journey time for the year to date averages 7.61 minutes, just 0.14 minutes higher than the target. If the effect of the Metronet strike is excluded then the average falls to 7.36 minutes, within the 7.47 minute target.

Three lines – the Metropolitan, East London and Northern – are currently meeting their journey time targets, and if the strike effects are excluded the number meeting target rises to six. The most significant variances from target are on the Central line, reflecting the impact of the derailment described above, and on the Circle & Hammersmith where stock and staff shortages have persisted.

### **Train kilometres and percentage of schedule**

Actual results for the first 6 periods show kilometres operated at 174,000 less than budget and percentage of

schedule 0.7% below budget. The Metronet strike is estimated to have caused the loss of some 244,000 train kilometres, equivalent to 0.7 per cent of the year to date schedule so, as with journey time, exclusion of the strike losses brings overall performance back on target. Only the Northern and Waterloo & City lines have met their percentage of schedule targets to date, but if the strike losses are excluded then the District, East London, Metropolitan and Piccadilly lines have also met target. The Northern is the only line to have met its target in each of the first six periods of the year.

Causes of the Bakerloo line's shortfall against its target include rolling stock and staff shortages, train radio failures and disruptive incidents on the Network Rail section, notably a loss of signal mains at Willesden Junction which affected services from the evening of 6 May to mid-afternoon the following day and a loss of signal control at Wembley on 30 May.

In addition to the derailment described above, the Central line service was severely reduced in the afternoon and evening of 12 September as train operators refused to drive trains on the grounds of health and safety following an incident at Holland Park and subsequent discovery of items that had fallen from a train.

Track and signalling incidents continue to disrupt the Victoria line. A speed restriction caused by a defect on the crossover at Brixton severely limited Victoria line services for 4 days from 19 – 22 April, during which time only some 70% of schedule was operated and the line suffered extensive disruption on 12 and 13 June as a special service was introduced due to a further track defect at Brixton, following which an early shutdown of the line was required in order for repair work to be undertaken.

The Circle & Hammersmith was the only line to record sub-90% performance with stock and staff shortages being the most persistent causes of service losses over the first half of the year. The line was also badly affected by the extreme weather on Friday 20 July that saw parts of London receive in one day more than the average monthly July rainfall. This caused numerous station closures due to back flooding from the London main drainage system affecting the network at a number of locations, and some train service suspensions as waterlogged tracks affected the operation of signalling systems

### **Safety**

There have been no accidental customer fatalities in the first half of the year. The total of 69 customer major injuries means that the target rate of 0.14 major injuries per million passenger journeys is being achieved.

In the last two 4-week periods there has been an encouraging reduction in the number of signals passed at danger (SPADs).

### **Financial Results**

The second quarterly update of the financial forecast shows a reduction of £174 million in net activity cost compared with the budget. The main causes of this variance are strong revenue performance reflecting the increased demand described above and reduced performance payments to Infracos reflecting the strike, other availability abatements and delays in Metronet's stations programme. Savings in traction power costs and release of unallocated risk provision have also contributed to the reduced cost.

### **Asset Performance**

Rolling stock mean distance between failures (MDBF) has on average shown little change over the first half of this year. Northern line performance continues to disappoint with an average MDBF of little more than 5,000 km, in contrast to the similar Jubilee line fleet which is averaging well over 12,000 km. The Bakerloo line fleet has shown a recent deterioration in reliability and this is being pursued with Metronet fleet staff.

The average number of delays per period caused by Signal or Points failures has been lower over the first 5 periods of this year than for the year 2006/07, with improvements on the JNP and SSL lines outweighing an increase on BCV. Comparisons of track related delays are distorted by the high number on SSL in early summer 2006 due to the rail de-stressing issue; however with the exception of the Victoria and Northern lines trends are generally stable or improving.

Excluding planned works, escalator and lift availabilities have averaged 98.7% and 98.8% respectively over the year to date. Major lift works were completed at Regent's Park and the station reopened in June after an 11-month closure. Following commissioning of two new lifts at Morden station in June there are now 48 stations served by LU that provide step-free access from street to platform.

### **PPP Contract Performance**

Total Lost Customer Hours (LCH) attributed to Infracos to date are above sum of the availability benchmarks in the PPP Contracts. Including incidents in abeyance, the Northern line's LCH are more than double the benchmark value, largely due to a signal failure incident in the Camden

Town area for which Tube Lines are disputing the quantum. The Victoria line's LCH are double the line's benchmark even after exclusion of the strike effect, mainly due to signalling and track faults. In contrast, the Piccadilly and Metropolitan, Circle & Hammersmith lines' LCH (excluding strike) are only some 45% of the respective benchmark values.

Engineering overruns have averaged 3 per week over the first half of this year, compared with an average of around 4 per week over the years 2005/06 and 2006/07.

By 31 March 2007 Tube Lines had completed all 31 station enhancements that they were contractually due to deliver. A further 16 Tube Lines' stations have been completed this year, taking them to the half-way point in their stations programme.

In contrast Metronet had only completed 28 out of 55 stations due by 31 March 2007. By the end of period 6 one further station had been declared delivered into service this year and there were 14 stations declared by Metronet but not yet agreed by LU. No more stations will commence until the funding position has been clarified.

### **Employee Attendance**

The first half of 2007/08 has seen the best sustained attendance rate for at least 10 years. In both Operations and Central Services the greatest improvement has been in long term absence, with both the average duration and number of cases of 28+ day absences decreasing.

**London Underground Period Performance Report**  
**Performance Scorecard - Period 6 2007/08**

2006/07 Actual	Measures	Reporting Frequency	Unit	Year to date			Annual Target	Year Forecast
				Actual	Budget	Variance		
<b>Customer Service</b>								
76	CSS Overall Evaluation	Quarterly	Score	78	78		78	
8.06	Excess Journey Time (Weighted)	Period	Minutes	7.61	7.47	(0.14)	7.47	
0.1	% Peak Train Cancellations due to ONAs	Period	%	0.2	0.6	0.4	0.6	
69,766	Kilometres Operated	Period	000's	32,502	32,675	(174)	71,336	71,162
94.5	% of Schedule Operated	Period	%	94.4	95.1	(0.7)	95.1	94.8
<b>Safety &amp; Security</b>								
0.15	Customer Major Injuries per million journeys	Period	No.	0.14	0.14		0.14	
17.2	Notifiable Crimes per million journeys**	Period	No.	15.0	17.0	2.0	17.0	
<b>Infrastructure</b>								
83	Project Delivery Milestones	Period	%	70	85	(15)	85	85
13.96	PPP Lost Customer Hours	Period	Million	10.86	7.22	(3.64)	15.64	
<b>Commercial</b>								
1,014.3	Passenger Journeys	Period	Million	489.3	465.7	23.6	1,048.0	1,084.0
77.9	Efficiencies	Quarterly	£m	44.5	39.0	5.5	80.5	89.8
1,128.8	Net Cost of Activities	Period	£m	446.8	577.2	(130.4)	1,228.6	1,054.7
1.2	Forecast Accuracy - Operating Expenditure	Annual	%				2.5	
10.6	Forecast Accuracy - Capital Expenditure	Annual	%				5.0	
<b>People</b>								
95.2	Attendance	Period	%	95.9	95.9		95.9	
63	ESS (People Index)	Annual	Index				64	
14,000	Headcount (FTE)	Period	No.	14,288	14,192	(95)	14,287	14,702
320	Temporary Staff > 12 months	Period	No.	276	317	41	317	317
19.5	Workforce Composition (Women)	Period	%	19.9	19.3	0.6	19.8	19.9
<b>Stakeholder</b>								
-2	Brand Tracker - Net Advocacy (Weighted)	Quarterly	Index	0	0		0	

\*\* Period 5 figures shown as period 6 not yet available

# **Section 1**

## **Service Performance**

**London Underground Period Performance Report  
To Period 6 2007/08  
Customer Satisfaction**

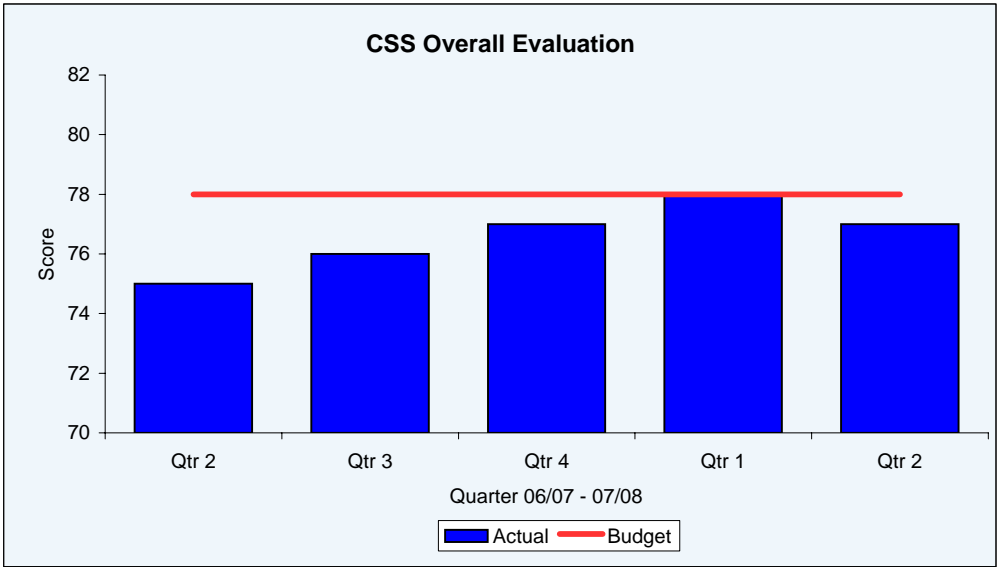
The second quarter's overall evaluation score was 77, one point down from the first quarter but much better than Q2 last year. The only statistically significant drop across the system was journey time, down from 81 to 80.

The journey time and wait for train scores (the key drivers of overall evaluation) are the same as in Q2 last year. However, several other scores have seen marked improvements over that period:

- Ease of hearing PA – up from 75 to 80
- Helpfulness of PA – up from 74 to 79
- Train driver announcements – up from 76 to 78
- Station staff availability when needed – up from 69 to 71

The good Q1 score means that the year to date overall evaluation is still on target at 78.

In line with standard practice on CSS, the days affected by the Metronet strike are not included on the survey.



**Customer Satisfaction Survey: System Service Group Scores**

	2006/07 Qtr 2	2006/07 Qtr 3	2006/07 Qtr 4	2007/08 Qtr 1	2007/08 Qtr 2
<b>Train Service</b>	76	75	76	77	76
<b>Safety &amp; Security</b>	80	80	80	81	81
<b>Staff Helpfulness &amp; Availability</b>	74	76	75	77	77
<b>Cleanliness</b>	73	73	73	73	73
<b>Information</b>	77	79	79	79	80

**London Underground Period Performance Report  
To Period 6 2007/08  
Demand and Revenue**

Passenger Journeys for the period are reported at 79.4 million; this is 3.6 million (4.7%) above the budget which anticipated 1048 million journeys for the year as a whole. It is currently expected that this figure will be exceeded and total journeys for the year look likely to be around 1084 million.

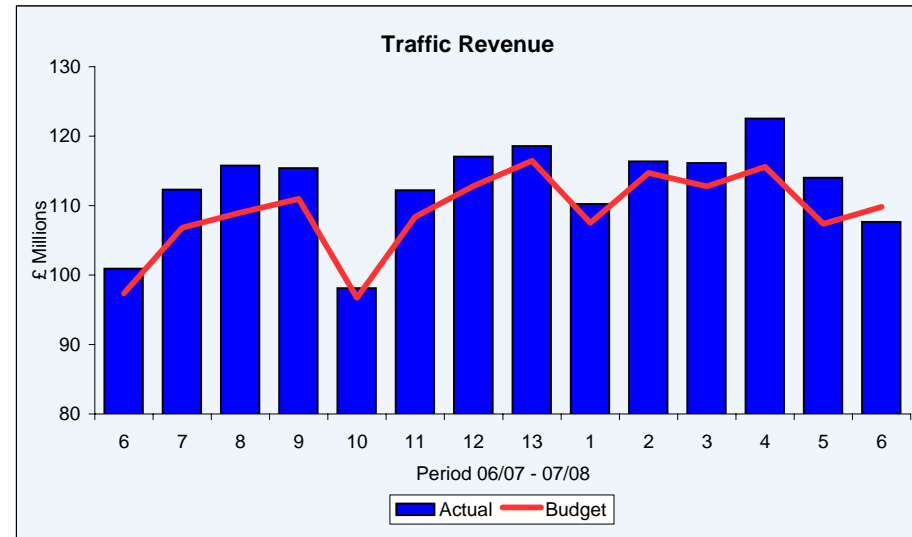
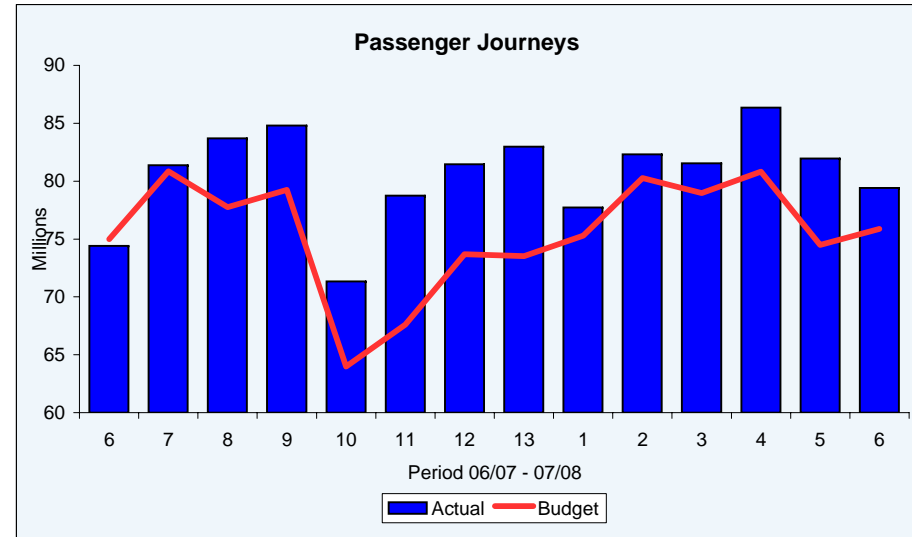
Traffic revenue was below budget this period by £2.2 million (2%), at £107.7 million. This period's revenue has been impacted by some £3.5 million due to the Metronet strike and also by a £4.7 million retrospective apportionment adjustment relating to 2006/07.

Following the January 2007 fares revision Ordinary ticket revenue saw a stepped fall to around the £2m per week mark, and has largely continued at this figure ever since. Reported Oyster Pay as you Go (PAYG) revenue in the first two weeks of the period was in line with expected seasonal demand in the quieter summer period at around the £9 million per week mark, rising in week 4 to nearly £10 million following the end of the summer holiday period. Corresponding PAYG sales were around £10 million and £11 million per week.

For products used predominantly by discretionary users (One & Three Day Off-Peak Travelcards), this period follows last period in showing a decline which reverses recent apparent growth, returning to the long term trend. Peak Travelcards sales have also fallen in recent weeks.

For Travelcard Seasons, weekly ticket sales have levelled out in the period. An issue causing variability in monthly tickets data since the start of the financial year has been resolved, however updated figures show a decline in the last couple of periods which continued in period 6.

The forecast has been increased by £20 million to £1570 million reflecting continuing demand growth.



**London Underground Period Performance Report  
To Period 6 2007/08  
Journey Time**

Excess journey time increased by 0.70 minutes this period compared to last. The effects of the Metronet strike action contributed 1.52 minutes and nullified improvements in trains and stations excess of 0.82 and 0.12 minutes respectively. If the effects of the industrial action are excluded then excess falls to 6.65 minutes which is the best level of performance achieved since period 10 of 2005/06.

The improvement in trains excess to its best level of performance since period 10 of 2005/06 was due, in equal parts, to a seasonal fall in customer demand (coupled with added strike disrupted travel) and a fall in the impact of train service incidents. The majority of lines recorded a period on period improvement in train service performance. The Jubilee, Bakerloo, Victoria and District lines all benefited from a fall in the impact of signal failures and recorded improvements in excess ranging from 0.82 to 1.00 minutes, while excess on the Circle & Hammersmith improved in line with a fall in the impact of staff absence / shortage.

At 1.80 minutes excess AEI was the lowest since period 11 of 2002/03, more than four and a half years ago, and 0.11 minutes lower than the previous period. This reduction in station congestion was due to a 3.5% fall in demand which was partly seasonal and partly due to the travel uncertainty caused by industrial action. Ticket purchase time remained unchanged at 0.35 minutes after three successive increases.

Unplanned closures excess increased by 1.62 minutes this period, including 1.52 minutes due to the effects of the Metronet industrial action. Other causes were Central line train operators refusing to take out trains on health & safety grounds following an earlier defective train (0.08 minutes) and disruption to the Sub Surface lines due to masonry on the track in the tunnel near Whitechapel (0.04 minutes).

At the mid-point of the year total excess journey time is averaging 7.61 minutes, which is 0.14 minutes adrift of the target. If, however, the effects of the Metronet industrial action are removed then excess for the year to date falls to 7.36 minutes, inside the target of 7.47 minutes.



**Excess Journey Time by Element (minutes)**

	Period 5	Period 6	YTD
Trains	4.84	4.03	4.54
Stations	2.26	2.15	2.26
Closures	0.37	1.98	0.82
<b>Total</b>	<b>7.47</b>	<b>8.17</b>	<b>7.61</b>

Scheduled Journey Time	36.71	36.71
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**Excess Journey Time by Line (minutes)**

	Period 5	Period 6	YTD	Budget	Variance
Bakerloo	5.57	5.23	5.18	5.10	(0.08)
Central	4.89	9.17	6.26	5.25	(1.01)
Victoria	5.80	5.60	5.86	5.55	(0.31)
Waterloo & City	1.10	4.36	2.05	1.88	(0.17)
District	5.52	8.15	5.87	5.65	(0.22)
Metropolitan	7.04	8.92	7.44	7.62	0.18
Circle & Hammersmith	8.19	7.93	7.18	6.60	(0.58)
East London	0.68	2.00	1.14	1.29	0.15
Jubilee	6.17	4.67	5.43	5.25	(0.18)
Northern	5.63	5.78	5.89	6.04	0.15
Piccadilly	6.17	6.44	6.19	6.03	(0.16)
<b>Network</b>	<b>7.47</b>	<b>8.17</b>	<b>7.61</b>	<b>7.47</b>	<b>(0.14)</b>

**London Underground Period Performance Report  
To Period 6 2007/08  
Trains in Peak Customer Service**

The overall percentage of peak trains run fell by 6.2% to 90.8% this period (90.9% excluding "non attributable" cancellations).

Industrial action by RMT staff employed by Metronet was the main cause of cancellations this period, affecting all lines apart from the Jubilee and Northern and accounting for 1,310 of the 1,483 'other' cancellations. Also in the 'other' category were 52 cancellations on the Central line due to a service suspension on 12 September after an electro pneumatic brake unit cover and negative shoe became dislodged from a train at Holland Park, and a total of 65 peak cancellations on the District, Metropolitan, Circle and Hammersmith & City lines following a fall of masonry in the tunnel near Whitechapel on 23 August.

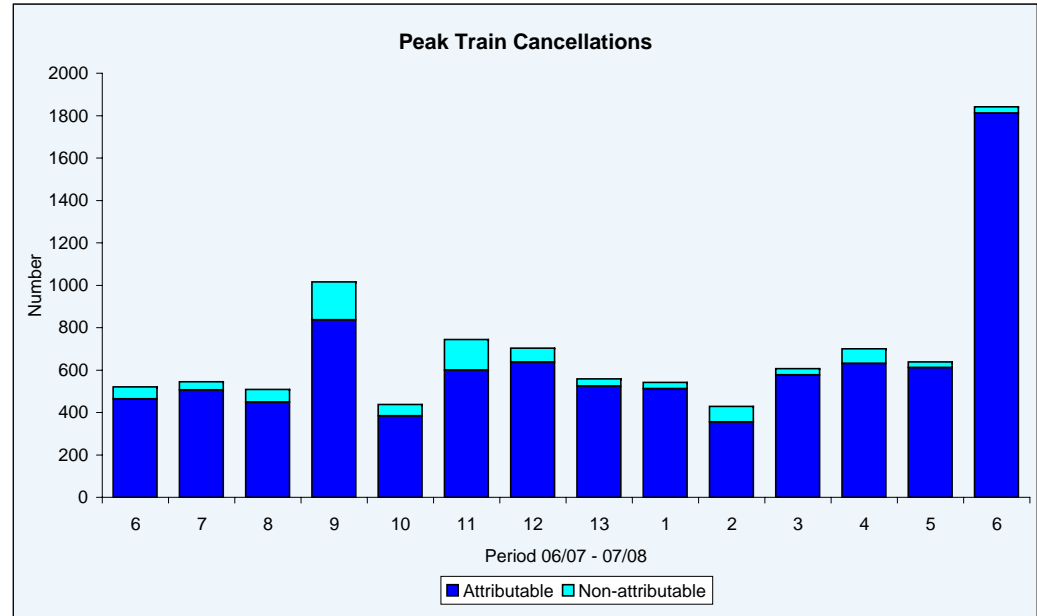
Operator Not Available (ONA) cancellations fell from 99 in period 5 to 33 this period due to improved operator availability on the Circle and Hammersmith & City lines.

Rolling stock related cancellations fell by 41 to 217. Poor availability of 'C' stock continued to be a problem causing 37 peak train cancellations on the Circle line and 5 on the Hammersmith and City. The Central and District lines also suffered from 33 and 41 peak cancellations respectively due to unavailable stock.

Cancellations due to signal failures also fell compared with the previous period. The most significant incident was at Camden Town (Northern line) on the morning of 21 August with a reduced timetable in operation for the remainder of the day.

The Piccadilly and Victoria line's track-related cancellations were caused by temporary speed restrictions at Arnos Grove and between Brixton and Stockwell respectively.

The principal "non attributable" incident was at Kings Cross affecting the Circle, Hammersmith & City and Metropolitan lines on 10 September when a male passenger collapsed and fell on to the eastbound track.



**Peak Train Cancellations by Cause - Period 6**

	Attributable					Non Attrib.	Total	% Run
	ONA	Stock	Signals	Track	Other			
Bakerloo	0	22	0	0	108	2	132	89.0
Central	0	54	4	0	311	1	370	87.2
Victoria	0	3	0	7	121	0	131	90.7
Waterloo & City	0	0	8	4	13	0	25	83.6
District	0	49	3	0	411	4	467	84.0
Metropolitan	1	13	4	0	214	3	235	86.8
Circle	15	37	4	0	87	7	150	71.8
Hammersmith & City	12	7	0	0	90	3	112	81.6
East London	0	0	0	0	27	0	27	88.2
Jubilee	0	5	0	0	7	1	13	99.3
Northern	1	19	20	0	2	2	44	98.7
Piccadilly	4	8	12	12	92	7	135	95.3
<b>Network</b>	<b>33</b>	<b>217</b>	<b>55</b>	<b>23</b>	<b>1,483</b>	<b>30</b>	<b>1,841</b>	<b>90.8</b>

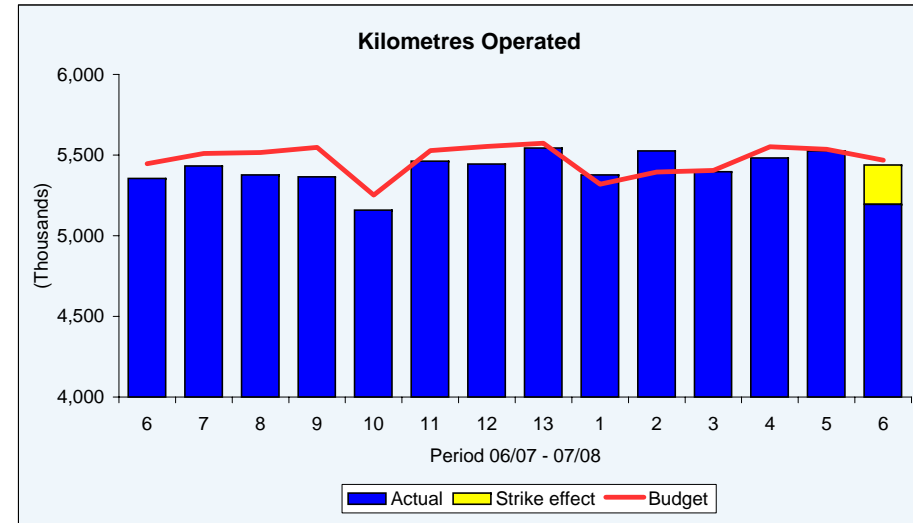
**London Underground Period Performance Report  
To Period 6 2007/08  
Train Kilometres and Percentage of Schedule**

The principal cause of the fall in percentage of schedule to 90.9% was the strike by Metronet staff which affected all lines apart from the Jubilee and Northern over the three days 3-5 September. The strike caused a loss of some 244,000 kilometres, equivalent to 4.3% of the period's schedule or 0.7% of the year to date schedule. Excluding these losses, performance for the period and year to date would be on budget.

Staff and stock shortages continued to affect the Circle & Hammersmith line, particularly in the first week of the period, although subsequent weeks showed some improvement.

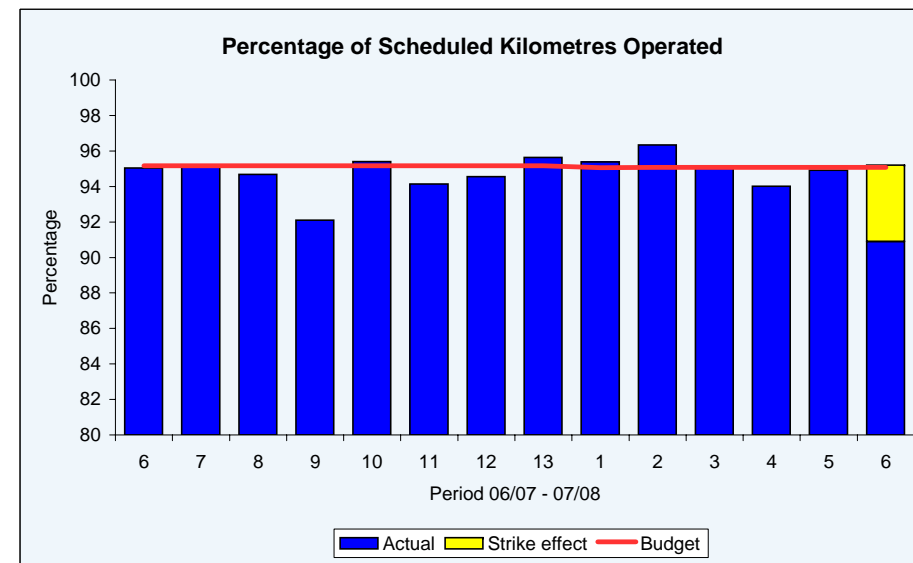
Following an incident at Holland Park and subsequent discovery of items that had fallen from a train the Central line service was severely reduced in the afternoon and evening of 12 September as train operators refused to drive trains on the grounds of health and safety.

The Northern line recovered from a poor first week, caused by a possession overrun and signal and points failures notably at Camden Town, to achieve its period budget for the sixth successive period.



**Percentage of Schedule by Line**

	Period 5	Period 6	YTD	Budget	YTD Var
Bakerloo	93.7	90.5	92.6	95.3	(2.7)
Central	97.0	89.6	95.1	96.6	(1.5)
Victoria	96.5	91.3	94.5	95.6	(1.1)
Circle & Hammersmith	82.0	81.6	87.0	90.5	(3.5)
District	96.3	88.0	94.8	96.0	(1.2)
East London	99.7	92.6	98.2	98.5	(0.3)
Metropolitan	97.7	89.2	95.8	96.0	(0.2)
Waterloo & City	98.7	86.9	97.1	95.7	1.4
Jubilee	95.3	95.9	95.7	96.4	(0.7)
Northern	95.6	94.2	95.0	93.5	1.5
Piccadilly	92.5	92.0	93.9	94.0	(0.1)
<b>Network</b>	<b>94.9</b>	<b>90.9</b>	<b>94.4</b>	<b>95.1</b>	<b>(0.7)</b>



# **Section 2**

## **Safety**

**London Underground Period Performance Report  
Safety Scorecard - Period 6 2007/08**

Measures	Reporting Frequency	Unit	Period 6			Year to Date			Annual Target
			Actual	Budget	Variance	Actual	Budget	Variance	
Audits - Station Operations	Period	%	n/a	70	n/a	71	70	1	70
Audits - Train Operations	Period	%	62	69	(7)	66	69	(3)	69
Confirmed Fires	Period	No.	8	16	8	88	95	7	206
Customer Fatalities	Period	No.	0	n/a	n/a	0	n/a	n/a	n/a
Customer Major Injuries	Period	No.	7	n/a	n/a	69	n/a	n/a	n/a
Derailments in service	Period	No.	0	0	0	1	0	(1)	0
Employee Major Injuries	Period	No.	3	n/a	n/a	15	n/a	n/a	n/a
Employee/Contractor Fatalities	Period	No.	0	0	0	0	0	0	0
Signals Passed at Danger (SPADs)	Period	No.	62	63	1	430	380	(50)	n/a
Lost Time Injuries (LTI)	Period	No.	29	48	19	235	288	53	625
LUSATS - Overdue Actions	Period	No.	1	0	(1)	n/a	n/a	n/a	0
Platform Train Incidents (PTI)	Period	No.	49	47	(2)	290	282	(8)	612
Regulatory Notices issued by HMRI	Period	No.	0	0	0	0	0	0	0
Section 12 Contraventions	Period	No.	0	0	0	4	0	(4)	0
Workplace & Work-Related Violence	Period	No.	124	n/a	n/a	844	n/a	n/a	n/a

Action plans are in place to address the weaknesses identified by the Train Operations Audits conducted this year.

There have been no accidental customer fatalities in the first half of the year. The total of 69 customer major injuries to date means that the target rate of 0.14 major injuries per million passenger journeys is being achieved.

In the last two 4-week periods there has been an encouraging reduction in the number of signals passed at danger (SPADs), reversing the upward trend seen earlier in the year. A number of reduction initiatives are in place including an improved SPAD investigation course, a signal sighting course, a train operators' communication plan, cause and effect of fatigue, consistent management approach and a SPAD DVD created in partnership with Operational Learning.

The LU Safety Action Tracking System (LUSATS) showed one overdue action at the end of period 6; this relates to Connect radio alarm operation.

Two of the four Section 12 contraventions received were in connection with re-opening of Regents Park station and works done by Metronet. The other two contraventions were both at Oxford Circus relating to Victoria line Upgrade works.

# **Section 3**

## **Financial Results**

**London Underground Period Performance Report**  
**Financial Summary to Period 6 2007/08**

2006/07 Actual £m	Activity	Year to Date			Full Year		
		Actual £m	Budget £m	Variance £m	Forecast £m	Budget £m	Variance £m
(1,414.7)	<b>Traffic Revenue</b>	(687.0)	(667.7)	(19.2)	(1,570.0)	(1,517.0)	(53.0)
(102.6)	<b>Secondary Revenue</b>	(51.9)	(60.7)	8.7	(120.0)	(132.4)	12.5
497.8	<b>Operations</b> Customer Services	243.1	239.7	3.4	536.6	527.4	9.2
46.6	BT Police	22.0	22.7	(0.7)	49.0	49.1	(0.1)
45.0	Operational Support	21.4	22.1	(0.8)	47.1	46.8	0.3
6.5	Operational Upgrades	6.8	6.6	0.2	16.7	14.3	2.4
1.6	Improvements	0.3	2.8	(2.5)	1.7	6.2	(4.5)
597.5		293.5	293.9	(0.4)	651.2	643.8	7.4
1,251.2	<b>Programmes</b> PPP	550.7	606.7	(56.0)	1,242.4	1,327.1	(84.8)
218.7	PFI	66.0	68.1	(2.1)	144.9	147.0	(2.1)
64.3	Traction & Utilities	25.2	28.8	(3.6)	57.7	74.5	(16.8)
7.6	NRA Expenditure	3.5	3.8	(0.4)	7.6	8.3	(0.7)
38.1	Management	17.4	16.1	1.4	36.1	34.0	2.1
3.7	Improvements	2.1	1.9	0.2	5.1	3.8	1.2
1,583.6		665.0	725.4	(60.4)	1,493.7	1,594.7	(101.0)
67.8	<b>Central Services</b> Support Directorates	35.8	38.5	(2.7)	90.2	88.0	2.3
40.5	Finance & Support Offices	11.8	10.9	0.9	26.0	24.1	1.9
122.9	Central Expenses	68.0	79.9	(11.9)	161.9	170.4	(8.5)
10.1	Improvements	5.1	4.8	0.3	19.6	10.5	9.1
241.3		120.7	134.1	(13.4)	297.7	292.9	4.8
48.2	<b>Risk</b>	22.7	38.9	(16.2)	52.4	85.0	(32.5)
(13.7)	<b>Capital</b> Property Sales	(30.0)	(32.2)	2.2	(64.6)	(52.3)	(12.4)
321.8	Expenditure	164.7	196.9	(32.2)	418.0	418.6	(0.6)
(132.6)	Recoveries	(50.9)	(51.5)	0.6	(103.8)	(104.8)	0.9
175.5		83.8	113.2	(29.5)	249.5	261.6	(12.1)
<b>1,128.8</b>	<b>TOTAL NET ACTIVITY COST</b>	<b>446.8</b>	<b>577.2</b>	<b>(130.4)</b>	<b>1,054.7</b>	<b>1,228.6</b>	<b>(173.9)</b>
(18.46)	<b>Traffic Revenue per Passenger Kilometre (p)</b>	(18.57)	(18.57)	0.0	(19.15)	(18.72)	(0.43)
28.45	<b>Operating Cost per Train Kilometre (£)</b>	27.98	30.54	(2.55)	28.79	30.60	(1.81)

**Key**  
● Net Cost Variance >=15% below or above budget OR >=£5m below or above budget; Revenue >= 3% below budget  
● Net Cost Variance is 5-15% below or above budget OR £1m to £5m below or above budget; Revenue up to 3% below budget  
● Net Cost Variance <= 5% below or above budget OR <= £1m below or above budget; Revenue on or above budget

**London Underground Period Performance Report  
To Period 6 2007/08  
Financial Results - Comments on Variances from Budget**

The overall **net activity cost** is £130 million less than budget to date and is forecast to be £174 million under budget by year end. The principal variances are as follows:

Continued demand growth is reflected in higher than budgeted **traffic revenue**. Trends are shown and discussed on page 7.

Conversely **secondary revenue** is below budget; income from the CBS advertising contract is lower than assumed due to loss of advertising space and over optimistic market growth assumptions. Some other contracts including vending were terminated after the budget was prepared.

The largest cost variance is in **PPP costs**, the principal reasons being:

- poor availability performance on the Victoria, District and Northern lines
- speed restrictions on the Metronet-maintained section of the Piccadilly line
- the Central line derailment
- the Metronet strike
- Further delays to the Metronet stations programme

Substantial savings have been made in **traction power** costs through the flexible procurement strategy and favourable market conditions.

In **central expenses** there are savings in bank charges, bad debts, insurance and other costs.

The **risk** budget is phased evenly but only drawn down as risks materialise. All unallocated risk has been released from the forecast.

Rephasing of **property sales** between this year and next has increased this year's expected sale proceeds.

**Capital expenditure** is below budget to date but the shortfall is forecast to be recovered by year end. This is largely due to rephasing of expenditure on the congestion relief, accessibility and operational accommodation programmes.

# **Section 4**

## **Asset Performance**

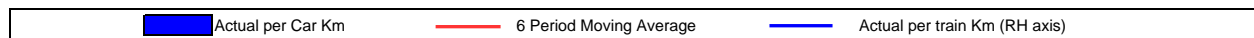
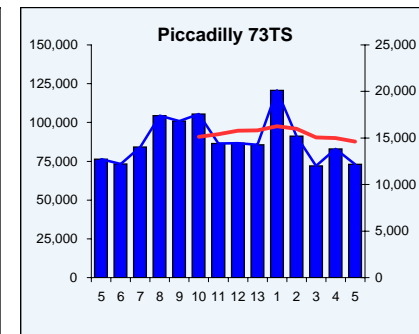
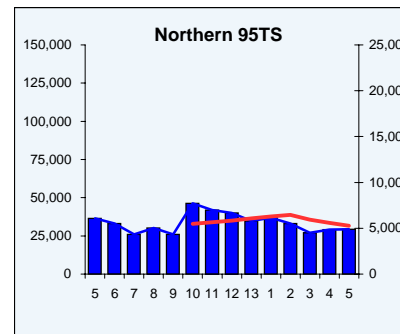
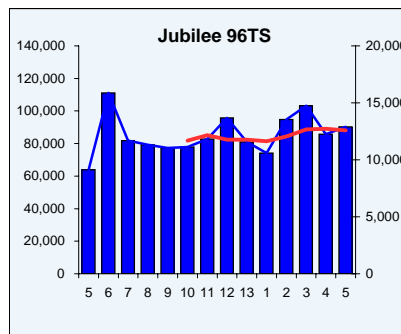
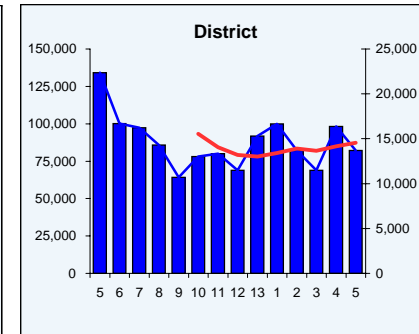
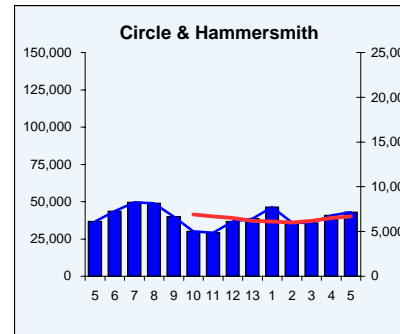
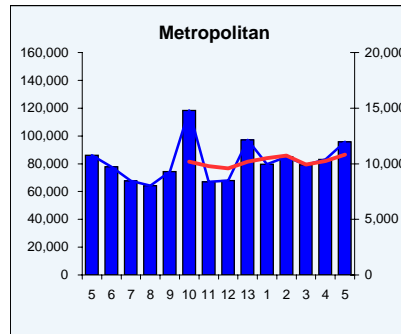
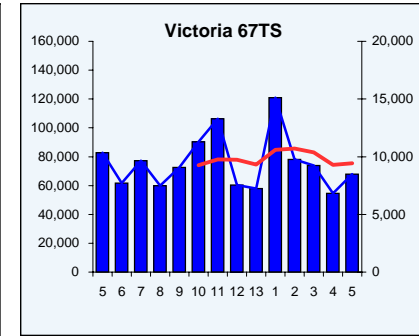
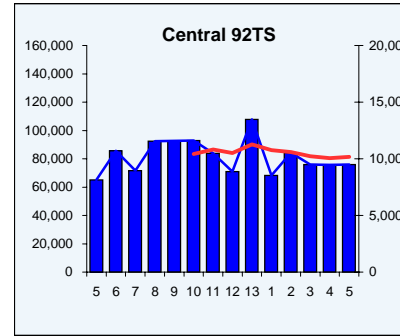
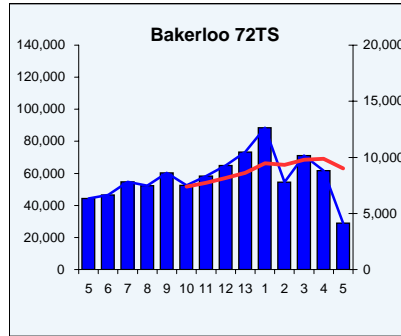
**London Underground Period Performance Report  
To Period 6 2007/08  
Rolling Stock Mean Distance Between Failures**

Note that MDBF figures are reported a period in arrears by which time most incidents attributed to the Infracos have been agreed. Each graph expresses MDBF per car km on the LH axis and per train km on the RH axis.

The Bakerloo line's rolling stock reliability has fallen significantly and is of some concern, especially in light of the rise in reliability seen at the end of last year. On the Central line performance remained level. As with last period there are a number of issues that are a concern; the number of traction motor failures has increased again and availability of rolling stock for peak service was poor. This was caused by a high number of units requiring casualty maintenance as well as the train that derailed at Mile End. Reliability of the Victoria line stock has picked up a little from last period. Improvements were seen in ATC, doors and traction.

Metropolitan line performance has improved this period. The improvement has primarily been achieved through a reduction of failures in Comms and bogie/suspension system. The Circle & Hammersmith stock has shown a small improvement in reliability. Though the improvement is small there are a number of quite positive signs. The fleet only suffered a single door failure and both brakes and traction faults were halved. These are generally the areas that cause the fleet the most problems. The trend of District line performance is level at just below 15000 train km. The reason that reliability has fallen since last period is due to continued problems being experienced with new replacement brake pressure monitoring switches. The fleet staff are currently working with the manufacturer to resolve this issue.

The Jubilee line reliability remains good and slightly up on last period. The small peaks experienced in OPO CCTV and door faults have returned to normal levels. The Northern Line reliability remains at a similar level to last period. One good point to note is that door failures have reduced, though still high. This suggests that mitigation work being carried out is having an effect on their reliability. Unfortunately failures occurring in other areas, particularly traction failures, have risen negating the improvement in the doors. Performance of the Piccadilly line over the last few periods has been lower than at the end of last year. The fleet suffered a higher number of door failures than is characteristic for this line. Other systems such as communications and fault recording equipment have experienced small peaks.



**London Underground Period Performance Report  
To Period 6 2007/08  
Signals & Points Related Delays > 2 minutes**

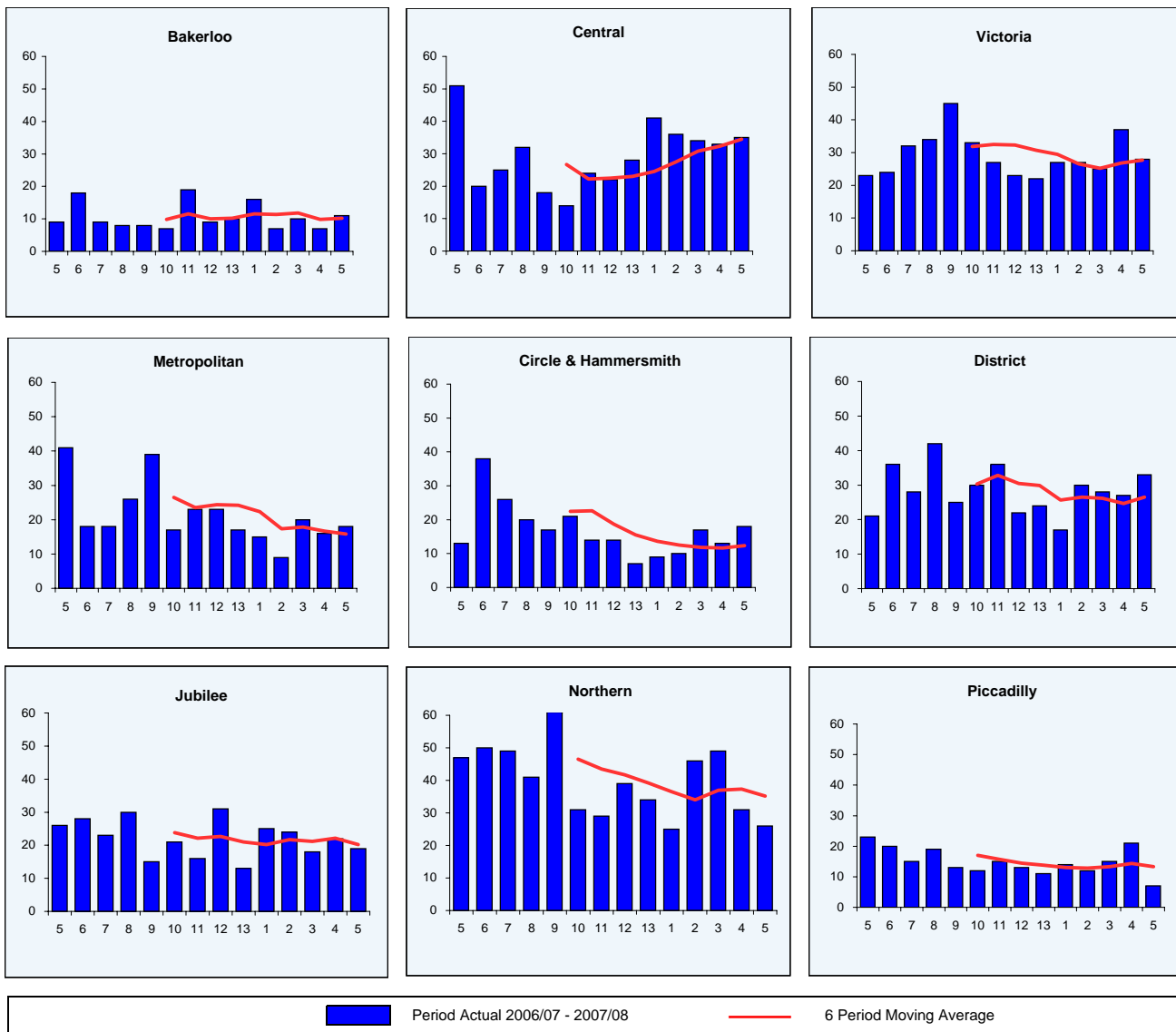
The Signals graphs report one period in arrears, and hence aligns with the Asset Performance Review Meeting (APRM) reports as well as giving a more accurate reflection on performance due to the correct attribution of causes of delays.

The charts show a rising trend in failures for District, Circle & Hammersmith, Central and Victoria Lines and a downward trend for the Northern, Jubilee and Piccadilly Lines.

**BCV** - Infraco data points to increases on the Bakerloo line (expired lamps and points), Central Line (interlocking) and Victoria Line (coincidence circuits). Trends and updates on the improvement plans were discussed further at the Asset Performance Review Meeting (APRM).

**SSL** - Points, track circuits and interlocking machine reliability appears to have improved, although there is an increase in the trainstop service delay failures and 'no defect found' incidents for this period.

**JNP** - Due to lack of root cause trend information in the APRM report the reasons for the downward trend cannot be explained by the data supplied and it will therefore be discussed at the APRM.



**Note:** Figures reflect the number of service disruptions of 2 minutes or more attributable to Infracos

**London Underground Period Performance Report  
To Period 6 2007/08  
Track Related Delays > 2 minutes**

*The Track Graphs report one period in arrears, and hence aligns with the Asset Performance Review Meeting (APRM) reports as well as giving a more accurate reflection on performance due to the correct attribution of causes of delays.*

The Bakerloo line remained level with the last period with only two delays, one being caused by part of a broken rail key obstructing a train stop causing a minor delay at Paddington, and 15B points at Queen's Park failing to reverse due to expansion gap problems.

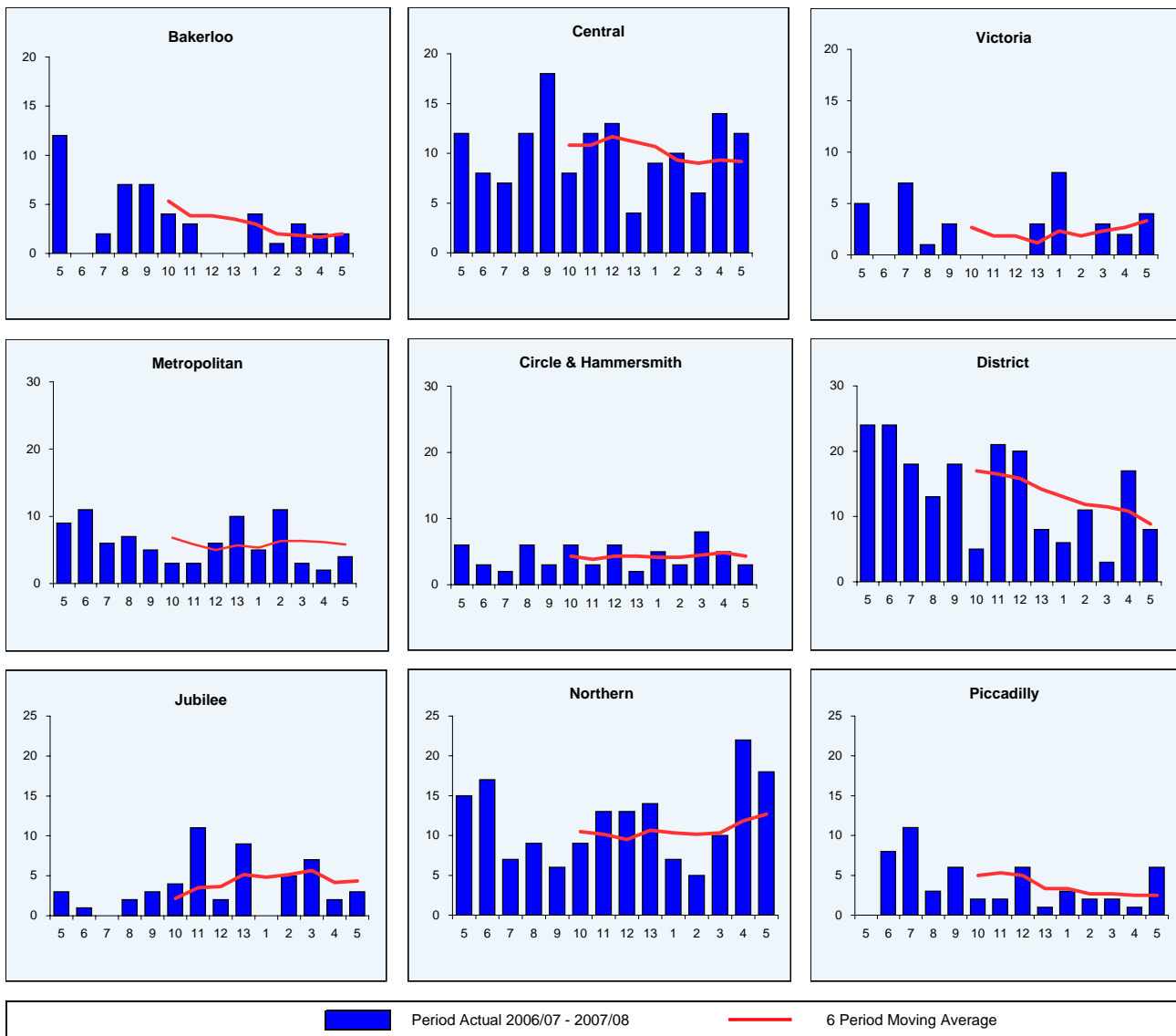
The Central line reported a slight decrease in delays on last period, 10 of these delays resulting from temporary speed restrictions (TSRs) implemented following the identification of rail defects. The Victoria line showed a small increase with 4 track attributable delays. These were all based around block joint failures resulting in track circuits going down, two of these failures being caused by scaling around the joints.

On the District line 6 of the 8 delays were as a result of the implementation of TSRs. These were due to a cracked wing rail near Triangle Sidings, a broken crossing nose between Earl's Court and Gloucester Rd, installation of a new crossing near Ealing Common, a cracked wing rail over 2A points near Earl's Court, a 2m twist fault between Ealing Common and Acton Town and a cracked fishplate between Becontree and Upney.

The Jubilee line had 3 TSRs implemented because of a cracked wing rail on 40B points at Neasden, a rail defect at Baker Street, and also a crack on the crossing on 11A points at Baker Street.

The Northern line's 18 track related delays included 16 due to TSRs being implemented following the identification of rail defects.

On the Piccadilly line there was a significant increase over recent periods, with 6 delays attributable to track. Two of these resulted from TSRs being implemented as a result of rail defects. Other incidents were a speed restriction at Bounds Green following poor track condition, replacement of a bolt on a block joint at Arnos Grove, a delay to a train departing Cockfosters due to a set of points failing to lock, and finally a train being front tripped arriving at Hammersmith, although no obstruction was found.



**Note:** Figures reflect the number of service disruptions of 2 minutes or more attributable to Infracos.

## London Underground Period Performance Report To Period 6 2007/08 Escalator Availability

### BCV

Two refurbishments – Piccadilly Circus nos 5 and 10 – have been completed so far this year and work is underway on nos 6 and 11 at the station.

Bank no 8 has recently returned to service after a lengthy outage during which extension of life works, including step chain replacement and remedial works, were completed. Similar work is now taking place on no 10.

### JNP

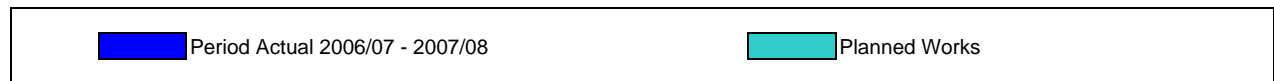
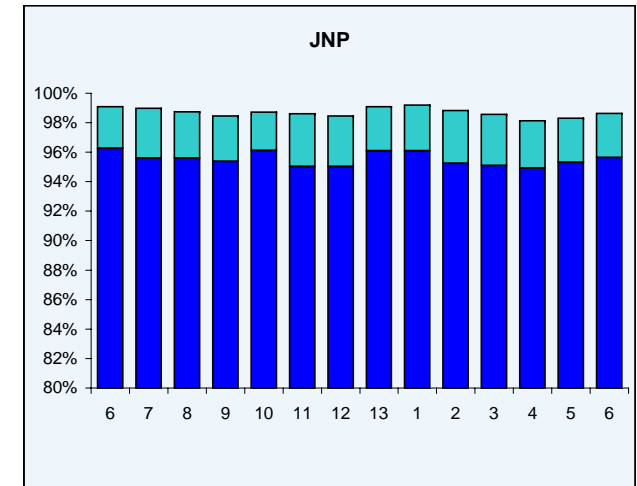
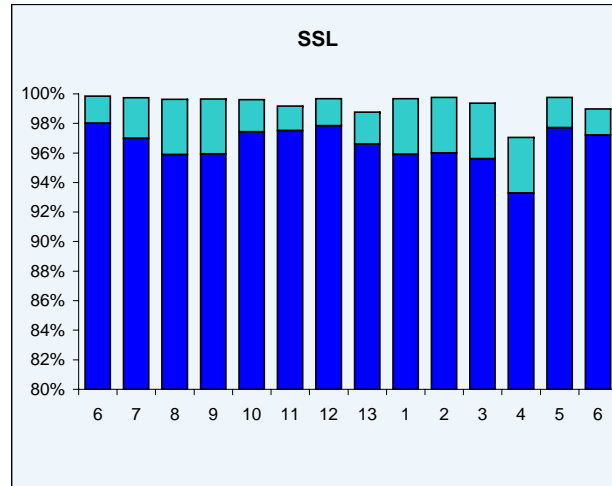
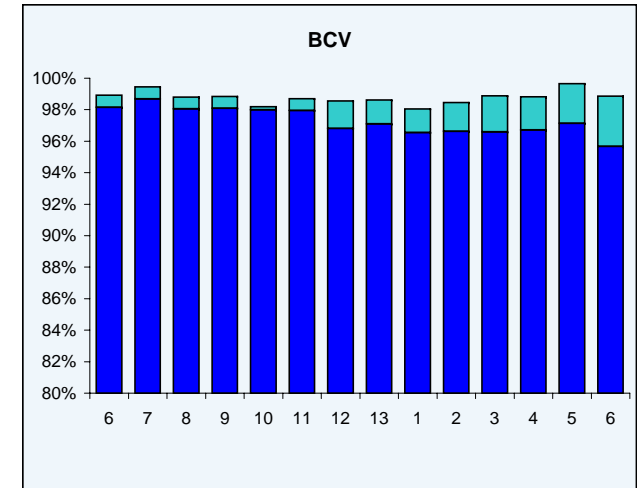
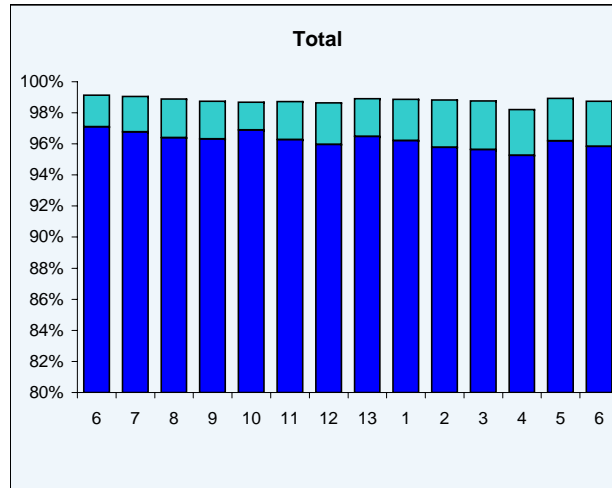
Availability excluding planned works has averaged 98.6%.

Nine refurbishments have been completed so far this year, along with shorter duration planned works on a further 8 Jubilee Line Extension machines.

### SSL

The programme of refurbishment of Embankment escalators 1-4 continued with nos 1 and 4 completed this year and no 2 in progress (no 3 was completed last year).

Faults on several machines at Kings Cross depressed the period 4 result.



## London Underground Period Performance Report To Period 6 2007/08 Lift Availability

**BCV**

Regent's Park station reopened in period 3 following an 11-month closure for station modernisation and replacement of the two lifts.

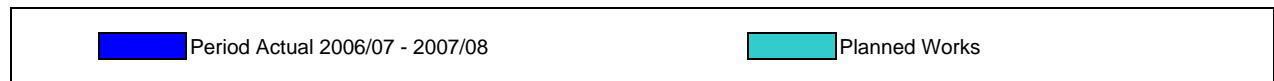
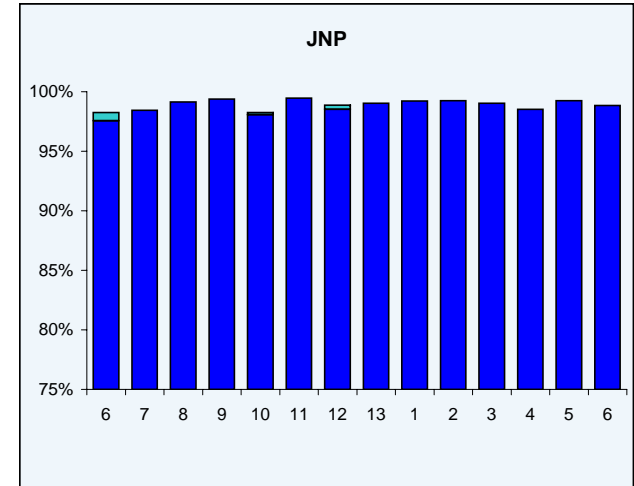
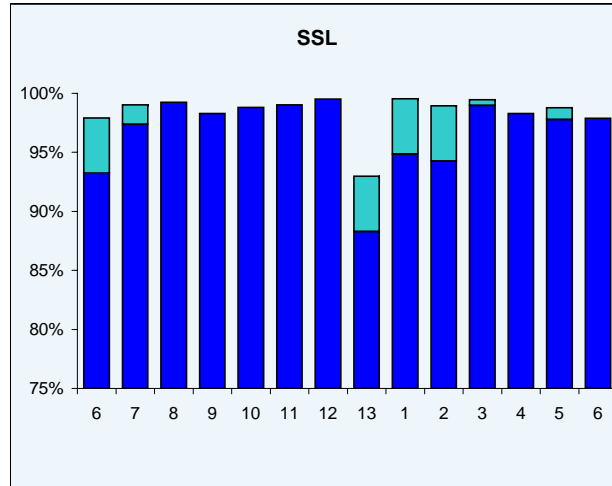
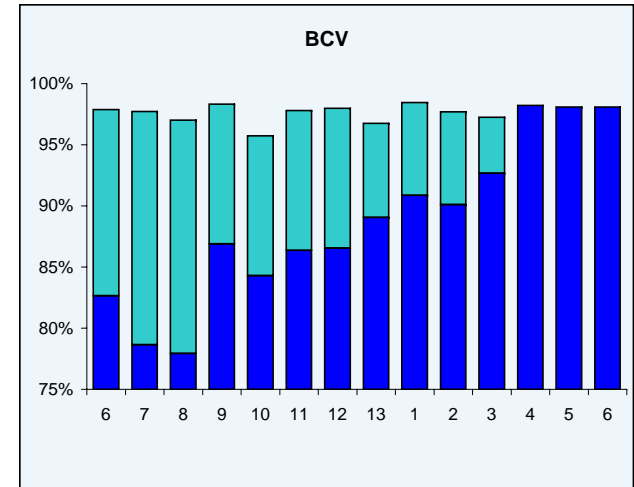
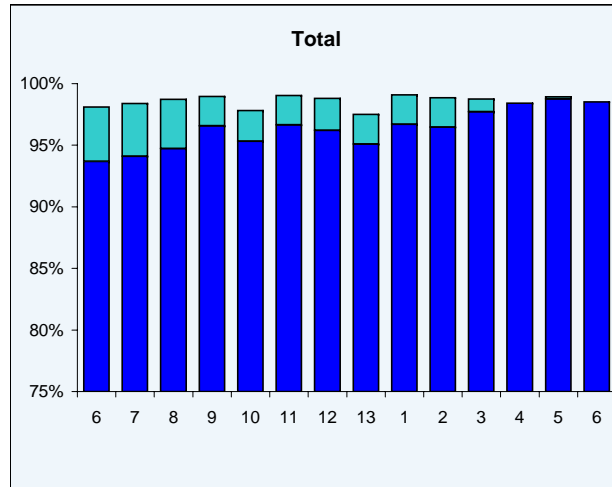
**JNP**

Since commissioning in June the two new lifts at Morden have recorded availabilities of 98.2% and 99.8% respectively.

**SSL**

Work was undertaken at Gloucester Road in periods 1 & 2 to replace the lift car door drive components, thyristor drive and upgrade the circuit breakers.

Failures at Earl's Court and Fulham Broadway depressed the result in period 13 of last year.



# **Section 5**

## **PPP Contract Performance**

**London Underground Period Performance Report  
To Period 6 2007/08  
PPP Performance vs Availability Benchmark**

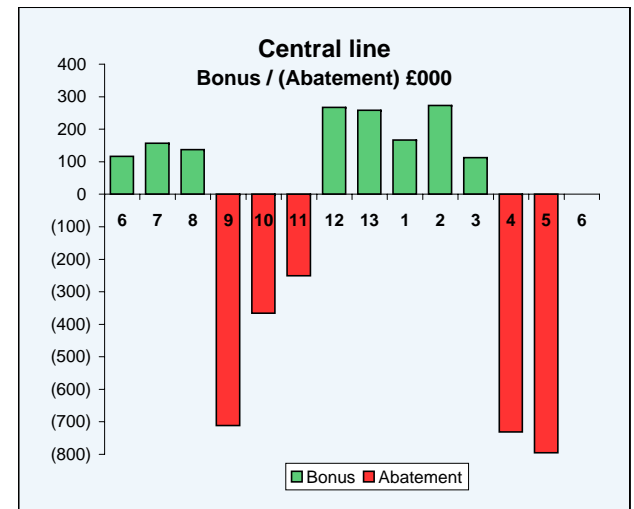
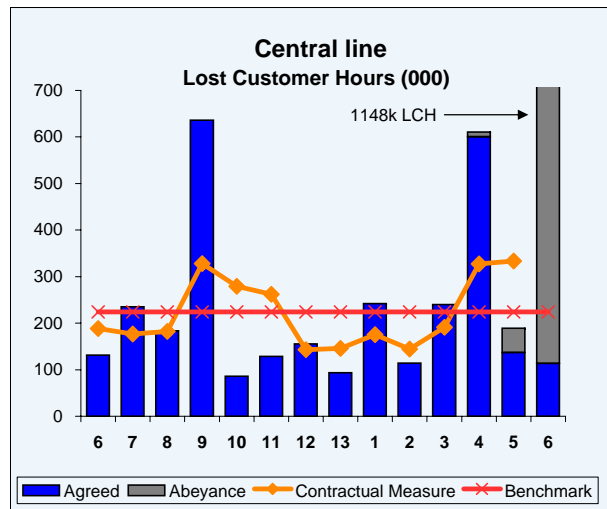
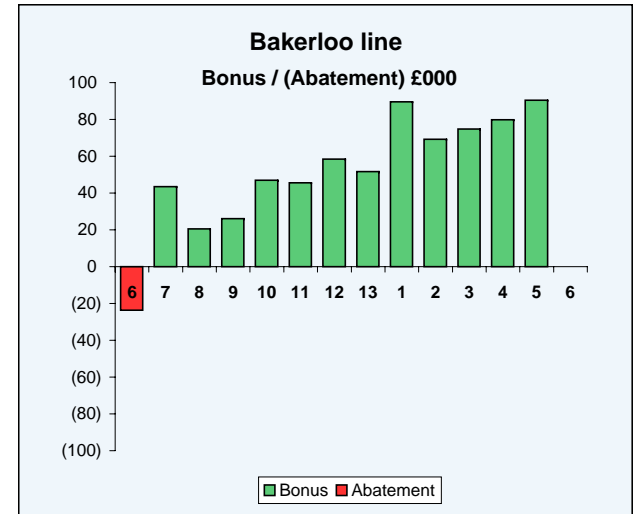
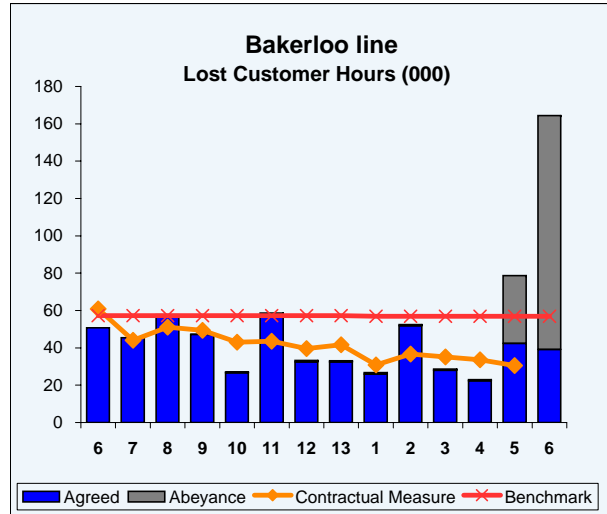
**Metronet BCV**

**Bakerloo line**

In 2006/07 agreed availability was 10.8% better than benchmark. In 2007/08 agreed YTD availability is 38.8% better than benchmark. In period 5 the largest item in abeyance is a signal failure at Queens Park. In period 6, the largest item agreed was a train delay due to a defective control governor at Edgware Road. The largest item in abeyance is a full line suspension due to industrial action by Metronet staff.

**Central line**

In 2006/07 agreed availability was 13.3% better than benchmark. The peak in period 9 was due to the failure of the central control system at Wood Lane following loading of a new timetable. In 2007/08 the agreed YTD availability is 7.7% worse than benchmark. Period 4 includes the Mile End derailment. In period 6, the largest agreed item was a signal failure due to track circuit failure at Notting Hill Gate, while the largest item in abeyance is a Full Line Suspension due to industrial action by Metronet staff.

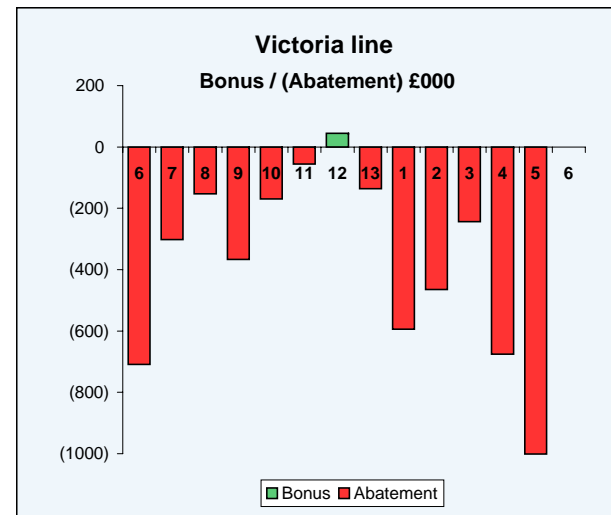
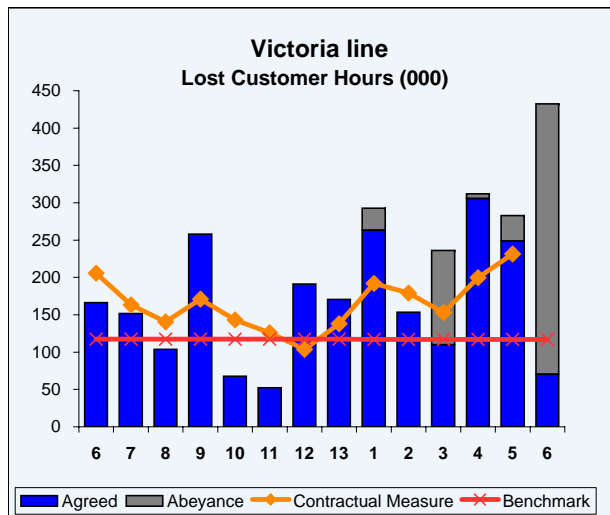


## London Underground Period Performance Report To Period 6 2007/08 PPP Performance vs Availability Benchmark

### Metronet BCV

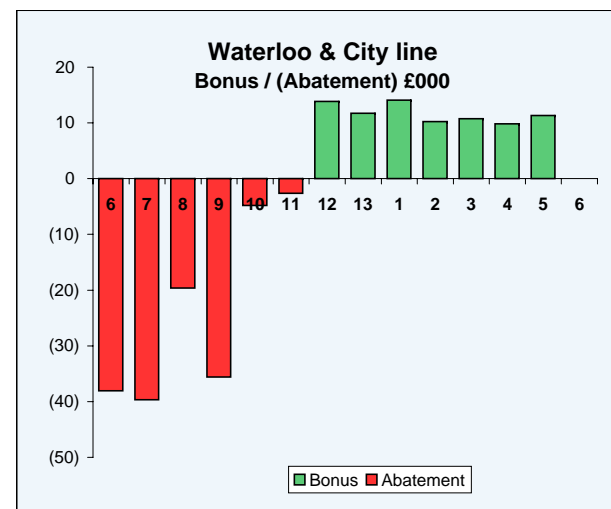
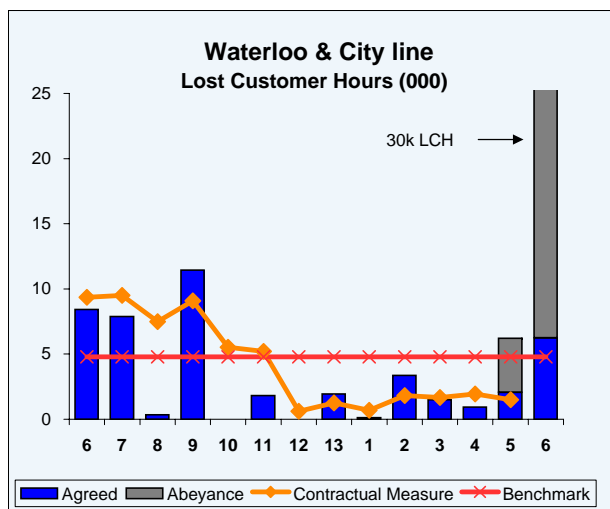
#### Victoria line

In 2006/07 agreed availability was 26.7% worse than benchmark. In periods 9 and 12 the largest agreed items were partial line suspensions (PLS) due to points failure at Seven Sisters and signal failure at Oxford Circus respectively. In 2007/08 availability has been persistently worse than benchmark, with agreed LCH currently 63.6% worse than benchmark. Signal and track faults have been the main causes of poor performance. In period 6, the largest agreed item is a temporary speed restriction at Brixton while the largest item in abeyance is a full line suspension due to Metronet industrial action.



#### Waterloo & City line

In 2006/07 agreed availability was 29.2% worse than benchmark. In period 9 the largest item agreed was the line closure due to dust in both tunnels. In 2007/08 agreed YTD availability is 50.6% better than benchmark. In period 6, the largest agreed item is a Full Line Suspension (FLS) due to a train hitting an obstruction on the track. The largest item in abeyance is a FLS due to industrial action by Metronet staff.



**London Underground Period Performance Report  
To Period 6 2007/08  
PPP Performance vs Availability Benchmark**

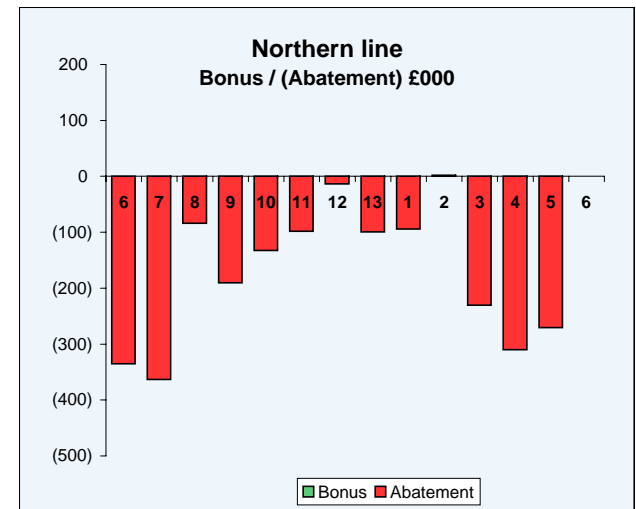
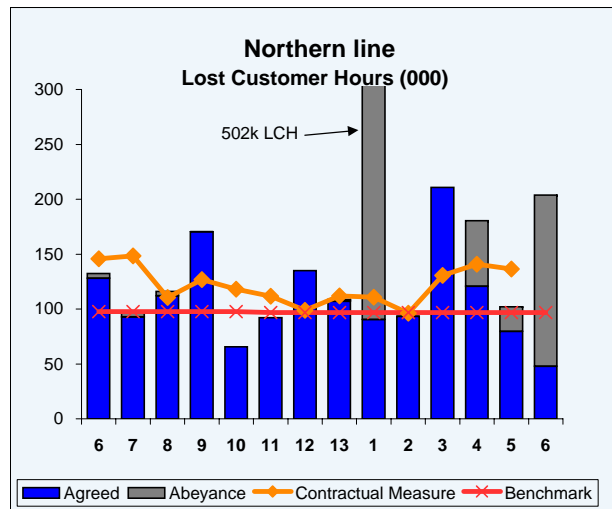
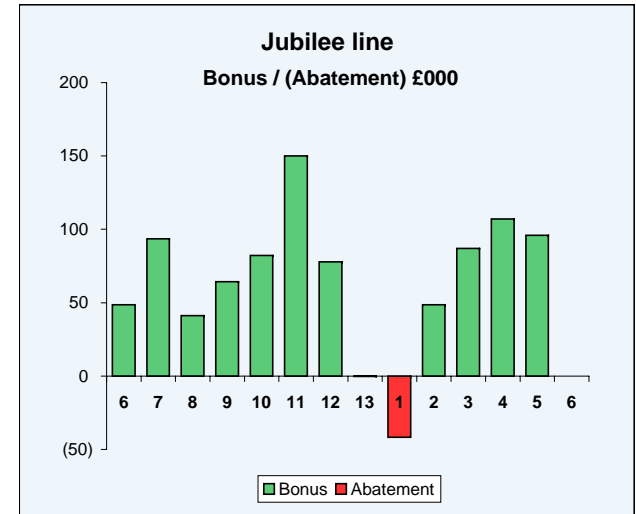
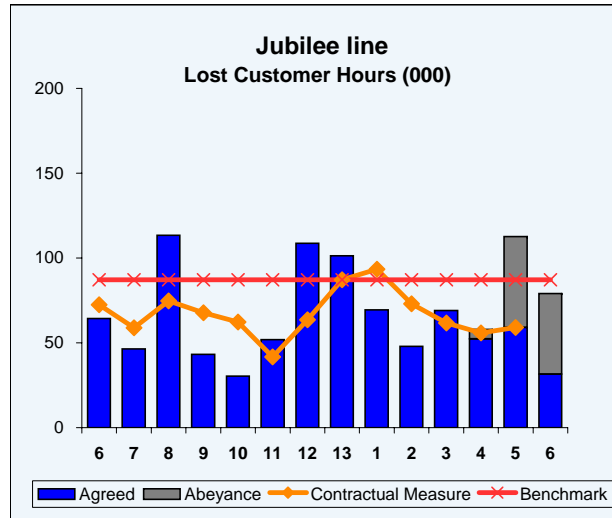
**Tube Lines JNP**

**Jubilee line**

In 2006/07 agreed availability was 20% better than benchmark. The peak in period 8 was caused by a signal failure at Finchley Road and that in period 12 was caused by an overrun of planned escalator installation work at North Greenwich. In 2007/08 agreed availability is 51% better than benchmark. The peak in period 5 is caused by a partial suspension of service between Waterloo and Finchley Road following a series of signal failures in the Green Park area. The largest agreed incident in period 6 was as a result of a track failure at London Bridge and largest incident in abeyance was as a result of a train withdrawn from service at Swiss Cottage.

**Northern line**

In 2006/07 agreed availability was 23% worse than benchmark. In 2007/08 agreed availability is 11% worse than benchmark. The high value in abeyance in period 1 is caused by multiple signal failures in the Camden Town area over 3 days. Tube Lines are disputing the quantum and the incident is at Contract Managers level in the dispute process. In period 6 the largest agreed incident was a train failure leaving Golders Green Depot and the largest incident in abeyance was as a result of a points failure at Camden Town.

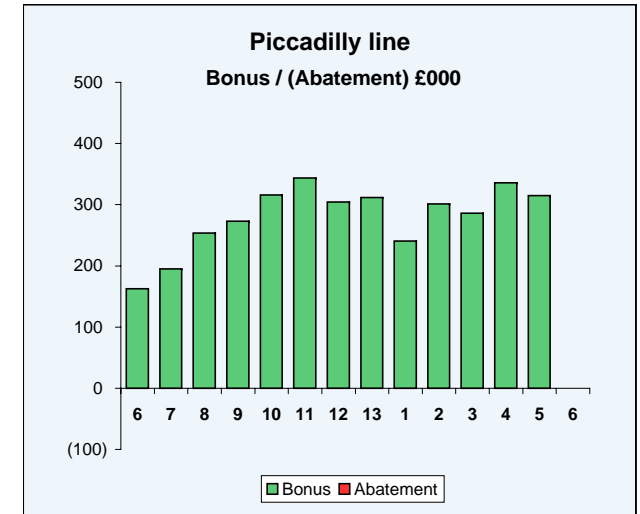
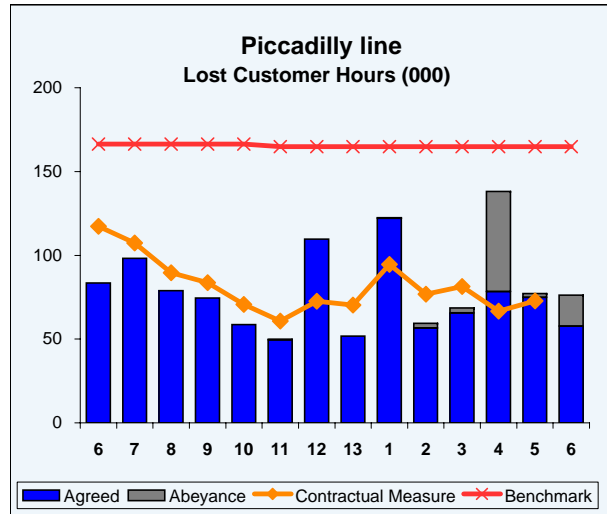


**London Underground Period Performance Report  
To Period 6 2007/08  
PPP Performance vs Availability Benchmark**

**Tube Lines JNP**

**Piccadilly line**

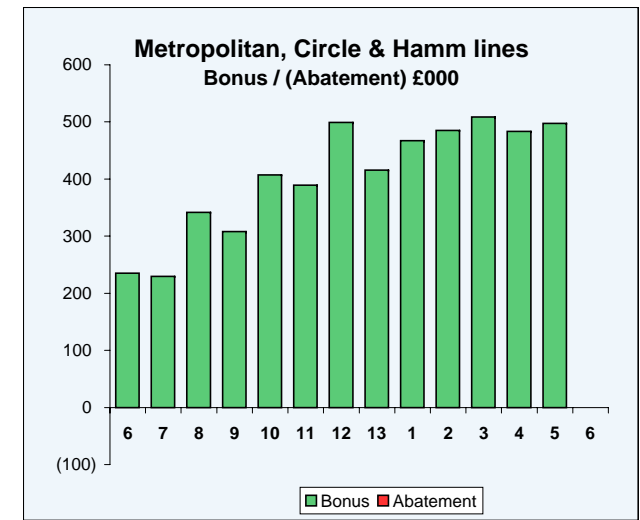
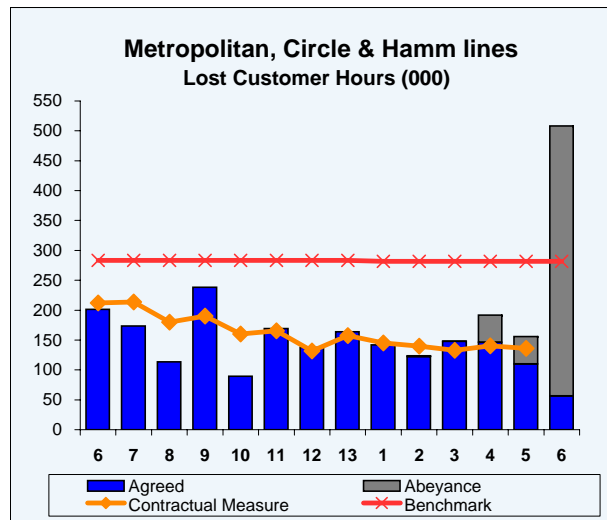
In 2006/07 agreed availability was 51% better than benchmark. In 2007/08 agreed availability has again remained consistently better than benchmark. During period 6 the largest incident agreed was a partial suspension of service in the Kings Cross area following a report of smoke on a platform. The largest incident in abeyance was a train door failure at Arnos Grove.



**Metronet SSL**

**Metropolitan, Circle & Hammersmith lines**

In 2006/07 agreed availability was 37% better than benchmark while the current 2007/08 YTD figure is 57% better than benchmark. The largest incident agreed by MRSSL in period 6 was a train delay and withdrawal at Hammersmith, due to defective batteries. The largest incident in abeyance is a full line suspension across the Metropolitan, Circle and Hammersmith lines due to Metronet industrial action.



## London Underground Period Performance Report To Period 6 2007/08 PPP Performance vs Availability Benchmark

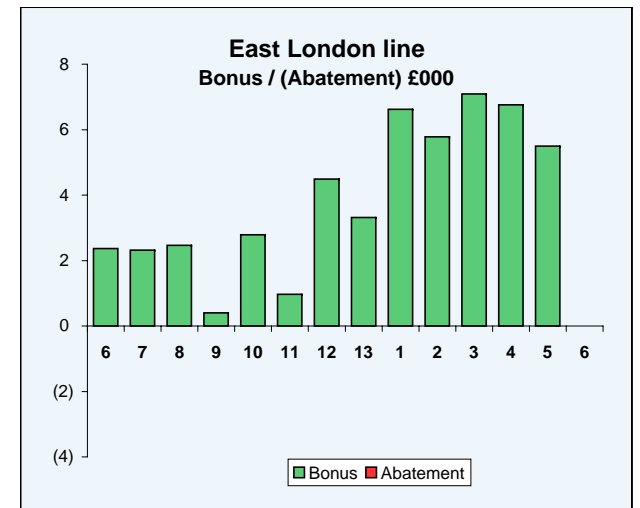
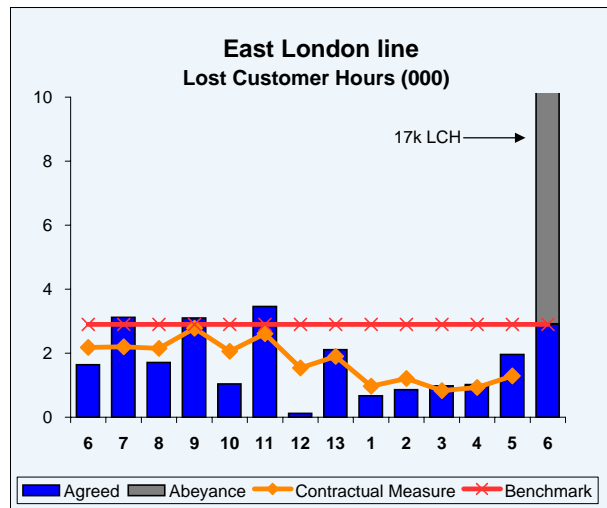
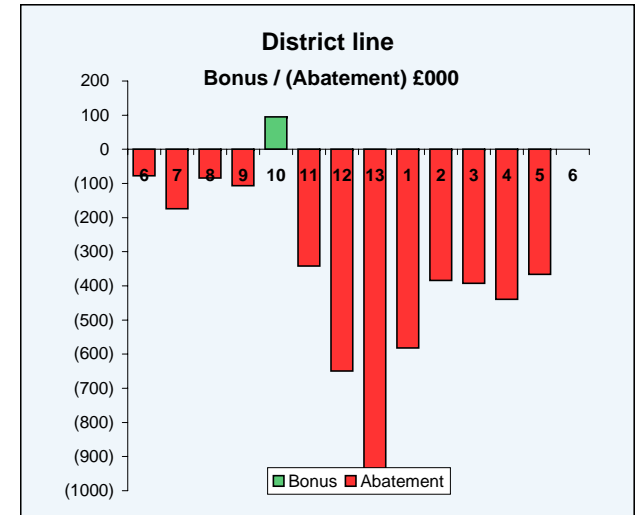
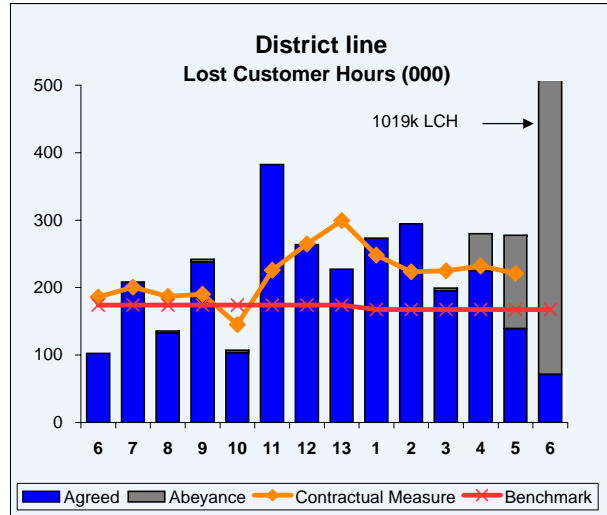
### Metronet SSL

#### District line

In 2006/07 agreed availability was 19% worse than benchmark with the peak in period 11 caused by a signal failure at Monument. The current 2007/08 YTD figure is also 19% worse than benchmark. Faults attributed to track, notably a speed restriction between Temple & Embankment, have been the highest cause of LCH. A delay at Hammersmith due to signal failure remains in abeyance from period 5. The largest incident agreed by MRSSL in period 6 2007/08 was a delay at South Kensington due to a tunnel telephone fault. The largest incident currently in abeyance for period 6 is a full line suspension due to Metronet industrial action.

#### East London line

In 2006/07 agreed availability was 29% better than benchmark while the current 2007/08 YTD figure is 52% better than benchmark. The largest incident currently in abeyance for period 6 is a full line suspension due to Metronet industrial action.

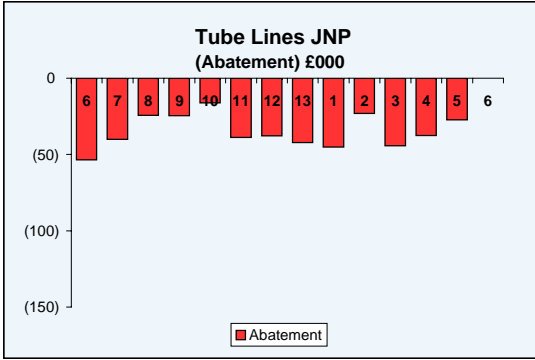
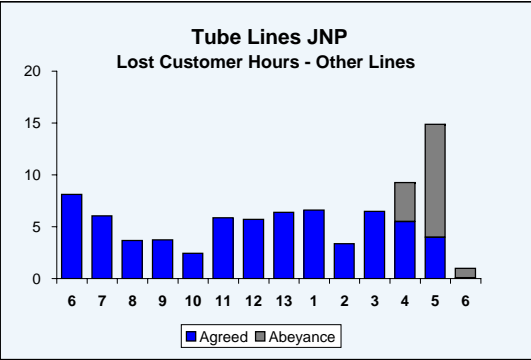
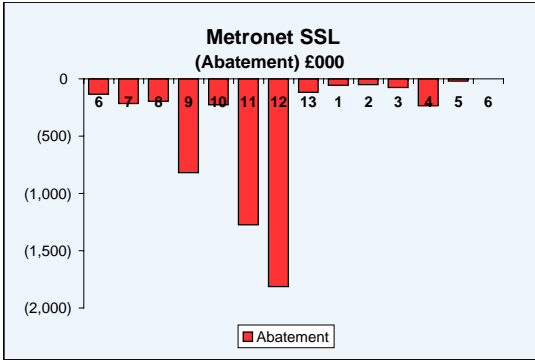
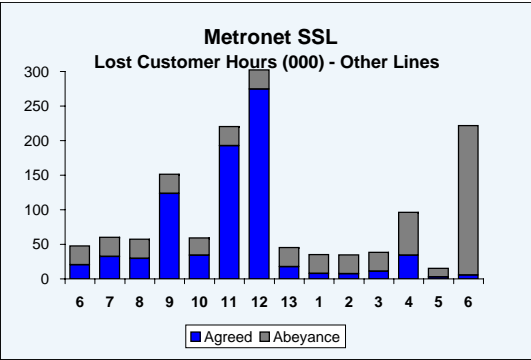
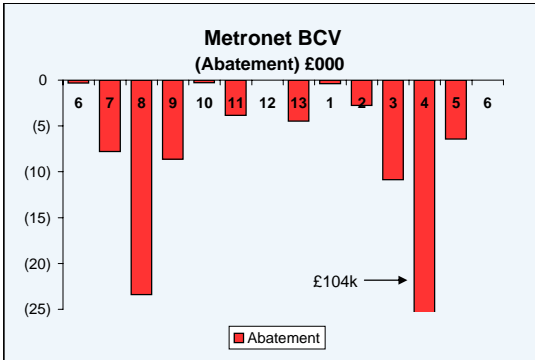
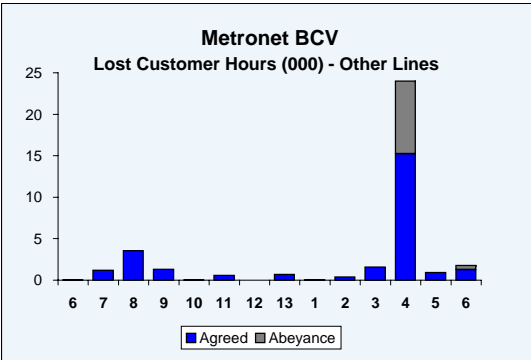


**London Underground Period Performance Report  
To Period 6 2007/08  
PPP Availability - Other Lines**

In abeyance in period 4 are District line platform closures at Victoria due to flooding. The high agreed LCH is due to closure of the District line platforms at Mile End following the Central line derailment.

The peaks in periods 11 and 12 are due to a temporary speed restriction between Barons Court and Hammersmith. In abeyance for period 6 is disruption to the Piccadilly line due to Metronet industrial action.

In 2007/08 the peak in period 5 was caused by a signal failure at Wembley Park and a train tripped at Neasden, both affecting the Metropolitan line.

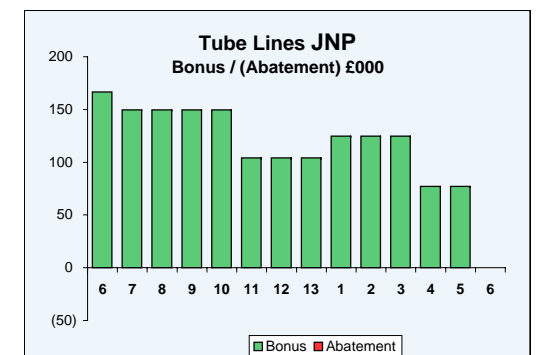
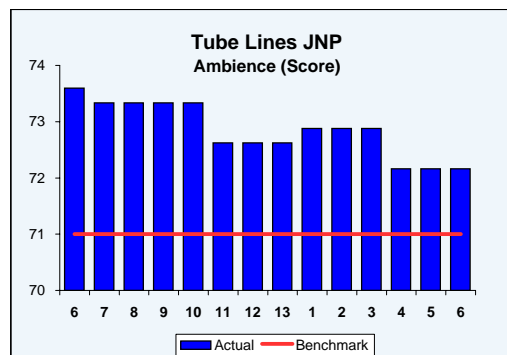
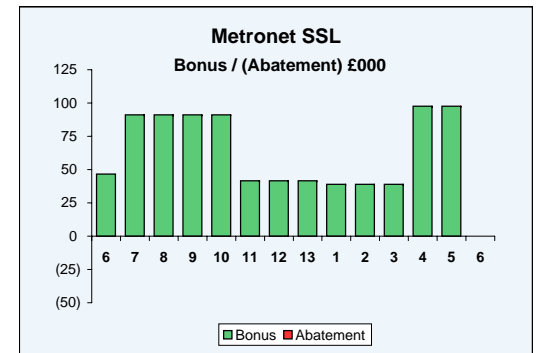
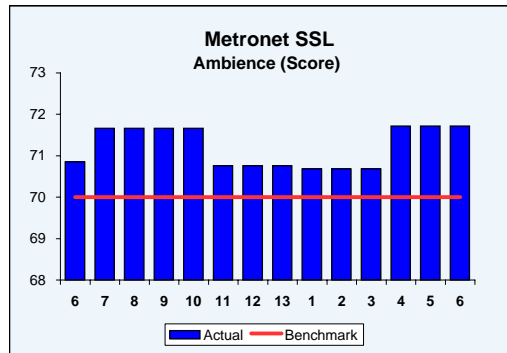
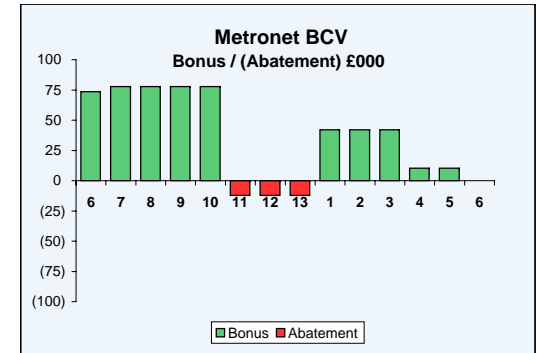
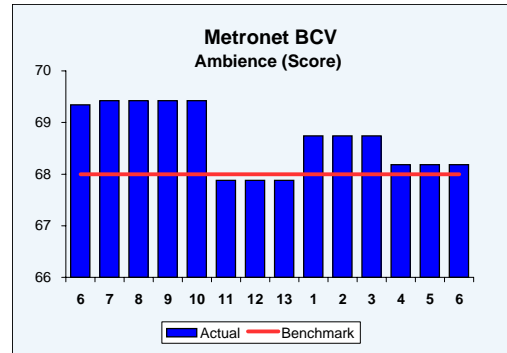


**London Underground Period Performance Report  
To Period 6 2007/08  
PPP Performance vs Ambience Benchmarks**

BCV Aggregate Ambience Score for Q2 is above benchmark at 68.18, a decrease of 0.56 points on the previous quarter due to deterioration in scores primarily on the Bakerloo and Victoria Stations. Bakerloo Stations have decreased by 3.09 points and Victoria by 4.04. There were 26 stations which failed to achieve their benchmark - 1 Victoria Line Station 3 Bakerloo Line Stations and 22 Central Line stations. Victoria Line Train scores are below benchmark this quarter continuing the trend in poor performance, the only line to see an improvement is the Bakerloo Line which saw an increase of 0.66. Q4 is the only quarter to have failed to achieve benchmark in 2006/2007 due to poor performance in train cleanliness and removal of station platform graffiti.

SSL Q3 2006/07 results (Q2 MSS) increased from 70.9% to 71.7% due to better cleanliness and condition station scores and more refurbished D stock trains. The result for Q4 (Q3 MSS) is similar to the 05-06 Q4 result, but has reduced to 70.8% since Q3. Although the A and D stock remain at previous levels, the Circle and H&C stock scores have reduced by over 3 percent. This is caused by less robust cleanliness and condition maintenance regimes. The number of stations that have not met the minimum standard have reduced from nine to six. The largest variance relates to improved East London line stations whose score has improved from 69.7% to 78.6% due to better asset condition and cleanliness. The Q1 07-08 results are very similar to the previous Quarter and have similar stations and train scores. The striking comparison is between Q1 06-07 and Q1 07-08 which fell from 72.2% to 70.7%. This is mainly due to poorer 'A' stock scores for both condition and cleanliness attributes. The Q2 07-08 results have increased from 70.7% to 71.7%. The one percent increase is mainly due the D stock increased score of four per cent as a result of the continuing refurbishments.

JNP Ambience performance in 2006/07 was generally good with above benchmark performance throughout the year but with a small decline in scores towards the end of the year. There was a small fall in Q1's scores (which apply for Periods 4-6) to 72.2 (CuPID value) and this remains better than benchmark. There are some improvements to train attributes scores on the Jubilee and Northern lines although Piccadilly line scores have fallen. On stations there is a general improvement in decor condition performance on the Jubilee and Northern lines but not on the Piccadilly line. Cleanliness, litter, condition of other station facilities and graffiti performance on all lines has worsened apart from routeway and subway litter on the Piccadilly line. There has also been a small decline in the appearance of lifts and escalators.



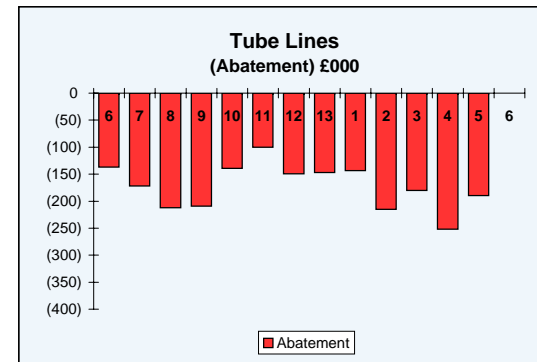
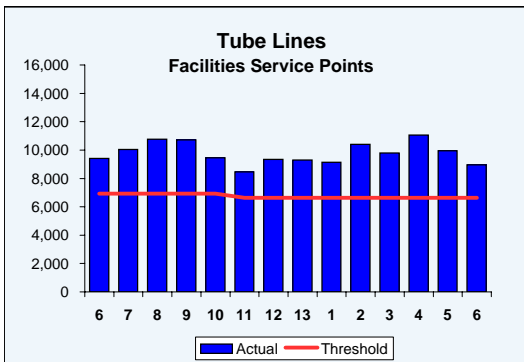
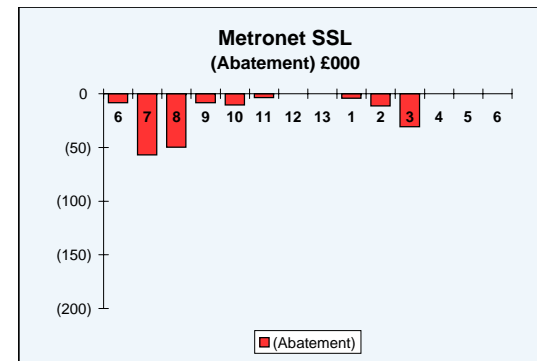
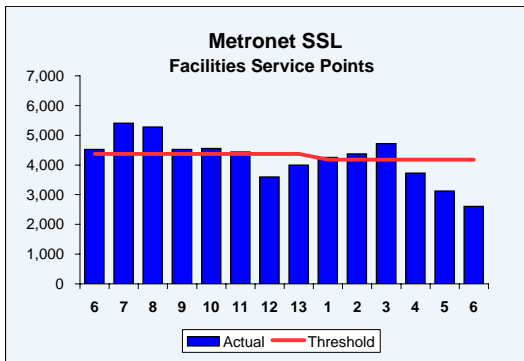
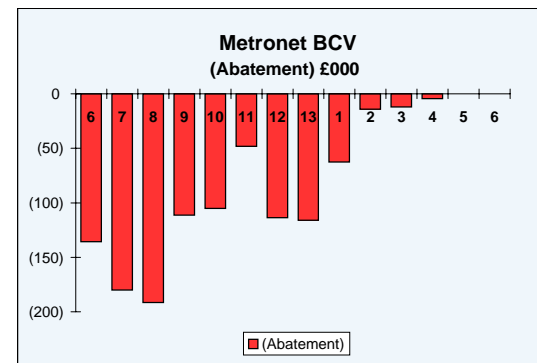
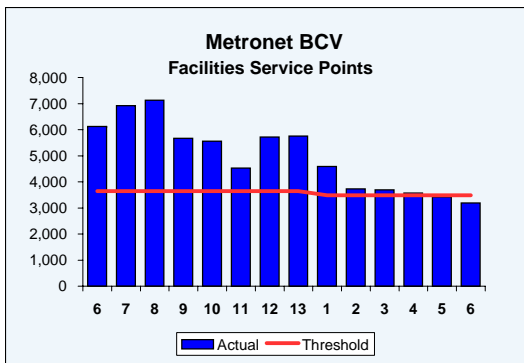
**Note:** The Quarter 1 2007-08 MSS scores determine the ambience bonuses or abatements for Quarter 2 2007-08 (Periods 4 - 6)

**London Underground Period Performance Report  
To Period 6 2007/08  
PPP Performance vs Facilities Service Point Thresholds**

Performance for 2006/07 was 58% worse than threshold. The peaks in periods 4 to 8 were due to poor performances of the Dot Matrix at Northolt and Snaresbrook and of the Train Information Management System at South Ruislip. Performance in periods 9 and 10 improved due to better Dot Matrix Indicator and Public Address performance. Current 2007/08 performance is showing 9% worse than threshold but this is likely to change going forward as faults are closed out. The highest agreed incidents in Period 6 related to a faulty help point at Oxford Circus.

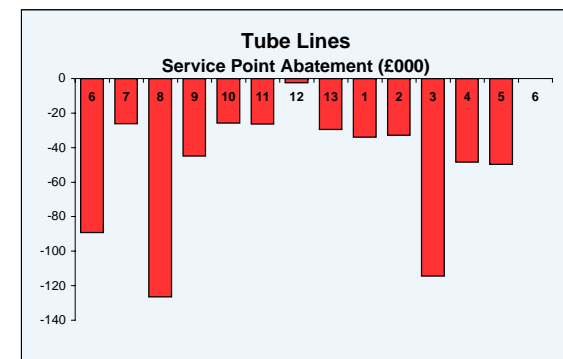
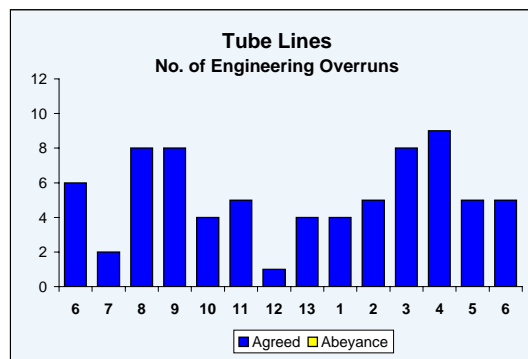
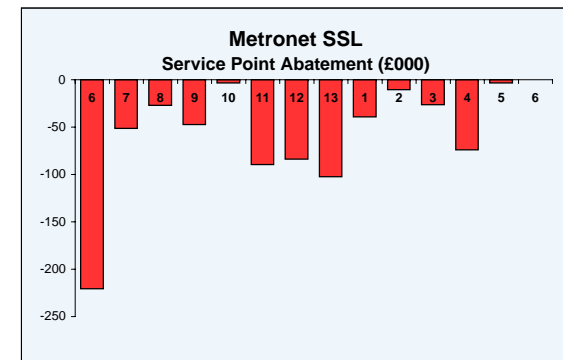
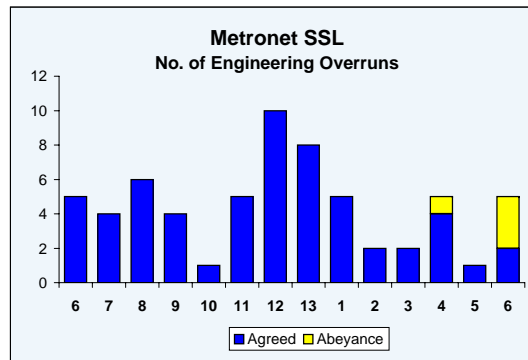
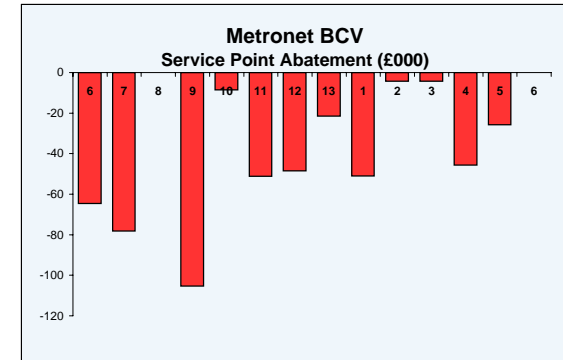
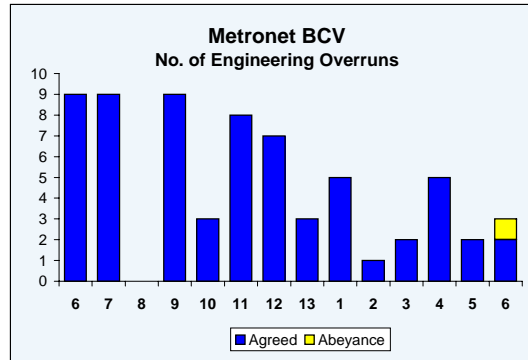
Performance for 2006/07 was 4% worse than threshold. The peak in period 7 was for defective Dot Matrix Indicators at New Cross Station whilst in period 8 the peak was caused by a failed Cleaning Audit at Great Portland Street. Performance in 2007/08 is currently 10% better than the tougher 2007/08 threshold, although this is likely to worsen after all incidents in period 6 have been agreed. The largest agreed incident in period 6 was for Train Description problems at Plaistow.

Performance in 2006/07 was 53% worse than threshold. YTD performance in 2007/08 is 49% worse than threshold. In period 6 performance is slightly better than Period 5. The volume of service points has risen for Cleaning Audits, Clocks, Help Points, and Public Address Systems. There was a fall in service points for CCTV, DMI, Mobility Impaired Lifts, Platform Edge Doors and Toilets. Fault volumes have risen for Clocks, Dot Matrix Indicators, Public Address Systems, Help Points, and Platform Edge Doors. There are no faults or service points this period for Train Service Management Information Systems.



## London Underground Period Performance Report To Period 6 2007/08 Engineering Overtuns

Current Period Details (Incidents where attribution has not been agreed are highlighted in yellow)					
Line	Location	Start	End	SPs	LCH
VIC	NORTHUMBERLAND PARK DEPOT	28/08 05:22	28/08 05:26	60	4
BAK	ELEPHANT & CASTLE	29/08 05:16	29/08 05:55	195	46
CEN	WHITE CITY	29/08 05:10	29/08 05:43	165	1232
Line	Location	Start	End	SPs	LCH
DIS	PARSONS GREEN SIDINGS	28/08 04:39	28/08 04:58	95	0
MET	AMERSHAM / CHESHAM	30/08 04:51	30/08 05:06	75	1
CIR/DIS/H	ALDGATE EAST	23/08 05:00	23/08 08:25	2400	71,464
CIR	EDGWARE ROAD (C & H)	31/08 04:50	31/08 05:12	110	275
DIS	PARSONS GREEN SIDINGS	06/09 04:33	06/09 04:45	60	0
Line	Location	Start	End	SPs	LCH
PIC	WOOD GREEN	28/08 04:37	28/08 05:18	205	59
NOR	FINCHLEY CENTRAL	19/08 07:11	19/08 08:46	475	442
PIC	NORTHFIELDS DEPOT	28/08 04:47	28/08 04:50	15	0
PIC	COCKFOSTERS	29/08 04:54	29/08 05:25	155	221
JUB	NORTH GREENWICH	05/09 05:32	05/09 05:42	50	34



Lost Customer Hours due to Engineering Overtuns are included in Availability

TRANSPORT FOR LONDON

UNDERGROUND ADVISORY PANEL

**SUBJECT: VICTORIA LINE UPGRADE**

**MEETING DATE: 6 NOVEMBER 2007**

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**1 Purpose**

1.1 The purpose of the paper is to inform members of the UAP on progress of London Underground's Victoria Line Upgrade (VLU) Programme.

**2 Decision Required**

2.1 The UAP is asked to note the report.

**3 Background**

Line Upgrades

3.1 Each Line Upgrade will deliver an increase in operating capacity. The table below demonstrates the planned peak capacity increase by Line Upgrade and the current planned delivery date by year.

<b>Line Upgrade</b>	<b>Peak Capacity Increase by %</b>	<b>Expected Year of Delivery</b>
Waterloo & City	25%	2007
Jubilee line	33%	2009
Northern line	20%	2012
Victoria line	19%	2013
Piccadilly line	25%	2014
Circle, Hammersmith & City and Metropolitan lines	49%	2016
District line	47%	2018
Bakerloo line	38%	2020
Network Totals	28.5%	2020

## The Victoria Line

- 3.2 The Victoria Line was opened between 1968 and 1971 and was the first passenger carrying automatic railway. It serves 16 stations and caters for 558,000 journeys a day (180m journeys per annum). It is the most intensely used and operated line and links three of the busiest stations on the network (Victoria, Oxford Circus and Kings Cross). An 18% demand increase is expected by 2025
- 3.3 The line has a single rolling stock depot at Northumberland Park.

## Victoria Line Current Operations

- 3.4 The train service is 28tph (trains per hour) during the peak and greater than 20tph from 07:00 to 22:00. All trains are reversed at 2 platforms at Brixton. This is the only line with more trains in service than platforms.
- 3.5 The Victoria Line has 260 train operators based at Seven Sisters, 30 service control staff based at Cobourg Street (near Euston) and around 300 station staff.

## **VLU Benefit to Customers**

### VLU Service Improvements

- 3.6 The following service improvements will be delivered by the VLU:
- Train capacities: standing capacity to increase by almost 10m<sup>2</sup> (approx 7% increase)
  - Journey Times: 16% improvement
  - Headways: decrease from 129 to 109 seconds
  - Service Levels: increase from 28 tph to 33tph at peak times
  - Service Regularity: new Service Control System will give more regular service and allow better control during disruption
  - Timetables to step up service introduced from September 2011 to December 2012

### Ambience Improvements

- 3.7 There will be a line identity colour scheme throughout the trains based on Victoria Line light blue and darker blues. The slide shows the inside of the train mock-up and a mosaic of designs for the new trains' interiors – eg seat moquette, floor coverings.

### Accessibility Improvements

3.8 The new trains will provide full RAVR (Rail Vehicle Accessibility Regulations) compliance but with features more than legislation requires:

- 4 RVAR compliant wheelchair bays in centre of train
- 12 multi-purpose areas
- Door closing indicator & low-level doorway lighting

3.9 The slide shows the inside of the train mock-up showing the wheel chair spaces, a diagram of the layout for wheelchairs and a doorway with yellow floor edge strip and low level lighting to highlight the edge.

### Personal Security & Information Improvements

3.10 The following will be provided on the new trains:

- In-train CCTV and related signage
- Increased and improved lighting
- End-car windows providing visibility into adjacent cars
- Passenger Emergency Alarm (PEA) with talkback and CCTV link
- Increased number of PEA units
- Easier use of PEA as push-button
- Dot matrix in-train displays. LU is investigating TFT screens.
- External destination displays

3.11 The slide shows the inside of the train mock-up showing the end of the car and the PEA with “doors closing” indicator adjacent.

### **VLU Programme Scope & Structure**

#### VLU Programme Scope

3.12 The Metronet PPP upgrade delivers:

- **47 New trains** (currently 43)
- **Re-signalling** with Distance to Go Radio (DTG-R) automatic system. Initially this will be overlain on the existing automatic signalling. The new signalling must be completed before first train enters service
- **New Control Centre** at Northumberland Park
- **Traction Power** system upgrade
- New, improved **Depot** facilities
- **Track** refurbishment

3.13 LU delivers:

- Communications & Transmission (via Connect PFI)
- High Voltage Power (via EdF Powerlink PFI)

- Operational Concepts, Readiness & Assurance
- Resources (train operators, service controllers)
- Timetables and operational procedures
- Stakeholder Management & Communications
- System integration across all the above
- Assurance ie sign off of new/altered assets

#### VLU Supplier Structure

3.14 The supply chain for delivery of the VLU is as follows:

- At the head is London Underground (responsible for high voltage power and Connect communications as well as delivery by the rest of the supply chain).
- Reporting to LU is Metronet (responsible for track, power and depot works)
- Reporting to Metronet is Bombardier (trains).
- Reporting to Bombardier is Westinghouse Rail Systems Ltd (signalling) and they have sub-contractors for signalling software.
- Further reports to LU are EdF Powerlink PFI (high voltage power upgrade) and Connect PFI (communications systems)

#### VLU Organisation

3.15 LU has had a multi-disciplinary Integrated Programme Team since November 2005 co-located with the Metronet VLU team at Euston House. LU personnel cover Project Management; Engineering; Safety; Operations; Planning; Commercial and Stakeholder Communications

3.16 Bombardier are based in Derby and Westinghouse are in Chippenham. Both have offices in Euston House. LU and Metronet have promoted closer working between LU, Metronet, Bombardier and Westinghouse - "One Team"

#### **Outline of Deliverables**

##### VLU Deliverables

3.17 The PPP Latest Contractual Delivery date for the VLU is August 2013 but all parties are targeting an earlier delivery date of November 2011.

3.18 The programme was 8 Periods in delay but a revised programme has been agreed to recover to November 2011. However, there is some slippage to this revised plan.

3.19 At Period 6 07/08 40% of all works had been planned to be complete whilst 35% was actually complete.

## VLU Programme Outline

3.20 The main areas of delivery in the VLU programme are:

- Signalling. Quarter 1 2006 to Quarter 2 2008
- Pre-Series Trains and Signalling (including testing in non-traffic hours). Q1 2005 to Q2 2009
- Fleet Rollout. Q2 2008 to Q1 2011
- Fleet reliability proving (in traffic hours) Q1 2009 to Q1 2011
- Service Control Centre. Q1 2004 to Q1 2010
- Infrastructure Works (Depot, Track, Power, OPO CCTV). Q4 2003 to Q2 2009
- Delivery of Journey Time Capability Improvement No 1. Q1 2011
- Signal Optimisation. Q2 2008 to Q4 2011
- Delivery of Journey Time Capability Improvement No 2. Q4 2011
- Decommissioning/removal of old assets. Q4 2011 to Q4 2012

## VLU Key Milestones

3.21 The timeline of the key milestones is as follows:

First signal area available for test	Q4 2007
Signal equipment installation complete	Q4 2007
Validated signal software for Train 2	Q1 2008
Start of Train 1 testing signals in engineering hours	Q1 2008
Deliver Train 2 to London	Q2 2008
Start test in traffic hours	Q3 2008
Start tests with passengers	Q4 2008
Start train fleet production	Q2 2008
Control Centre testing starts	Q2 2008
Control Centre Demonstration	Q4 2009
Last new train delivered	Q1 2011
Delivery of Journey Time Capability Improvement No 1	Q1 2011
Old signals decommissioned	Q4 2011
Delivery of Journey Time Capability Improvement No 2	Q4 2011

## VLU Programme

3.22 The major areas of the Metronet programme, their financial value and the percentage complete are:

Signals and Control	£273M, 63% complete
Rolling Stock	£405M, 14% complete
Infrastructure (Power, Depot, Track, OPO CCTV)	£85M, 38% complete
System Wide	£45M, 51% complete
<b>Total Programme</b>	<b>£808M, 35% complete</b>

3.23 Major LU works are:

Edf Power Works	£140M, 29% complete
Connect	£20M, 12% complete

### **Progress of Key Areas and Issues**

#### Rolling Stock

3.24 Rolling stock progress is as follows:

- The mock-up of a new train achieved successful Customer Acceptance Testing in July 2006
- The first pre-series test train, Train 1, was delivered to London in May 07 (3.5 months late)
- Train 1 is testing train systems on the Victoria Line in non-traffic hours (66% complete). There are electromagnetic compatibility issues with “Delta” track circuits.
- Train 2 is built and testing in Derby with signalling. It is due in London April 08.
- Compared to Train 1, Train 2 has extra functionality to enable it to operate in passenger service - OPO CCTV, enhanced doors, customer information and full train interior
- Platform humps to be introduced at accessible platforms to meet RVAR requirements

#### Signalling – Equipment

3.25 Signalling equipment progress is as follows:

- All 14 new Signal Equipment Rooms (SERs) are built and are being equipped. Of these, 10 are under test and 8 are permanently energised. Overall, SERs are 85% complete
- The new signalling links to the old at Interlocking Machine Rooms (IMRs). 11 of the 16 IMRs are under test. Overall, IMRs are 81% complete
- Inter-station signal cable installation is virtually complete (560km)
- Distance to Go-Radio (DTG-R) will produce “Limit Of Movement Authority” instructions to the trains. This is the equivalent of the colour light signals on other lines. It has been tested at Blackhorse Rd.
- Signalling equipment will have a phased completion between October 2007 and March 2008. This is a 2 month delay.

### Signalling – Train Control System

- 3.26 The Train Control System (TCS) has signalling components both in SERs and on the trains. The system controls the safe movement of trains via Automatic Train Operation (ATO) and Automatic Train Protection (ATP). It requires software development which is a key risk to the VLU programme as there is no proven “base” apart from the (incomplete) JLE system. Westinghouse have outsourced all software development so there is a longer supply chain.
- 3.27 Products (components of software) are currently being delivered with reduced functionality. There is a need for time and facilities (eg test track) to prove reliability/robustness of the TCS and integration with train, prior to operational introduction.
- 3.28 LU has driven reviews which identified software development concerns. More intense focus and collaborative working has been established throughout the supply chain but this needs constant drive.

### Service Control Centre

- 3.29 The Control Centre building at Northumberland Park is complete and signalling equipment is being installed. The Contract for the Line Management System is to be let by end of 2007.

### Reliability Growth

- 3.30 Testing time in engineering hours is very restricted but the reliability of the new equipment must be proven by testing away from the Victoria Line to ensure minimal disruption to customers. There is a trade off between time, access and cost in terms of what reliability testing facilities should be provided.
- 3.31 Bombardier have a test track at their Derby works but its length and access to it are limited. Alone, it is unlikely to provide full confidence in train and signalling reliability. Metronet and LU could accept reduced functionality to hold the programme but that would back end the programme risk. Therefore, other testing facilities, including an additional test track, are being investigated and solutions are becoming clearer.
- 3.32 There is also a need to ensure that the performance of the old systems remains satisfactory

### Infrastructure

Progress in the Infrastructure areas is as follows:

### 3.33 Track

- Cleaning of all the Victoria Line running tunnels is complete.
- Rail grinding, to reduce noise and improve ride, was completed in early 2007 (14km)
- A plan has been developed for delivery of all necessary track works by June 2009. 35km is planned. 64% is complete.
- A plan for controlling and improving the condition of the Wheel Rail Interface has been developed and is being implemented

### 3.34 Power

- Metronet traction power work is progressing (feeder cables, section switches, 50km of composite conductor rail)
- The HV power works contract has been let to EdF Powerlink. Cabling has started.

### 3.35 Connect

- The supply of new train radios has been contracted
- All (15) “non-vital” communications links have been installed

### Tunnel Cooling

3.36 The new trains are more energy efficient, but increased train services will require more energy and therefore generate more heat. The existing power solution for the VLU is for 3500A maximum train current with current regeneration (train supplies current back into the supply when braking) and limited train coasting. Studies have shown that increasing maximum current to 4500A and introducing “intelligent” coasting would reduce power needs and the associated temperature increase. Plans are being developed for implementation to decrease the heat produced and to provide increased tunnel ventilation. The new fans installation will go out to tender in Q1 2008

### Access and Closures

3.37 Access to the railway for VLU works is a heavily constrained commodity. Metronet have developed an access planning model and they produce a rolling 26 week access plan.

3.38 Metronet continue to investigate how more access can be provided or its efficiency of use improved. Track improvement works allowed 24hr track patrolling to be moved to 48hr patrolling, thereby providing additional access for other works. Initiatives to use access more efficiently include use of existing trains for deliveries, alternative access/storage/waste removal methods and safety plans to allow multiple work sites & train movements.

3.39 LU has worked with Metronet and EdF to efficiently integrate access for EdF power works with Metronet’s work

- 3.40 The works necessitate weekend Closures. There is a plan for Closures to the end of 2010. In 2006/07 there were 18 closures 2006/07 and in 2007/08 17 closures are planned. Some will be full line closures.
- 3.41 In addition a period of Extended Engineering Hours (Mon-Thur after 23:00, July to Nov 07) has been granted to Metronet. Further periods of extended engineering hours, or alternative access, will be needed in order to complete the whole VLU programme.

#### VLU Programme – Key Issues

- 3.42 The main issues facing the VLU programme are:
- Delivery of the Recovery Plan. It is in place but is still challenging, particularly Train 2 testing with signalling and delivery of the train
  - Delivery of the signalling equipment recovery plan and the development of the signalling software.
  - The volume of work and number of workstreams competing for access.
  - Integration of rolling stock and signalling testing and commissioning

#### VLU Key Risks

- 3.43 The key risks for the VLU Programme are:
- Programme / Cost. Ability to deliver the recovery programme, integration of Metronet and its suppliers, availability of access and whether the planned pre-Olympics programme completion is achievable.
  - Engineering. Whether software development can be completed with full functionality when required in the programme, provision of sufficient off-site test track facilities to prove train and signalling, whether reliability can be delivered without delay or impact on service and whether functionality will be reduced to gain reliability or programme
  - Operational Readiness. The timing of training, staff recruitment, etc

#### Summary

- 3.44 The VLU PPP Contract latest completion date is August 2013 but all parties are aiming for November 2011 completion.
- 3.45 This is challenging, especially for signalling, but the picture will be clearer in early in 2008 when key signalling equipment and software milestones should have been delivered.
- 3.46 The programme is complex requiring integration of many workstreams and access constraints are a key issue
- 3.47 There are a number of key engineering issues to be resolved e.g. train control software and reliability growth.

3.48 The Programme is 35% complete but near-term milestones are some 8 weeks late.

3.49 2007/08 is a key year for delivery

#### **4 Equalities implications**

4.1 The VLU will provide improvements to customer visual and audio information and will meet Rail Vehicle Accessibility regulations. Level platform/train access at the two middle cars of each train will be provided.

#### **5 Crime and Disorder implications**

5.1 On the new trains, improved lighting, end-car windows, in-car CCTV and more, better-placed passenger emergency alarms will improve customers personal security.

#### **6 Sustainability**

6.1 The new trains are more energy efficient than the old and include current regeneration (train supplies current back into the supply when braking). Changes to maximum train current and use of an intelligent coasting system would improve efficiency further.

#### **7 Recommendation**

7.1 The UAP is recommended to note the progress of the Victoria Line Upgrade.

**TRANSPORT FOR LONDON**  
**UNDERGROUND ADVISORY PANEL**

**SUBJECT: LINE UPGRADES: OPERATIONAL READINESS**

**MEETING DATE: 6 NOVEMBER 2007**

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**1. Purpose**

- 1.1 The purpose of this paper and associated presentation is to inform the UAP of the size of the challenge faced by London Underground (LU) in preparing for and accepting the multiple Line Upgrades being delivered over the next 15 years.
- 1.2 It covers the Management System developed for Line Upgrades, currently being implemented across all Line Upgrades to help to ensure that LU remains in a position of control during one of the biggest challenges that it has ever faced.
- 1.3 The presentation will cover the complex interrelationships between the various line upgrades and the challenges of ensuring that the full benefits of the Line Upgrades are achieved.
- 1.4 The Line Upgrades Management System has been designed to manage the challenges and impacts of the Line Upgrades. It is built upon the sound principles of dynamic and integrated planning, scopes agreed by all parties, timely assurance, Trades Union engagement and Peer review.

**2. Decision required**

- 2.1 To note the approach to operational readiness for the line upgrades within LU.

**3. Equalities implications**

- 3.1 The Line Upgrades will provide improvements to customer visual and audio information and will meet Rail Vehicle Accessibility regulations. Level platform/train access at the two middle cars of each train will be provided.

#### **4. Crime and Disorder implications**

- 4.1 On new trains, improved lighting, end-car windows, in-car CCTV and more, better-placed passenger emergency alarms which will improve customers' personal security.

#### **5. Sustainability**

- 5.1 The new trains and signal and control systems are more energy efficient than the old.

#### **6. Recommendation**

- 6.1 The Underground Advisory Panel is recommended to note the LU Operational Readiness approach and management system.